

7 HYDROLOGY AND HYDROGEOLOGY

7.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) provides a description of the hydrology and hydrogeology (water) environment within and immediately surrounding the site of the Proposed Development and an assessment of the potential effects of the Proposed Development on hydrology and hydrogeology and sets out any required mitigation measures where appropriate.

The principal objectives of this chapter are to identify:

- Hydrological and hydrogeological characteristics of the receiving environment at the site of the Proposed Development.
- Potential effects that the Proposed Development may have on the receiving water environment.
- Potential constraints that the environmental attributes may place on the Proposed Development.
- Required mitigation measures which may be necessary to minimise any adverse effects related to the Proposed Development.
- Evaluate the significance of any residual effects.

This chapter of the EIAR should be read in conjunction with Chapter 4 Population and Human Health, Chapter 5 Biodiversity, Chapter 6 Land and Soil, Chapter 8 Air Quality, Chapter 11 Landscape and Visual Effect and Chapter 13 Material Assets: Waste and Utilities of the EIAR and other information provided by the Applicant pertaining to the design proposals for the Proposed Development.

7.1.1 Quality Assurance and Competency of Experts

The chapter was prepared by Gareth Carroll BA BEng MEnvSc CEnv, a Principal Consultant of DNV. Gareth, a Chartered Environmentalist with the Institute of Environmental Sciences (CEnv) and over 13 years' experience in environmental assessment of brownfield and greenfield sites for a range of project types and geological and hydrogeological site settings and is professionally competent and accredited to undertake environmental impact assessments.

The chapter was reviewed and approved by Patrick Higgins BSc, MSc, MEnvSc CEnv who is a Technical Director with DNV, with over 20 years' experience in environmental consultancy. Patrick brings extensive expertise in the preparation and evaluation of environmental assessments. He is professionally accredited and recognised as competent to undertake Environmental Impact Assessments (EIAs), ensuring that the content of this chapter meets the highest standards of technical accuracy and regulatory compliance.

7.2 Study Methodology

7.2.1 Relevant Legislation & Guidance

The methodology adopted for the assessment has regard to the relevant guidelines and legislation including:

- Council Directive 2006/118/EEC, 2006. On the protection of groundwater against pollution and deterioration. European Parliament and the Council of European Communities.
- Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy with amendments 2455/2001/EC, 2008/32/EC and 2008/105/EC (Water Framework Directive (WFD)).
- European Commission, 2022. WFD Reporting Guidance 2022. Final Draft V4.
- Act No. 30/2007, Water Services Act 2007 as amended.
- Act No. 21/1990, Local Government (Water Pollution) (Amendment) Act, 1990 as amended.
- Act No. 1/1977, Local Government (Water Pollution) Act, 1977 as amended.
- S.I. No. 722/2003 – European Communities (Water Policy) Regulations 2003 as amended.
- S.I. No. 489/2011 – European Communities (Technical Specifications for the Chemical Analysis and Monitoring of Water Status) Regulations, 2011.
- S.I. No. 122/2010 – European Communities (Assessment and Management of Flood Risks) Regulations 2010 as amended.
- S.I. No. 272/2009 - European Communities Environmental Objectives (Surface Waters) Regulations 2009 as amended.
- S.I. No. 9 of 2010 - European Communities Environmental Objectives (Groundwater) Regulations 2010 as amended.
- Transport for Ireland (TII), 2009. Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes.
- WFD Working Group, 2005. Guidance on the Assessment of the Effect of Groundwater Abstractions (WFD, 2005).
- South Dublin County Council (SDCC, 2022). South Dublin County Development Plan 2022-2028.

The construction works will be managed in accordance with all statutory obligations and regulations and with standard international best practice. Other guidance used in the assessment of potential effects on the receiving water environment include:

- Construction Industry Research and Information Association, 2016. Groundwater Control: Design and Practice (CIRIA – C750).
- Construction Industry Research and Information Association, 2015. Environmental Good Practice on Site Guide (CIRIA – C741).
- CIRIA, 2007. The SuDS Manual (C697).
- CIRIA, 2006. Control of Water Pollution from Linear Construction Projects: Technical Guidance (C648).

- Construction Industry Research and Information Association, 2001. Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (CIRIA – C532).
- Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy
- Enterprise Ireland Oil Storage Guidelines (BPGCS005).
- Environmental Protection Agency (EPA), 2013. IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities.
- UK Environment Agency, 2004. UK Pollution Prevention Guidelines (PPG).
- Inland Fisheries Ireland (2016). Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters.
- Department of the Environment, Heritage and Local Government, Environmental Protection Agency and Geological Survey of Ireland, 1999. Groundwater Protection Schemes (DEHLG/EPA/GSI, 1999).
- Department of the Environment, Heritage and Local Government, 2009. Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (DEHLG, 2009).
- Department of Housing, Planning and Local Government, August 2018. Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Effect Assessment (DHPLG, 2018).
- Environmental Protection Agency, 2014. Guidance on the Authorisation of Direct Discharges to Groundwater.
- Environmental Protection Agency, 2013. Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites.
- Environmental Protection Agency, May 2022. Guidelines on the information to be contained in Environmental Effect Assessment Reports (EPA, 2022).
- Transport for Ireland (TII), 2008. Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes.

7.2.2 Consultation

A pre-planning meeting was held between the applicant's design team and South Dublin County Council (SDCC) on the 14th of August 2024. It was noted by SDCC that there were areas of marsh habitat on site that required resurvey during the appropriate season, and that a detailed analysis of the site's underlying geology, soils and hydrogeology were needed to understand the hydrological conditions that had allowed for the development of this habitat on site.

A second pre-planning meeting was held between the applicant's design team and SDCC on the 20th of May 2025. Clarification was sought on the site's ecological assessment and the viability of the proposed translocation of marsh habitat. It was noted that the marsh translocation proposal must be supported by clear ecological justification and design evidence demonstrating long-term habitat sustainability.

An Opinion Report following the second pre-planning meeting was received on the 17th of June 2025. Specifically, the Opinion Report highlighted the need for:

“A resurvey of the habitats on the site is recommended, although it is noted that the season for good habitat surveys is almost finished for 2024. Nonetheless, a survey of

the marsh habitat which was not recorded in the original and subsequent site visits is essential, not just to record its presence but to determine its emerging value as a wetland habitat and as a nature-based solution that could be incorporated in a recommended redesign of this development proposal.

A detailed analysis of the underlying geology and soils, aquifer type and sensitivities is needed, including a detailed hydrogeological assessment, to fully ascertain the subsurface factors governing water volume, water emergence patterns, and water flow/seepage off this sloping site. The source and volume of the water supporting the development of a marsh habitat at the break of slope should particularly be determined.

This detailed analysis will be needed to assist with designing a more appropriate model for water management on the proposed development site, with the primary aim of avoiding flood risk either on the proposed site itself or in any residential and development areas downslope from the site.”

A method statement has been prepared by Gannon & Associates Landscape Architecture (Gannon & Associates Landscape Architecture, 2025. Marsh Translocation Report; submitted with the planning application under separate cover), for the proposed translocation of the vegetation on site within the area of marshy ground to the northern section of the site.

A hydrological and hydrogeological risk assessment has been prepared by DNV (DNV, 2025c; included in Volume 3 Appendix 6.1 of the EIAR) to establish baseline conditions at the site and evaluate potential adverse impacts on environmental receptors. The assessment specifically examines the proposed drainage design, which aims to intercept and convey shallow groundwater beneath the site to the receiving watercourses—namely the Corbally Stream, Coldwater Stream, and Cooldown Stream—as well as to the proposed translocated wetland. This design is intended to maintain continuity of the shallow groundwater flow regime across the site and support the establishment and long-term viability of the translocated wetland habitat.

7.2.3 Phased Approach

A phased approach was adopted for this EIAR in accordance with Environmental Protection Agency (EPA) and Institute of Geologists of Ireland (IGI) guidelines as set out above and is described in the following sections.

Element 1: An initial assessment and effect determination stage was carried out by DNV to establish the project location, type and scale of the Proposed Development, the baseline conditions, and the type of hydrological and hydrogeological environment, to establish the activities associated with the Proposed Development and to undertake an initial assessment and effect determination. This element of the assessment also included developing the Conceptual Site Model (CSM) for the site and the receiving environment. A CSM represents the characteristics of the site and identifies the possible relationship and potential risk between contaminant sources (i.e., characteristics of the proposed development), pathways (i.e., transport route or means by which a receptor can be exposed to) and receptors (receiving environment). The term pollutant linkage is used to describe a particular combination of source-pathway-receptor (SPR). Each of these elements can exist independently, but they create a risk only where they are linked together so that a particular contaminant affects a particular receptor through a particular pathway (i.e., a pollutant linkage).

This stage of the assessment included a desktop study that comprised a review of published environmental information for the site. The study area, for the purposes of assessing the baseline conditions for this chapter of the EIAR, extends beyond the site boundaries to include a 2km radius of the Proposed Development site. Potential environmental receptors outside of this radius that are potentially hydraulically connected with the site were also considered. The extent of the wider study area was based on the IGI Guidelines (IGI, 2013) that recommend a minimum distance of 2km radius from the site. This broader area is necessary to identify and evaluate all potential receptors that could be affected by the Proposed Development, either directly or indirectly. The distinction between the application site and the study area is crucial. The site of the Proposed Development is the focal point of the Proposed Development, while the study area includes any potential hydrogeological / hydrological connections to sensitive receptors including habitats that might experience secondary effects.

The desk study involved collecting all the relevant data for the site and surrounding area including published information and details pertaining to the Proposed Development provided by the Applicant and the design team.

A site walkover survey to establish the environmental site setting and baseline conditions at the site of the Proposed Development relevant to the hydrological and hydrogeological environment was undertaken by DNV on the 28th of January 2025.

The Element 1 stage of the assessment was completed by DNV and included the review of the following sources of information:

- Environmental Protection Agency (EPA) webmapping (EPA, 2025).
- Geological Survey Ireland (GSI) Datasets Public Viewer and Groundwater webmapping (GSI, 2025).
- National Parks and Wildlife Services (NPWS) webmapping (NPWS, 2025).
- Ordnance Survey Ireland (OSI) webmapping (OSI, 2025).
- Water Framework Directive Ireland (WFD) webmapping (WFD, 2025).
- Teagasc webmapping (Teagasc, 2025).
- Office of Public Works (OPW) database on historic flooding and the Catchment Flood Risk Assessment and Management (CFRAM) maps (OPW, 2025).
- Information provided by the Applicant pertaining to the design proposals for the Proposed Development.

Other documents and reports reviewed as part of this assessment included the following:

- Ground Investigations Ireland (GII), 2014. Ground Investigation Report (appended to the Roger Mullarkey & Associates, 2025 Drainage and Water Infrastructure Engineering Report submitted with the planning application under separate cover).
- DNV, 2025a. Construction Environmental Management Plan (submitted with the planning application under separate cover).
- DNV, 2025b. Resource and Waste Management Plan (submitted with the planning application under separate cover).

Element 2: Involves direct and indirect site investigation and studies stage where necessary to refine the CSM developed as part of Element 1 and evaluation of the potential effects associated with the Proposed Development.

Intrusive site investigations were undertaken by Priority Geotechnical Ltd. (PGL, 2025; refer to the Hydrogeological Risk Assessment (HRA) prepared by DNV (DNV, 2025c) included in Volume 3 Appendix 6.1 of the EIAR) between the 23rd and 25th of June 2025 which included borehole drilling and installation of five (5 No.) groundwater monitoring wells (BH1, BH2, BH3, BH4 and BH5). Groundwater monitoring at the five (5 No.) newly installed groundwater wells (BH1 through BH5) and surface water monitoring at two (2 No.) locations within the Corbally Stream adjoining the eastern and northern boundaries of the site was conducted by DNV on the 2nd of July 2025. Hydrogeological testing (i.e., slug tests) was also conducted by DNV on the 2nd of July 2025 to assess hydraulic conductivity of the aquifer in the immediate vicinity of selected newly installed groundwater monitoring wells (BH1, BH3 and BH4).

Element 3: Evaluation of Mitigation Measures, Residual Effects and Final Effect Assessment were based on the outcome of the information gathered in Element 1 and Element 2 of the assessment. Mitigation measures to address all identified adverse effects that were identified in Element 1 and Element 2 of the assessment were considered in relation to the construction phase and operational phase of the Proposed Development. These mitigation measures were then considered in the impact assessment to identify any residual effects.

Element 4: Completion of the Hydrology and Hydrogeology sections of the EIAR in this Chapter which includes all the associated figures and documents.

7.2.4 Description of Importance of the Receiving Environment

The Transport Infrastructure Ireland (TII) criteria for rating of the importance of hydrogeological features at the site as documented in the National Roads Authority Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes (NRA, 2009), are summarised in Table 7-1.

Table 7-1. Criteria for Rating Site Importance of Hydrogeological Features

Importance	Criteria	Typical Example
Extremely High	Attribute has a high quality or value on an international scale.	Groundwater supports river, wetland or surface water body ecosystem protected by European Union (EU) legislation e.g., SAC or SPA status.
Very High	Attribute has a high quality or value on a regional or national scale.	Regionally Important Aquifer with multiple wellfields. Groundwater supports river, wetland, or surface water body. Ecosystem protected by national legislation – e.g., NHA status. Regionally important potable water source supplying >2500 homes. Inner source protection area for a regionally important water source. Quality Class A (Biotic Index Q4, Q5). Flood plain protecting more than 50 residential or commercial properties from flooding.
High	Attribute has a high quality or value on a local scale.	Regionally Important Aquifer. Groundwater provides large proportion of baseflow to local rivers. Locally important potable water source supplying >1000 homes. Outer source protection area for regionally important water source. Inner source protection area for locally important water source.

Importance	Criteria	Typical Example
		Quality Class B (Biotic Index Q3-4). Flood plain protecting between 5 and 50 residential or commercial properties from flooding. Locally important amenity site for wide range of leisure activities.
Medium	Attribute has a medium quality or value on a local scale.	Locally Important Aquifer. Potable water source supplying >50 homes. Outer source protection area for locally important water source. Quality Class C (Biotic Index Q3, Q2- 3). Flood plain protecting between 1 and 5 residential or commercial properties from flooding.
Low	Attribute has a low quality or value on a local scale.	Poor Bedrock Aquifer. Potable water source supplying <50 homes. Locally important amenity site for small range of leisure activities. Local potable water source supplying <50 homes. Quality Class D (Biotic Index Q2, Q1). Flood plain protecting 1 residential or commercial property from flooding.

7.2.5 Description and Assessment of Potential Effects

Effects will vary in quality from negative, to neutral or positive. The effects of effects will vary in significance on the receiving environment. Effects will also vary in duration. The terminology and methodology used for assessing the 'effect' significance and the corresponding 'effect' throughout this chapter are described in Table 7-2 in accordance with EPA, 2022 guidelines on the information to be contained in EIARs.

Table 7-2. Criteria for Assessment of Potential Effects Terminology and Methodology

Quality of Effects/Effects	Definition
Negative	A change which reduces the quality of the environment.
Neutral	No effects or effects that are imperceptible, within the normal bounds of variation or within the margin of forecasting error.
Positive	A change that improves the quality of the environment.
Significance of Effects / Effects	Definition
Imperceptible	An effect capable of measurement but without significant consequences.
Not Significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effects	An effect which, by its character, magnitude, duration, or intensity alters a sensitive aspect of the environment.
Very Significant	An effect which, by its character, magnitude, duration, or intensity significantly alters a sensitive aspect of the environment.
Profound Effects	An effect which obliterates sensitive characteristics.
Extend and Context of Effects	Definition

Extend	Describe the size of the area, the number of sites and the proportion of a population affected by an effect.
Context	Describe whether the extent, duration or frequency will conform or contrast with established (baseline) conditions.
Probability of Effects	Definition
Likely Effects	The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
Unlikely	The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
Duration of Effects / Effects	Definition
Momentary	Effects lasting from seconds to minutes
Brief	Effects lasting less than a day
Temporary	Effects lasting one year or less
Short-term	Effects lasting one to seven years
Medium-term	Effects lasting seven to fifteen years
Long-term	Effects lasting fifteen to sixty years
Permanent	Effects lasting over sixty years
Reversible	Effects that can be undone, for example through remediation or restoration
Types of Effects	Definition
Indirect Effects	Effects on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway
Cumulative Effects	The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects.
“Do-nothing” Effects	The environment as it would be in the future should the subject project not be carried out
“Worst-case” Effects	The effects arising from a project in the case where mitigation measures substantially fail.
Indeterminable Effects	When the full consequences of a change in the environment cannot be described.
Irreversible Effects	When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost
Residual Effects	The degree of environmental change that will occur after the proposed mitigation measures have taken effect.

Figure 7-1 identifies how comparing the character of the predicted effect to the sensitivity of the receiving environment can determine the significance of the effect.

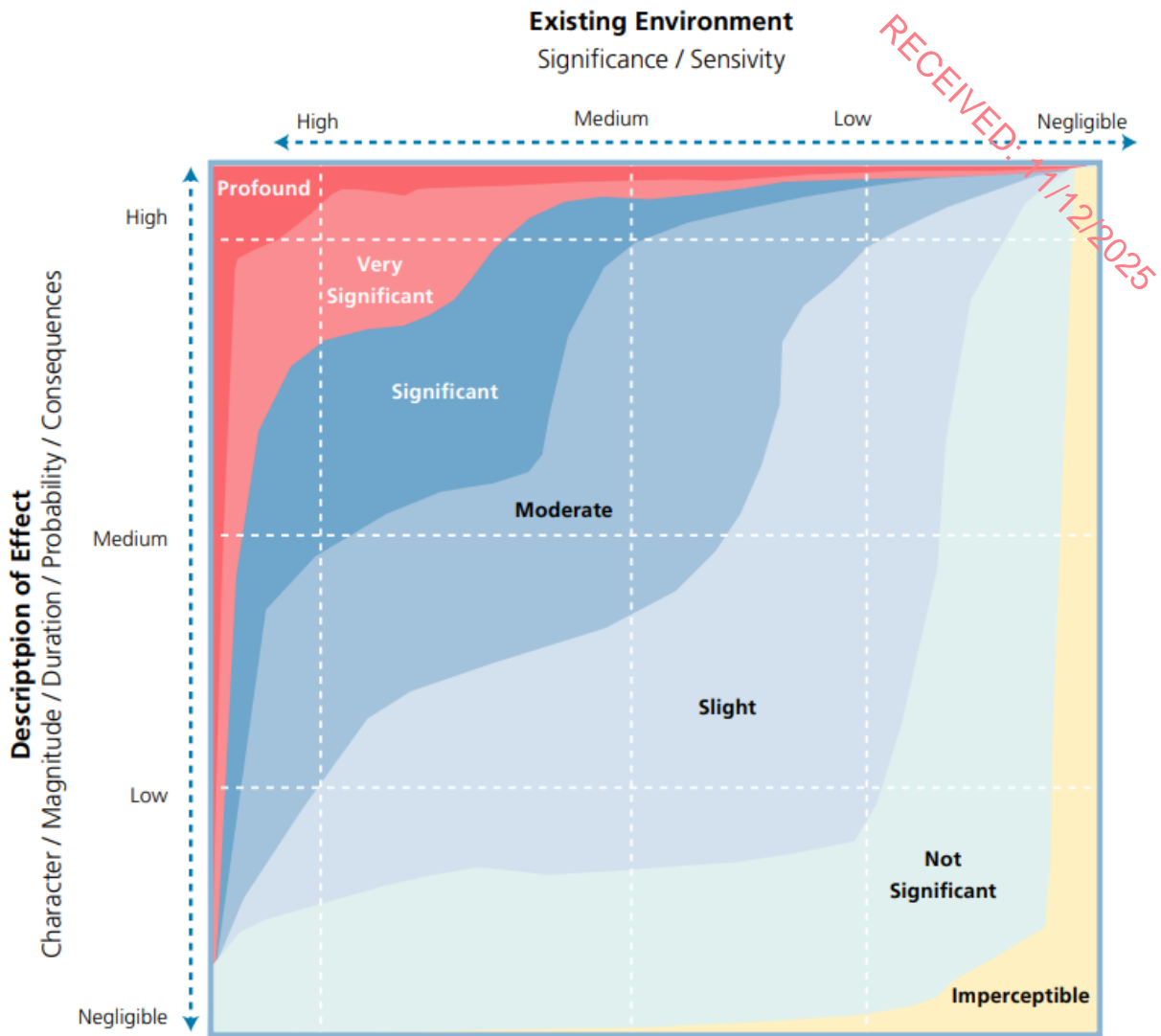


Figure 7-1. Determining Significance

7.3 The Existing and Receiving Environment (Baseline Situation)

7.3.1 Site Location and Description

The site is located to the north of Boherboy Road, approximately 2 km south-west of Tallaght Town Centre, 1 km east of Saggart, 700 m south-west of Citywest Shopping Centre, and 1.6 km south of the N7.

The site comprises approximately 18.7 hectares (Ha) of primarily undeveloped agricultural lands. The lands comprise of two agricultural grassland fields which are separated by a hedgerow and stream. There are three (3 No.) overhead power lines crossing the site (10kV-38kV). The Corbally stream runs along much of the eastern and southern boundary of the site. The Coldwater stream flows along the western boundary, and the Cooldown stream is noted along the central field boundary on the site. The site also comprises a small area of disused grassland, located to the east of the Corbally Stream. Hedgerows and treelines surround the lands. Cattle graze on the agricultural fields, with open cow sheds in the south of the site, adjacent to the entrance.

The land is bound by the Boherboy Road (L2008) to the south, agricultural fields and a single dwelling to the west, Carrigmore residential estate to the north and Corbally residential estate and Carrigmore Park to the east.

The Site location is presented in Figure 7-2 and the current layout of the site is presented in Figure 7-3.

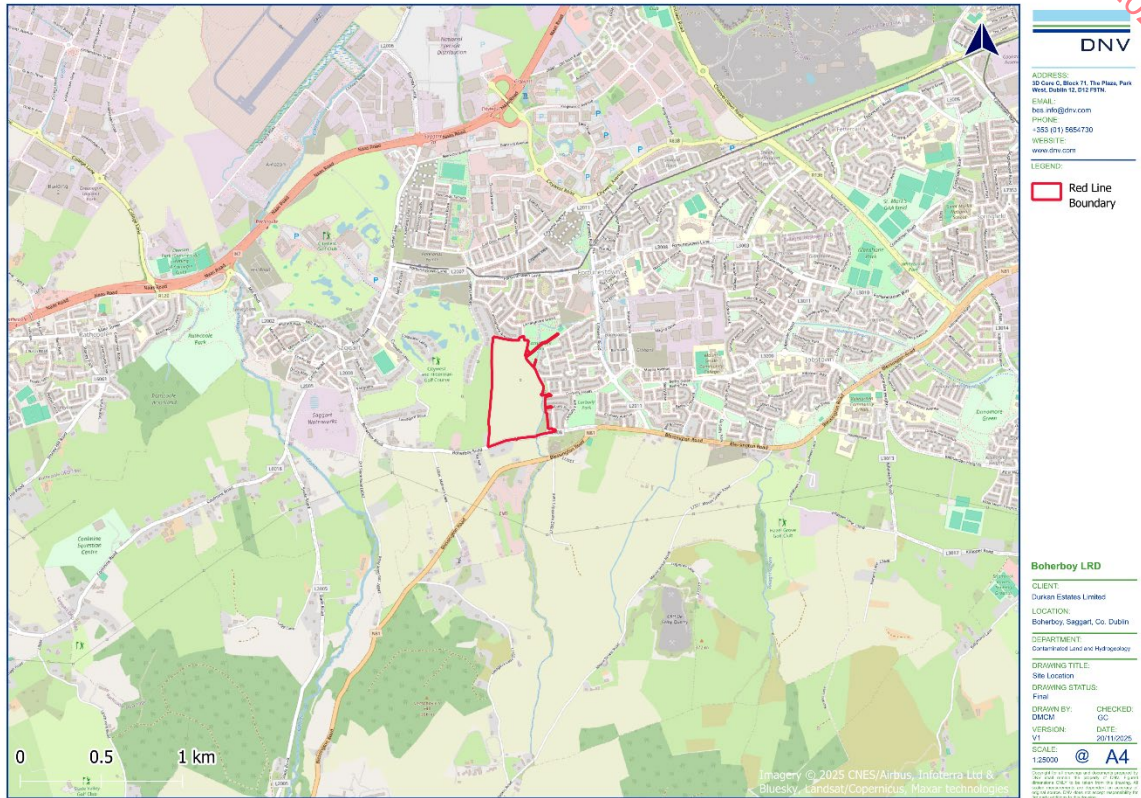


Figure 7-2. Site Location



Figure 7-3. Existing Site Layout

7.3.2 Topography

As documented in the Drainage and Water Infrastructure Engineering Report (Roger Mullarkey & Associates, 2025; submitted with the planning application under separate cover), a topographical survey was carried out on the site and indicates that the lands slopes sharply downwards from the south end of the site towards the north. The existing ground level gradients range from 1/7 to 1/30 generally. There is an approximate drop in level of 38m from the highest portion (SW) of the site to the lowest point (NW).

The existing ground topography forms a natural catchment with approximately 75% of the site draining towards the north-west and the remainder draining towards the north-east of the lands. All catchments drain to existing natural watercourses either side of the site.

The existing topography is presented in Figure 7-4.

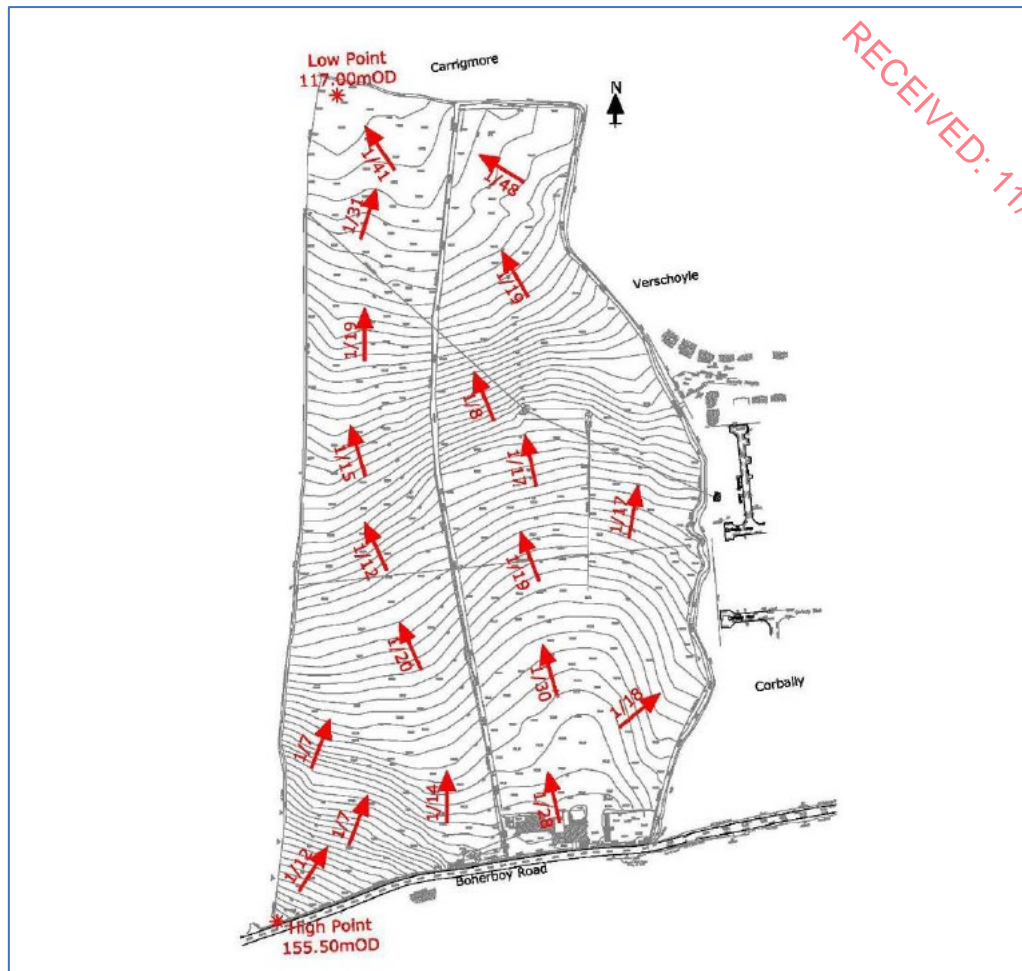


Figure 7-4. Existing Topography (Extract from Roger Mullarkey & Associates, 2025. Drainage and Water Infrastructure Engineering Report)

7.3.3 Soil, Subsoil and Geology

The soils and geology at the subject site are described and assessed in Chapter 6 (Land and Soil) of this EIAR and are summarised as follows:

- The soils beneath the site are mapped by Teagasc (Teagasc, 2025) as deep well drained mineral (mainly acidic), Acid Brown Earths, Brown Podzolics (IFS Soil Code: AminDW) derived from mainly non-calcareous parent materials described as till derived chiefly from Lower Palaeozoic rocks (sandstone and shale till – TLPSsS).
- The subsoil or quaternary sediments beneath the majority of the site are mapped by the GSI (GSI, 2025) as till derived from limestones (TLs). While the subsoil beneath a small portion within the southern boundary of the site is mapped by the GSI (GSI, 2025) as till derived from Lower Palaeozoic sandstones and shales (TLPSsS).
- The bedrock beneath the majority of the site is mapped by the GSI (GSI, 2024) as the Pollaphuca Formation (code SLPLPH) described as coarse greywacke & shale. The bedrock beneath the most northern portion of the site is classified as the Lucan Formation (code CDLUCN) which is made up of dark limestone and shale ('calp).
- While no bedrock outcrops are mapped within the site boundary, a cluster of bedrock outcrops is located approximately 1.08km south of the site (GSI, 2025).

- There are no karst features mapped by the GSI (GSI, 2025) at the Site or within a 2km radius of the site.

A description of the soil and geology encountered during the intrusive site investigation undertaken at the site (refer to the Hydrogeological Risk Assessment (HRA) prepared by DNV (DNV, 2025c) included in Volume 3 Appendix 6.1 of the EIAR) is discussed in Chapter 6 of this EIAR.

7.3.4 Rainfall

Monthly rainfall data available for 1km x 1km grids (for the period 1991 to 2020), the most up to date long term rainfall dataset, was sourced from Met Éireann (Met Éireann, 2025) and is presented in Table 7-3.

Table 7-3. Long Term Mean Monthly Rainfall Data (mm)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
76.3	67	60.8	61.2	62.5	69.4	66.6	75.6	72.3	91.9	98	88.9	890.5
Note: 1km x 1km Irish Grid Coordinated selected for the Site =X (Easting): 305000, Y (Northing): 226000												

The closest synoptic meteorological station to the site for Average Potential Evapotranspiration is at Casement Aerodrome which is located approximately 1.88km northwest of the site and Proposed Development. The average potential evapotranspiration (PE) from the Casement Aerodrome for the period 2022 to 2025 (Met Éireann, 2025) is presented in Table 7-4.

Table 7-4. Average Potential Evapotranspiration (mm)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
14.8	20.8	33.9	53.1	73.1	82.4	81.1	68.7	47.3	27.3	14.8	12.3	529.6

7.3.5 Regional Hydrogeology

7.3.5.1 Groundwater Body

The EPA (EPA, 2025) maps the groundwater body (GWB) beneath majority of the site as the Kilcullen GWB (EU Code: IE_EA_G_003). The Kilcullen GWB covers some 642km² and occupies an area across Co. Dublin, Co. Wicklow and Co. Kildare (GSI, 2025). The bedrock aquifer beneath the most northern area of the site is mapped by the EPA (EPA, 2025) as the Dublin GWB (EU Code: IE_EA_G_008). The Dublin GWB covers some 837km² and occupies an area across Co. Dublin, Co. Kildare and Co. Wexford (GSI, 2025).

Kilcullen Groundwater Body

The Kilcullen GWB Report (GSI, 2025) identifies that the dominant recharge process in this area will be diffuse recharge from water percolating through the overlying tills and into the aquifer. High rates of potential recharge are expected in the hilly areas where there are very thin subsoils and high rainfall. A large portion of this potential recharge will be rejected because the rocks in this area are considered to be poor aquifers with low storativity to accept all the water and therefore, the runoff component to streams will be higher, which can be seen in the very high drainage density in the area.

Groundwater flow is anticipated to principally occur in the top few metres (approximately in the upper 3m of the rocks), mostly within the weathered zone moving laterally towards discharge points such as rivers and springs. However, deeper groundwater flow is possible in some instances within areas of a greater degree of structural deformation which provides a fracture network often encountered (between 10 metres below ground level (mbGL) and 40mbGL). Flow is only anticipated in isolated fractures expected below 30m (GSI, 2025). As discussed in Section 7.3.6, site investigation results indicate that shallow groundwater levels across the site ranged from 1.14mbGL (at BH3 on the 30th of June 2025) to 4.24mbGL (at BH1 on the 2nd of July 2025).

Typical groundwater flow paths are anticipated to be in the order of a couple of hundred metres, with discharge occurring to the closest surface water feature (i.e., overlying streams and rivers as baseflow). Groundwater flow is considered to recharge and discharge on a local scale. Groundwater discharges to the numerous small streams crossing the aquifer, to springs and seeps. Regional groundwater flow paths are not considered to develop, as the rocks do not have sufficient transmissivity to transport water over long distances.

Dublin Groundwater Body

The Dublin GWB Report (GSI, 2025) identifies two (2 No.) different recharge processes, one within Dublin City and the other one recharge in rural areas within this GWB. Recharge is prevented within Dublin City as it is essentially a cement cap on the limestone. The only open areas where recharge may occur are open grassed areas (i.e., parks, squares and gardens). In addition, some recharge occurs from leaking sewers, mains and storm drains. Elsewhere diffuse recharge will occur via rainfall percolating through the subsoil and via outcrops. The proportion of the effective rainfall that recharges the aquifer is determined by the thickness and permeability of the soil and subsoil, and the slope. A high proportion of the recharge will then discharge rapidly to surface watercourses via the upper layers of the aquifer given the low permeability of the aquifers within this GWB, therefore, reducing further the available groundwater resource in the aquifer.

This GWB will discharge directly to the Irish Sea along the coast. Although, there will also be discharge to the overlying gravel aquifers in places and to the overlying rivers, if they are in hydraulic continuity with the aquifer.

Groundwater flow occurs along fractures, joints and major faults. Deeper groundwater circulation is possible given the presence of a number of warm springs within this GWB. The general groundwater flow direction is towards the coast and also towards the River Liffey and Dublin City. This aquifer is not expected to maintain regional groundwater flow paths. The majority of groundwater flow will be a rapid flow within the upper weathered zone near the surface (i.e., likely to be approximately 10mbGL, comprising a weathered zone (i.e., few metres thickness) and a connected fractured zone below the weathered zone). However, flow in conduits is commonly recorded at depths of 30mbGL to 50mbGL. Groundwater circulation from recharge to discharge points will more commonly take place over a distance of less than a one kilometre.

Locally, groundwater flow within the site and vicinity of the site is likely to be toward the Corbally Stream (also known as Brownsbarn Stream), located along the eastern and northern site boundaries and also the Cooldown Stream and Coldwater Stream located along the central field boundary on the site and along the western boundary of the site respectively.

7.3.5.2 Aquifer Classification

The bedrock aquifer within the Pollaphuca Formation (Code: SLPLPH) beneath the site is classified by the GSI (GSI, 2025) as a Poor Aquifer which is generally unproductive except for local zones (PI). The bedrock aquifer within the northern portion of the site within the Lucan Formation (code CDLUCN) is classified as a 'Locally Important Aquifer (LI), which is moderately productive only in local zones' (GSI, 2025).

As documented by the GSI (GSI, 2017 A Description of Irish Aquifer Categories), poor aquifers are capable of supplying 'moderate' to 'low' yields (<100m³/day) and groundwater flows occurs predominantly through a limited and poorly connected network of fractures, fissures and joints. While locally important aquifers are capable of supplying locally important abstractions (e.g. smaller public water supplies, group schemes), or 'good' yields (100-400m³/day). Groundwater flow occurs predominantly through fractures, fissures and joints (GSI, 2017).

There are no gravel aquifers mapped by the GSI (GSI, 2025) at the site or within a 2km radius of the site (GSI, 2025).

The bedrock aquifer beneath the Site is presented in Figure 7-5.

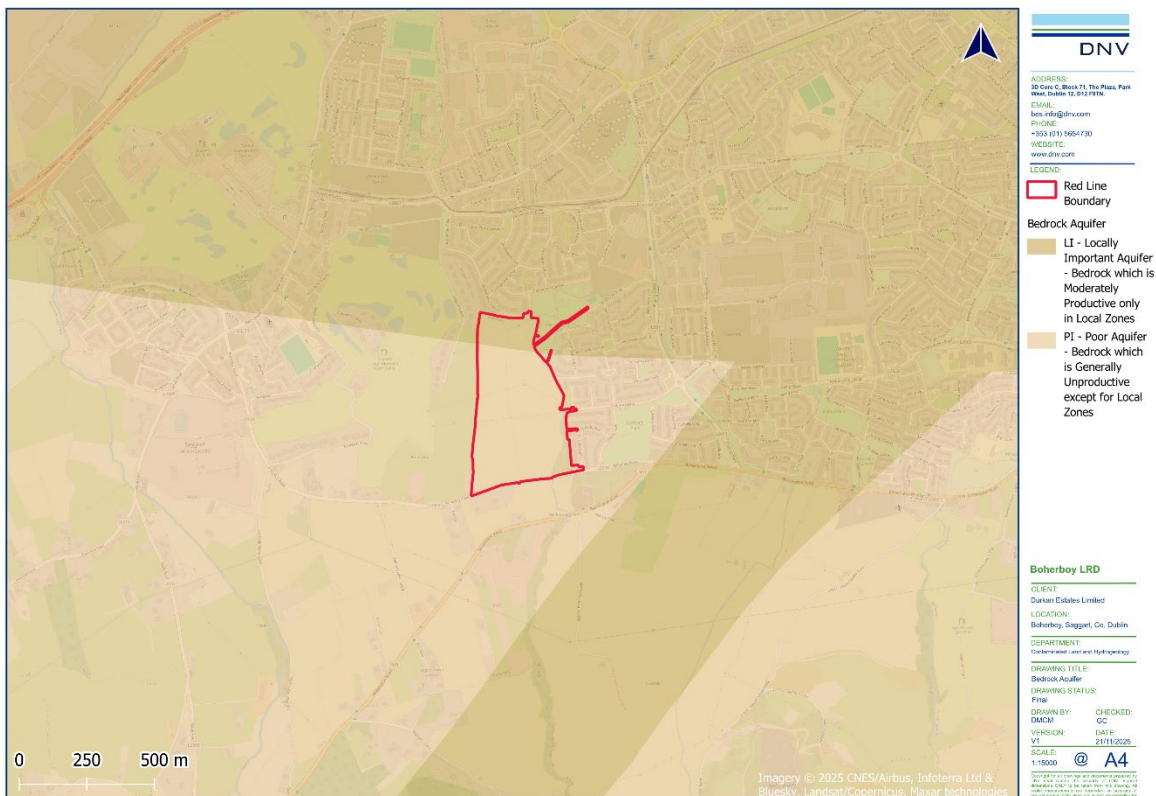


Figure 7-5. Bedrock Aquifer

7.3.5.3 Recharge

The GSI groundwater recharge map provides an estimate of the average amount of rainwater that percolates down through the subsoils to the water table over a year. The map accounts for rainfall that percolates diffusely through soils and subsoils it does not consider water that

enters aquifers at points (e.g., at sinkholes) or along linear features (e.g., along sinking streams/ivers). Groundwater recharge amounts are estimated by considering soil drainage, subsoil permeability, thickness and type, the ability of the aquifer to accept the recharge, and rainfall.

The GSI (GSI, 2025) have calculated a capped recharge of 100mm/year for the aquifer beneath the southern portion of the site and 41mm/year beneath the northern portion of the site based on an effective rainfall (ER) value of 547mm/year and a recharge coefficient of 60% and 8% respectively.

7.3.5.4 Groundwater Vulnerability

The vulnerability categories, and methods for determination, are presented in the Groundwater Protection Schemes publication (DEHLG/EPA/GSI, 1999) and summarised in Table 7-5. The publications state that *‘as all groundwater is hydrologically connected to the land surface, it is the effectiveness of this connection that determines the relative vulnerability to contamination. Groundwater that readily and quickly receives water (and contaminants) from the land surface is considered to be more vulnerable than groundwater that receives water (and contaminants) more slowly and in lower quantities. The travel time, attenuation capacity and quantity of contaminants are a function of the following natural geological and hydrogeological attributes of any area’*.

Table 7-5. Vulnerability Mapping Criteria

Subsoil Thickness	Hydrogeological Requirements				
	Diffuse Recharge			Point recharge	Unsaturated Zone
	Subsoil Permeability & Type			(Swallow holes, losing streams)	(sand & gravel aquifers only)
	High permeability (sand & gravel)	Moderate permeability (sandy subsoil)	Low permeability (clayey subsoil, clay, peat)		
0-3m	Extreme	Extreme	Extreme	Extreme (30m radius)	Extreme
3-5m	High	High	High	N/A	High
5-10m	High	High	Moderate	N/A	High
>10m	High	Moderate	Low	N/A	High
Notes: (i) N/A = not applicable (ii) Permeability classifications relate to the material characteristics as described by the subsoil description and classification method.					

The GSI has assigned a ‘Moderate’ permeability rating and a groundwater vulnerability rating of ‘Moderate’ (M) for the bedrock aquifer beneath the southern part of the site (GSI, 2025). While a ‘Low’ permeability rating and ‘Low’ (L) groundwater vulnerability has been assigned to the bedrock aquifer beneath the northern part of the site.

The anticipated depth to bedrock across the site based on the assigned permeability and vulnerability ratings is greater than 10mbGL. As discussed in Section 7.3.6, previous site investigation results indicate that there were cohesive sediments of low permeability (sandy gravelly clay) up to 3mbGL and some lenses of granular deposits present to the south of the site. Bedrock was not encountered during previous site investigations.

The groundwater vulnerability rating map is provided in Figure 7-6.

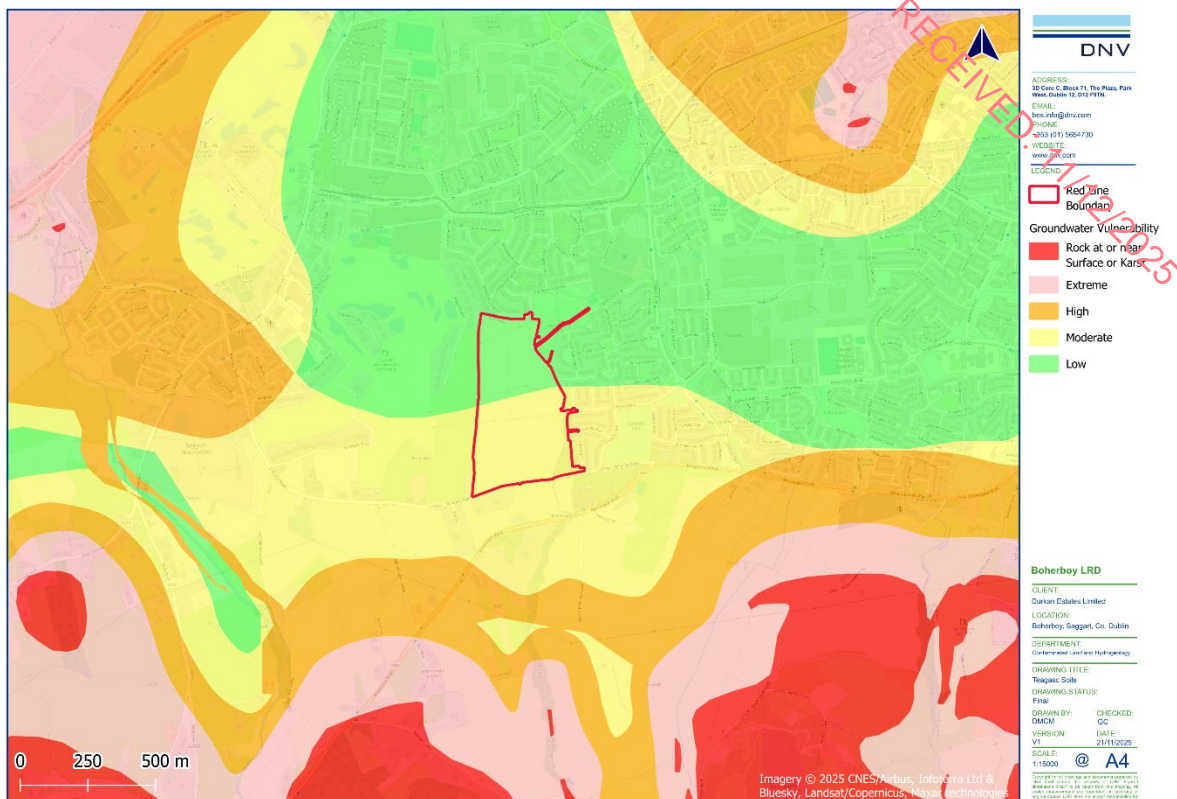


Figure 7-6. Groundwater Vulnerability

7.3.6 Site Investigation Results

7.3.6.1 GII, 2014 Ground Investigation Report

A site investigation was carried out at the site by GII between the 9th and 12th of December 2013 (GII, 2014; appended to the Roger Mullarkey & Associates, 2025 Drainage and Water Infrastructure Engineering Report submitted with the planning application under separate cover).

The scope of the site investigation works consisted of the following:

- Eight (8No.) trial pits excavated to a maximum depth of 3.5mbGL).
- Six (6No.) slit trenches excavated to a maximum depth of 2.5mbGL.
- Nine (9No.) dynamic probes to a maximum depth of 3.3mbGL.
- Four (4No.) soakaway tests to BRE Digest 365.
- Geotechnical and Environmental Laboratory testing.

The site investigation locations are presented in Figure 7-7.

The results of the soakaway testing indicated a soil infiltration rate of $1.38 \times 10^{-5} \text{m/s}$ (1.19m/d) in the vicinity of test location SP1 located in the centre of the southern portion of the site (refer to Figure 7-7). The remaining three (3No.) soakaway tests failed indicating the presence of low permeability subsoils.

7.3.6.2 DNV, 2025 Hydrogeological Assessment

Intrusive site investigations were undertaken by Priority Geotechnical Ltd. (refer to the HRA prepared by DNV (DNV, 2025c) included in Volume 3 Appendix 6.1) between the 23rd and 25th of June 2025 which included borehole drilling and installation of five (5 No.) groundwater monitoring wells (BH1, BH2, BH3, BH4 and BH5).

The site investigation locations are presented in Figure 7-8.

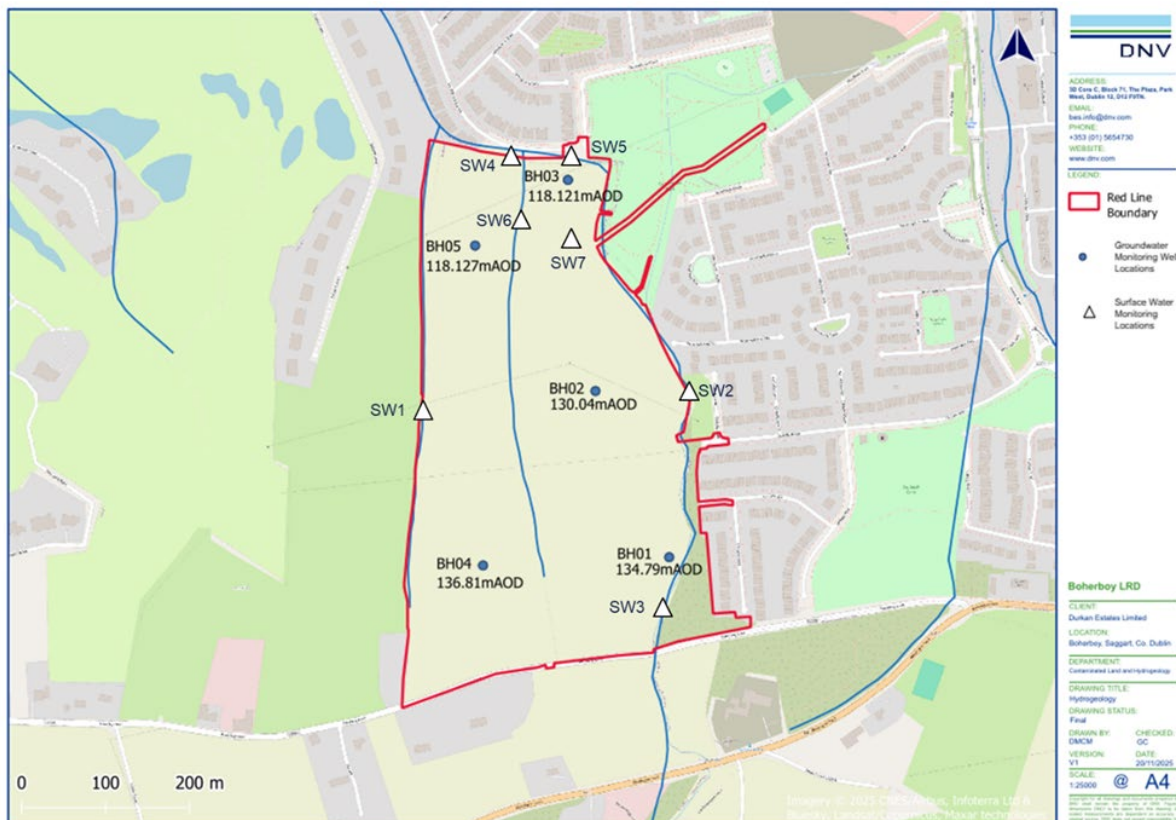


Figure 7-8. Site Investigation Locations

7.3.6.2.1 Groundwater and Surface Water Levels

Gauging of groundwater levels in the newly installed monitoring wells (MW1 through MW5) was completed on the 30th of June 2025 and the 2nd of July 2025. Recorded groundwater levels across the site ranged from 1.14mbGL / 118.221mOD (at BH3 on the 30th of June 2025) to 4.24mbGL / 134.77mOD (at BH1 on the 2nd of July 2025). Refer to Table 6-1 of the HRA (DNV, 2025c) included in Volume 3 Appendix 6.1 for further details.

The invert levels of the stream / drainage channels across the site and at the marshland located in the northeast portion of the site were also surveyed relative to Ordnance Datum (mOD). The recorded elevations in the Corbally Stream (Brownsbarn Stream) ranged from 117.78mOD along the northern boundary of the site to 138.180mOD along the eastern

boundary of the site. Refer to Table 6-2 of the HRA (DNV, 2025c) included in Volume 3 Appendix 6.1 for further details.

7.3.6.2.2 Hydraulic Gradient

As documented in the HRA (DNV, 2025c), a hydraulic gradient of 0.027m/m was calculated in the southern portion of the site, while a steeper hydraulic gradient of 0.053m/m was calculated in the northern portion of the site.

7.3.6.2.3 Groundwater Flow Direction

Based on groundwater elevation data collected from monitoring wells across the site, shallow groundwater flow is interpreted to occur predominantly toward the northwest and northeast, toward the Corbally Stream (also known as Brownsbarn Stream), which borders the eastern and northern boundaries of the site. The inferred groundwater flow direction is presented in Figure 7-9.

The Cooldown Stream, and Coldwater Stream are also considered likely hydraulically connected to the underlying groundwater. This interpretation is based on measured groundwater elevations in close proximity to these streams, suggesting they may be at least partially groundwater-fed. During wetter periods (e.g., winter), rising groundwater levels may enhance this hydraulic connection, increasing baseflow contributions to the streams.

Similarly, the marshland area (invert level: 120.376 mOD) is also considered potentially hydraulically connected to the underlying groundwater. Local groundwater elevations in this area range from approximately 121 mOD to 123 mOD, indicating that the standing water observed in the marshland is likely attributable to both groundwater discharge and surface water runoff.

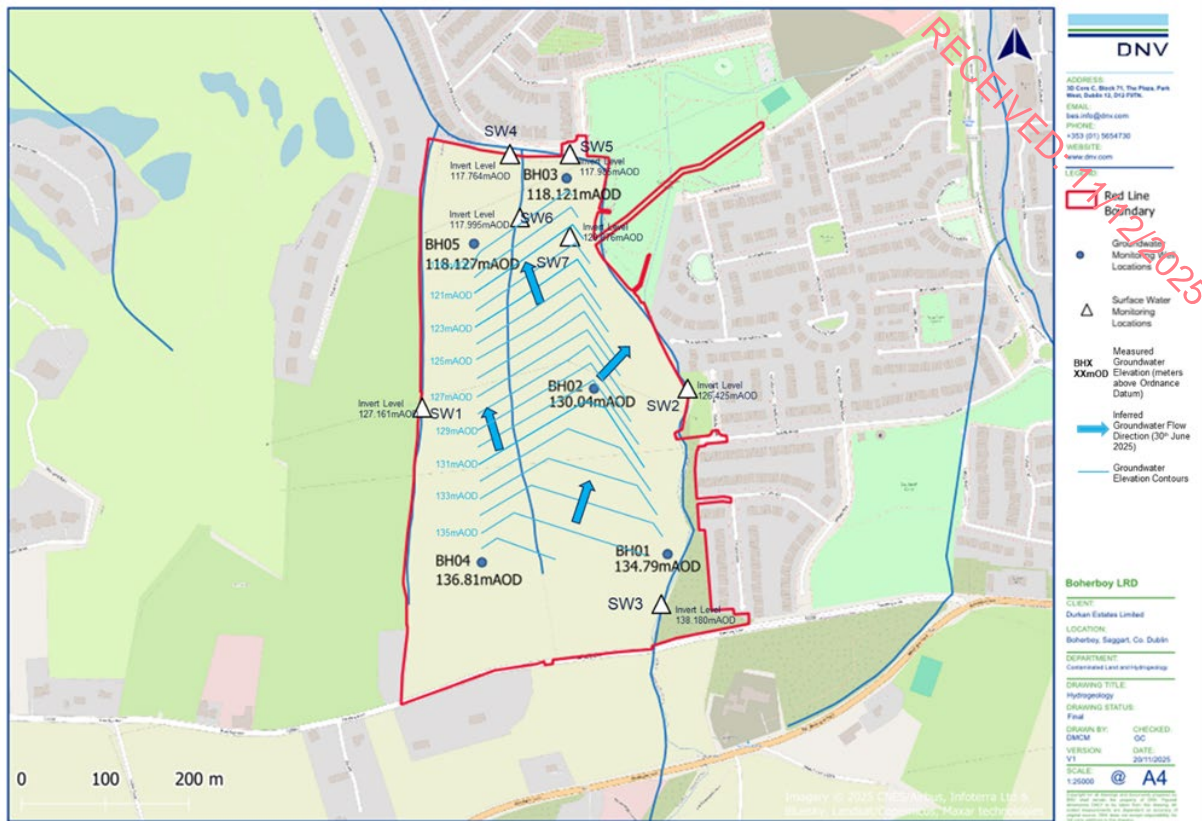


Figure 7-9. Inferred Groundwater Flow Direction (30/06/2025)

7.3.6.2.4 Hydraulic Conductivity

As documented in the HRA (DNV, 2025c), the hydraulic conductivity of the underlying aquifer ranged from 0.147m/d in the south of the site (at BH4) to 1.168m/d in the north of the site (at BH3), which is characteristic of low-permeability strata such as the clay encountered at the site. It is noted that the findings of the soakaway testing undertaken by GII (refer to Section 7.3.6.1.2) are consistent with the results of the permeability testing undertaken by DNV indicating that the presence of low-permeability clay will significantly limit infiltration and recharge potential at the site.

7.3.7 Hydrology

The site of the Proposed Development lies within the Liffey and Dublin Bay Catchment (Hydrometric Area 09) and River Liffey sub-catchment (WFD name: Liffey_SC_090, ID 09_15) (EPA, 2025). The site has been mapped by the EPA (EPA, 2025) to be within the Camac_020 WFD River Sub Basin (IE_EA_09C020250).

The surface water features within the site recorded on the EPA database (EPA, 2025) are as follows:

- The Corbally Stream (also known as the Brownsbarn Stream) (WFD Name: Camac_020; River Waterbody Code: IE_EA_09C020250) is a tributary of the Camac River. It flows along the eastern and northern boundaries of the site in a northerly direction before joining the Camac River approximately 2.1km north of the site. From there, the Camac River continues northeast and discharges into the Liffey Estuary Upper transitional waterbody (WFD Name: Liffey; Transitional Waterbody Code: IE_EA_090_0400) approximately 11.7km northeast of the site. It then flows into the

Liffey Estuary Lower (WFD Name: Liffey; Transitional Waterbody Code: IE_EA_090_0300) approximately 13.7km northeast of the site and ultimately discharges into the Dublin Bay coastal waterbody (Coastal Waterbody Code: IE_EA_090_0000).

- The Coldwater Stream (WFD Name: Camac_020; River Waterbody Code: IE_EA_09C020250) originates along the western boundary of the site, flowing northward before discharging into the Corbally Stream at the site's northern boundary.
- The Cooldown Stream (WFD Name: Camac_020; River Waterbody Code: IE_EA_09C020250) originates within the site and flows in a south-to-north direction, ultimately discharging into the Corbally Stream at the site's northern boundary. It is typically a dry ditch that bisects the site and is believed to be man-made. The stream is inactive under normal conditions and only becomes active during periods of heavy rainfall. Several french drains within the site discharge into the Cooldown Stream, though runoff and infiltration from these drains occur only in the northern third of the stream. The remainder of the channel generally remains dry.

Other surface water features within the vicinity of the site are as follows:

- The Baldonnel_Little (WFD Name: Camac_020; River Waterbody Code: IE_EA_09C020250), located approximately 0.38km west of the site, flows in a northerly direction before conveying to the Camac River approximately 1.3km north of the site.
- The Camac River (WFD Name: Camac_020; River Waterbody Code: IE_EA_09C020250), located approximately 1.37km east and 2.1km north of the site, flows in a northeastern direction before discharging into the Liffey Estuary Upper (WFD Name: Liffey; Transitional Waterbody Code: IE_EA_090_0400) approximately 11.7km northeast of the site, then into the Liffey Estuary Lower (WFD Name: Liffey; Transitional Waterbody Code: IE_EA_090_0300) approximately 13.7km northeast of the site and finally discharging into the Dublin Bay (Coastal Waterbody Code: IE_EA_090_0000) approximately 18.0km east of the site.
- The Baldonnel_Upper (WFD Name: Camac_020; River Waterbody Code: IE_EA_09C020250), located approximately 0.37km east of the site, flows in a northerly direction before conveying to the Camac River approximately 1.30km north of the site.
- The Kingswood Stream (WFD Name: Camac_030; River Waterbody Code: IE_EA_09C020310), located approximately 1.0km east of the site, flows in a northerly direction before conveying to the Camac River approximately 2.8km north of the site.
- The Fortunestown Stream (WFD Name: Camac_030; River Waterbody Code: IE_EA_09C020310), located approximately 0.99km east of the site, discharges into the Kingswood Stream approximately 1km east of the site.

The local surface waterbodies within a 2km radius of the site are presented in Figure 7-10.

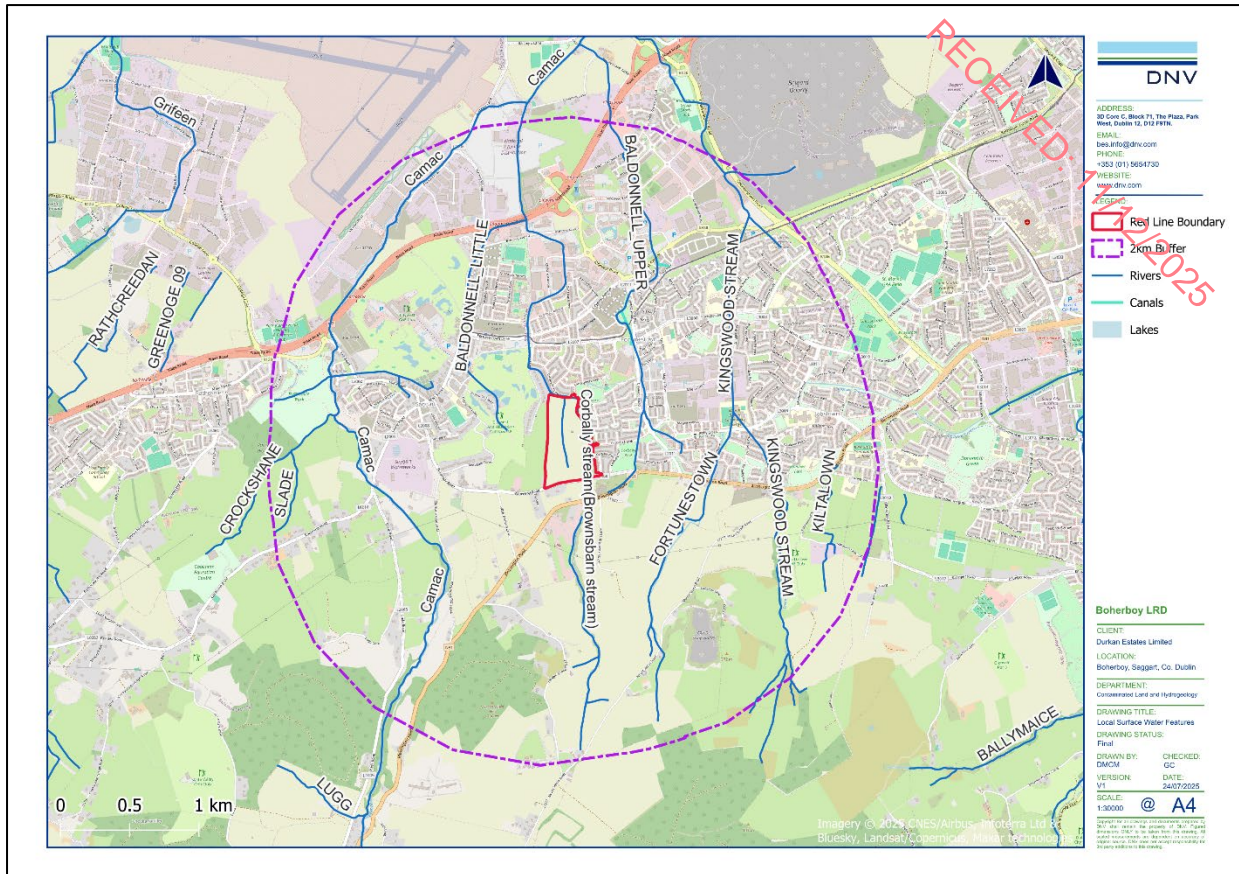


Figure 7-10. Local Surface Water Features

7.3.8 Flooding

The site-specific flood risk assessment (SSFRA) report (Kilgallen & Partners Consulting Engineers, 2025; submitted with the planning application under separate cover) assessed the potential flood risk associated with fluvial, groundwater and pluvial flooding for the site and Proposed Development.

The initial assessment concluded that the site is not at risk from pluvial or groundwater flooding. However, indicators suggested a potential risk from fluvial flooding, prompting a detailed assessment. This confirmed that the northern boundary of the site lies within Flood Risk Zones A and B. To mitigate this, the proposed development incorporates a compensatory storage basin in the northwest corner of the site. While the development will displace floodplain storage in some areas, it lowers ground levels in others, resulting in a net increase in floodplain storage and a slight reduction in flood risk to surrounding areas. Stream crossings have been designed in accordance with OPW requirements, with soffit levels at least 500mm above the 1% Annual Exceedance Probability (AEP) flood level. Two vehicular crossings meet road level constraints and have received OPW Section 50 consent. The proposed floor levels exceed the recommended minimum by 1.90m, and road levels are 1.65m above the required threshold. Additionally, open space adjacent to the Corbally stream has been elevated to maintain a minimum 750mm freeboard above the 1% AEP water level. The development has passed the Development Management Justification Test and is deemed appropriate from a flood risk perspective, with no increased risk to surrounding areas (Kilgallen & Partners Consulting Engineers, 2025).

7.3.9 Groundwater Use and Source Protection

A search of the GSI groundwater well database (GSI, 2025) was conducted to identify registered wells and groundwater sources in the surrounding area. There are no groundwater sources recorded at the site or within a 2km radius of the site (refer to Figure 7-11).

The site of the Proposed Development is located within an area serviced by mains water supply. As documented in the Drainage and Water Infrastructure Engineering Report (Roger Mullarkey & Associates, 2025), there are five (5No.) existing trunk watermains crossing the site as follows:

- A 1.2m dia. (1982 Concrete), a 27inch Ø (1938 Steel) and a 24inch (AC 1975) lie parallel to each other in the northern third of the site
- A 1.2m dia. (1983 Concrete) and 24inch Ø (1952 Cast Iron) lie parallel approximately in the middle of the site.

There are also three (3No.) existing watermains (4inch uPVC/400mmDI/600mmDI) in Boherboy Road to the south of the site.

It is noted that water supply to the Proposed Development will be from a new water connection to the 400mmDI watermain in Boherboy Road. Additionally, water supply for the 10No. "east" Corbally site will be from the existing main in Corbally Rise.

There are no Groundwater Source Protection Areas (SPAs) mapped by the GSI (GSI, 2025) within a 2km radius of the site. The closest Groundwater SPAs is the Killeel GWS located 5.2km southwest of the site.

There are no surface water drinking water source sites under Article 7 of the Water Framework Directive (EPA, 2025) within 2km of the site. The closest surface water drinking source is the River Dodder (WFD Name: DODDER_020) located approximately 4.3km southeast of the site (EPA, 2025).

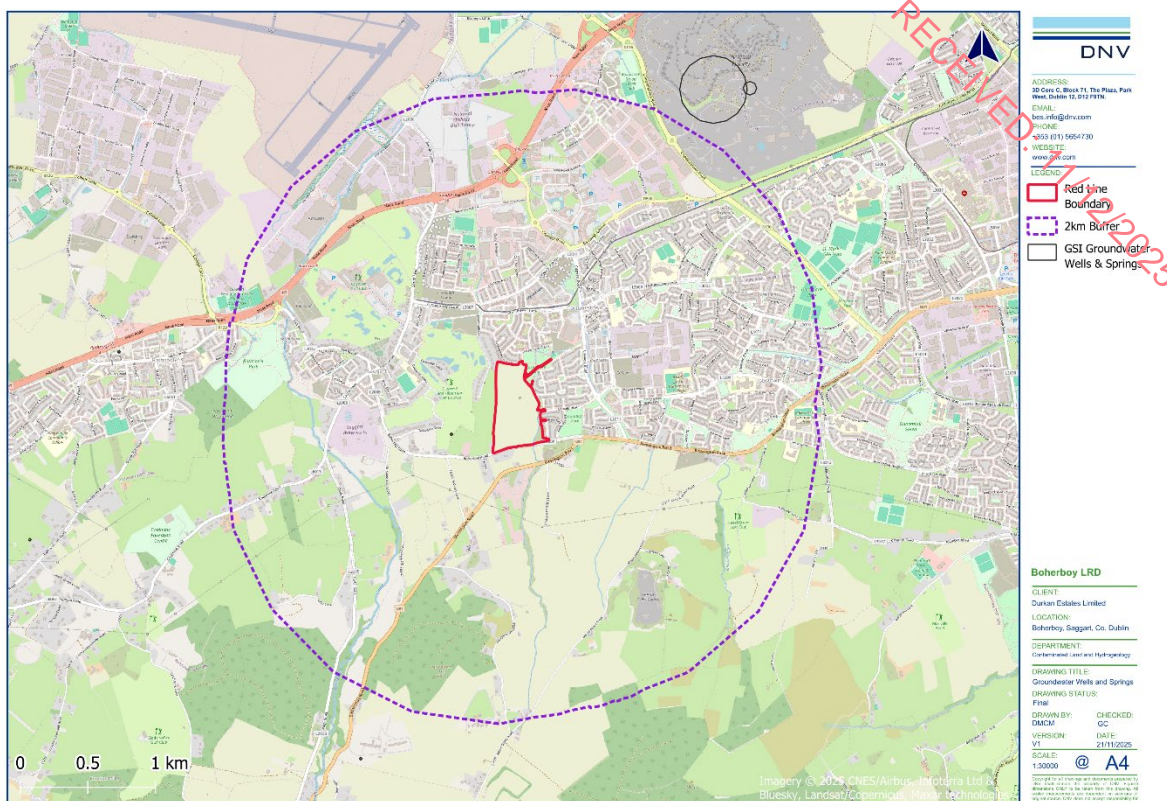


Figure 7-11. Groundwater Wells and Springs

7.3.10 Water Quality Data

7.3.10.1 EPA Surface Water Quality – Q Values

The EPA Q-Value assessment is a system of water quality rating based on the biological quality of the water body and abundance for specific invertebrate species. A summary of the Q values for the operational and historical EPA monitoring locations along the Camac River (EPA, 2025) is presented in Table 7-6.

Table 7-6. Relevant EPA Monitoring Stations and Q-Values

River I.D. & Locations	Sample Locations	Monitoring Station	Q-Value & Year
Camac River (2.92km upstream)	CAMAC - Br 0.5km d/s Brittas pond (NNE of Glenaranean)	RS09C020050	3-4 1986
Camac River (1.28 km downstream)	CAMAC - Br 0.5km d/s Brittas pond (NNE of Glenaranean)	RS09C020050	3-4 1986
Camac River (1.63km downstream)	Br 1 km SW (u/s) of Saggart	RS09C020100	3-4 2022
Camac River (1.96km downstream)	CAMAC - Br 1 km NW of Saggart (u/s STW)	RS09C020150	4-5 1991
Camac River (2.5km downstream)	Br SE of Baldonnell Ho	RS09C020250	4 2022
Camac River (4.75km downstream)	CAMAC - End of Cherrywood Avenue	RS09C020270	3 1988
Camac River (5.4km downstream)	CAMAC - Orchard Lane Just d/s Clondalkin Br	RS09C020300	3 1987

7.3.10.2 EPA Surface Water Quality – Published Regional Surface Water Quality

The EPA surface water quality monitoring database (EPA, 2025) was consulted. A summary of the most recent published EPA water quality monitoring data (EPA, 2025) for waterbodies which have a potential hydraulic connection to the site is presented in Table 7-7.

Table 7-7. EPA Surface Water Quality

River I.D. (Location)	EPA WFD Parameter Quality & Trend Analysis				
	Parameter	Period	Indicative Quality	Trend	Baseline Conc. (2023)
Camac_020 River	Ammonia-Total (as N)	Annual	High	Upwards	0.024 mg/l
	Total Oxidised Nitrogen (as N)	Annual	Good	Downwards	1.704 mg/l
	Ortho-Phosphate (as P)- unspecified	Annual	High	Downwards	0.023 mg/l
Camac_030 River	Ammonia-Total (as N)	Annual	Moderate	Upwards	0.099 mg/l
	Total Oxidised Nitrogen (as N)	Annual	Good	Downwards	1.499 mg/l
	Ortho-Phosphate (as P)- unspecified	Annual	Moderate	Upwards	0.044 mg/l
Camac_040	Ammonia-Total (as N)	Annual	Moderate	Upwards	0.161 mg/l
	Total Oxidised Nitrogen (as N)	Annual	Moderate	Downwards	1.853 mg/l
	Ortho-Phosphate (as P)- unspecified	Annual	Moderate	Downwards	0.039 mg/l
Liffey Estuary Upper	Chlorophyll	Summer	High	Downwards	1.950 mg/m ³
		Winter	High	Downwards	0.730 mg/m ³
	Dissolved Inorganic Nitrogen (as N)	Summer	Good	Downwards	0.740 mg/l
		Winter	Poor	Upwards	2.947 mg/l
	Ortho-Phosphate (as P) - unspecified	Summer	Good	Downwards	31.500 mg/l
		Winter	High	Downwards	25.500 mg/l
Liffey Estuary Lower	Chlorophyll	Winter	High	Downwards	0.445 mg/m ³
		Summer	High	Downwards	2.300 mg/m ³
	Dissolved Inorganic Nitrogen (as N)	Winter	Good	Downwards	0.433 mg/l
		Summer	High	Downwards	0.182 mg/l
	Ortho-Phosphate (as P) - unspecified	Winter	Good	Upwards	38.500 mg/l
		Summer	Good	Downwards	32.500 mg/l
Dublin Bay	Chlorophyll	Summer	High	Upwards	1.700 mg/m ³
		Winter	High	Upwards	0.330 mg/m ³
	Dissolved Inorganic Nitrogen (as N)	Summer	High	Downwards	0.030 mg/l
		Winter	High	Downwards	0.120 mg/l
	ortho-Phosphate (as P) - unspecified	Summer	High	Upwards	7.850 mg/l
		Winter	High	Upwards	17.000 mg/l

7.3.10.3 Surface Water Quality (DNV, 2025 Hydrogeological Assessment)

The analytical results (refer to Appendix B of the HRA (DNV, 2025c) included in Volume 3 Appendix 6.1 of the EIAR) for surface water samples collected upstream and downstream of the site are summarised below.

- The reported concentrations of the dissolved metals analysed (arsenic, barium, beryllium, cadmium, calcium, chromium, copper, lead, magnesium, mercury, nickel, potassium, selenium, sodium, vanadium and zinc) at both surface water locations

(SW3 and SW4) were reported as below the applicable surface water environmental quality standards (SW EQS).

- BOD Concentrations at both monitoring locations were reported below the applicable SW EQS.
- The reported concentration of orthophosphate at both monitoring locations were reported below the applicable SW EQS.
- The reported concentration of ammoniacal nitrogen (0.09mg/L) at downstream location SW4 exceeded the applicable SW EQS of 0.065mg/l. The reported concentration of ammoniacal nitrogen at upstream location SW3 was below the laboratory limit of detection and hence the applicable SW EQS.

The results are considered representative of baseline conditions at the site. The marginally elevated concentration of ammoniacal nitrogen at downstream location BH3 is considered likely attributable to agricultural land use at the site (i.e., grazing of cattle).

7.3.10.4 EPA Groundwater Quality - Published Regional Groundwater Quality

The EPA groundwater monitoring data (EPA, 2025) was reviewed and there are no groundwater quality monitoring stations within a 2km radius of the site or that are hydraulically connected to the site. However, there are recorded groundwater quality data for the groundwater body beneath the site. The groundwater quality data is presented in Table 7-8.

Table 7-8. EPA Groundwater Quality

Groundwater Body	EPA WFD Parameter Quality & Trend Analysis				
	Parameter	Period	Indicative Quality	Trend	Baseline Conc. (2021) (mg/l)
Kilcullen GWB	Ammonia-Total(As N)	Annual	Good	Upwards	0.021 mg/l
	Chloride	Annual	Good	Downwards	15.772 mg/l
	Conductivity@25°C	Annual	Good	Upwards	670.500 us/cm
	Nitrate (as NO3)	Annual	Good	Upwards	19.275 mg/l
	ortho-Phosphate (as P) - unspecified	Annual	Good	Downwards	0.022 mg/l
Dublin GWB	Ammonia-Total (as N) - Ryewater RW2-Deep	Annual	Good	Upwards	0.028 mg/l
	Ammonia-Total (as N) - Ryewater RW3-Deep	Annual	Failing to achieve good status	Upwards	0.151 mg/l
	Ammonia-Total (as N) - Ryewater RW1-Transition	Annual	Failing to achieve good status	Upwards	0.138 mg/l
	Ammonia-Total (as N) - Ryewater RW3-Shallow	Annual	Failing to achieve good status	Upwards	0.118 mg/l
	Ammonia-Total (as N) - Ryewater RW3-Subsoil	Annual	Good	Upwards	0.038 mg/l
	Ammonia-Total (as N) - Ryewater RW2-Shallow	Annual	Good	Upwards	0.024 mg/l
	Ammonia-Total (as N) - Ryewater RW1-Deep	Annual	Failing to achieve good status	Upwards	0.454 mg/l

Groundwater Body	EPA WFD Parameter Quality & Trend Analysis				
	Parameter	Period	Indicative Quality	Trend	Baseline Conc. (2021) (mg/l)
	Ammonia-Total (as N) - Ryewater RW1-Shallow	Annual	Good	Upwards	0.039 mg/l
	Ammonia-Total (as N) - Ryewater SW1	Annual	Failing to achieve good status	Downwards	0.109 mg/l
	Ammonia-Total (as N) - Ryewater RW2-Transition	Annual	Failing to achieve good status	Upwards	0.175 mg/l
	Ammonia-Total (as N) - Ryewater RW3-Transition	Annual	Failing to achieve good status	Downwards	0.234 mg/l
	Chloride - Ryewater RW2-Deep	Annual	Good	Upwards	22.160 mg/l
	Chloride - Ryewater RW3-Deep	Annual	Failing to achieve good status	Upwards	25.836 mg/l
	Chloride - Ryewater RW1-Transition	Annual	Failing to achieve good status	Upwards	88.694 mg/l
	Chloride - Ryewater RW3-Shallow	Annual	Good	Downwards	21.539 mg/l
	Chloride - Ryewater RW3-Subsoil	Annual	Failing to achieve good status	Downwards	38.428 mg/l
	Chloride - Ryewater RW2-Shallow	Annual	Failing to achieve good status	Upwards	35.933 mg/l
	Chloride - Ryewater RW1-Deep	Annual	Good	Upwards	18.600 mg/l
	Chloride - Ryewater RW1-Shallow	Annual	Failing to achieve good status	Downwards	49.708 mg/l
	Chloride - Ryewater SW1	Annual	Failing to achieve good status	Downwards	25.580 mg/l
	Chloride - Ryewater RW2-Transition	Annual	Failing to achieve good status	None	110.743 mg/l
	Chloride - Ryewater RW3-Transition	Annual	Good	Downwards	18.603 mg/l
	Conductivity @25°C - Ryewater RW2-Deep	Annual	Good	Upwards	571.567 mg/l
	Conductivity @25°C - Ryewater RW3-Deep	Annual	Good	Upwards	595.389 mg/l
	Conductivity @25°C - Ryewater RW1-Transition	Annual	Failing to achieve good status	Upwards	1024.778 mg/l
	Conductivity @25°C - Ryewater RW3-Shallow	Annual	Good	Upwards	735.250 mg/l
	Conductivity @25°C - Ryewater RW3-Subsoil	Annual	Good	Upwards	762.056 mg/l

Groundwater Body	EPA WFD Parameter Quality & Trend Analysis				
	Parameter	Period	Indicative Quality	Trend	Baseline Conc. (2021) (mg/l)
	Conductivity @25°C - Ryewater RW2-Shallow	Annual	Good	Upwards	680.267 mg/l
	Conductivity @25°C - Ryewater RW1-Deep	Annual	Good	Upwards	611.278 mg/l
	Conductivity @25°C - Ryewater RW1-Shallow	Annual	Good	Upwards	725.028 mg/l
	Conductivity @25°C - Ryewater SW1	Annual	Good	Downwards	654.933 mg/l
	Conductivity @25°C - Ryewater RW2-Transition	Annual	Failing to achieve good status	Upwards	1020.233 mg/l
	Conductivity @25°C - Ryewater RW3-Transition	Annual	Good	Upwards	653.5 mg/l
	Nitrate (as NO ₃) - Ryewater RW2-Deep	Annual	Good	Downwards	1.089 mg/l
	Nitrate (as NO ₃) - Ryewater RW3-Deep	Annual	Good	Downwards	1.452 mg/l
	Nitrate (as NO ₃) - Ryewater RW1-Transition	Annual	Good	Upwards	9.662 mg/l
	Nitrate (as NO ₃) - Ryewater RW3-Shallow	Annual	Good	Upwards	0.861 mg/l
	Nitrate (as NO ₃) - Ryewater RW3-Subsoil	Annual	Good	Downwards	1.255 mg/l
	Nitrate (as NO ₃) - Ryewater RW2-Shallow	Annual	Good	Upwards	0.923 mg/l
	Nitrate (as NO ₃) - Ryewater RW1-Deep	Annual	Good	Upwards	1.091 mg/l
	Nitrate (as NO ₃) - Ryewater RW1-Shallow	Annual	Good	Downwards	2.051 mg/l
	Nitrate (as NO ₃) - Ryewater SW1	Annual	Good	Downwards	7.599 mg/l
	Nitrate (as NO ₃) - Ryewater RW2-Transition	Annual	Good	Downwards	1.115 mg/l
	Nitrate (as NO ₃) - Ryewater RW3-Transition	Annual	Good	Downwards	1.013 mg/l
	ortho-Phosphate (as P) - unspecified - Ryewater RW2-Deep	Annual	Good	Upwards	0.010 mg/l
	ortho-Phosphate (as P) - unspecified - Ryewater RW3-Deep	Annual	Good	None	0.010 mg/l
	ortho-Phosphate (as P) - unspecified -	Annual	Good	Downwards	0.019 mg/l

Groundwater Body	EPA WFD Parameter Quality & Trend Analysis				
	Parameter	Period	Indicative Quality	Trend	Baseline Conc. (2021) (mg/l)
	Ryewater Transition RW1-				
	ortho-Phosphate (as P) – unspecified – Ryewater RW3-Shallow	Annual	Good	Downwards	0.012 mg/l
	ortho-Phosphate (as P) – unspecified – Ryewater RW3-Subsoil	Annual	Good	None	0.010 mg/l
	ortho-Phosphate (as P) – unspecified – Ryewater RW2-Shallow	Annual	Good	None	0.010 mg/l
	ortho-Phosphate (as P) – unspecified – Ryewater RW1-Deep	Annual	Failing to achieve good status	Upwards	0.044 mg/l
	ortho-Phosphate (as P) – unspecified – Ryewater RW1-Shallow	Annual	Good	Upwards	0.010 mg/l
	ortho-Phosphate (as P) – unspecified – Ryewater SW1	Annual	Failing to achieve good status	None	0.103 mg/l
	ortho-Phosphate (as P) – unspecified – Ryewater RW2-Transition	Annual	Good	Upwards	0.012 mg/l
	ortho-Phosphate (as P) – unspecified – Ryewater RW3-Transition	Annual	Good	Downwards	0.020 mg/l

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7.3.10.5 Groundwater Quality (DNV, 2025 Hydrogeological Assessment)

The analytical results (refer to Appendix B of the HRA (DNV, 2025c) included in Volume 3 Appendix 6.1 of the EIAR) for samples collected at the five newly installed groundwater monitoring wells (BH1, BH2, BH3, BH4 and BH5) are summarised below.

- The reported concentrations of the dissolved metals analysed (arsenic, barium, beryllium, cadmium, calcium, chromium, copper, lead, magnesium, mercury, nickel, potassium, selenium, sodium, vanadium and zinc) at all monitoring locations were reported as below the applicable Groundwater Target Values (GW GTV) and SW EQS at all monitoring locations.
- The reported concentrations of nitrate and nitrite at all monitoring locations were below the applicable GW GTV of 37.5mg/l and 0.375mg/l respectively. There are no limits for the SW EQS.
- Sulphate and chloride concentrations at all monitoring locations were reported below the applicable GW GTV. There is no applicable SW EQS for sulphate and chloride.
- BOD Concentrations at all monitoring locations were reported below the applicable SW EQS. There is no applicable GW GTV for BOD.

- The reported concentration of orthophosphate (0.19mg/l) and ammoniacal nitrogen (1.51mg/L) at location BH02, in the central portion of the site, exceeded the applicable GW GTV of 0.035mg/l and 0.175mg/l respectively. The reported concentrations also exceed the applicable SW EQS of 0.035mg/l and/or 0.065mg/l respectively at locations BH2, BH3 (ammoniacal nitrogen only), BH4 (ammoniacal nitrogen only) and BH5 (ammoniacal nitrogen only).
- As documented in the HRA (DNV, 2025c), the results are considered representative of baseline conditions at the site. The elevated concentrations of orthophosphate and ammoniacal nitrogen are likely attributable to agricultural land use at the site, specifically grazing of cattle.

7.3.10.6 Receiving Water Quality – Ringsend WWTP (Wastewater Treatment Plant)

Foul water from the site will discharge via the Ringsend WWTP to the Liffey Estuary Lower transitional waterbody. The WWTP is operated under relevant statutory approvals. The most recent available Annual Environmental Report (AER) for the Ringsend WWTP is 2023 (UE, 2024). The AER identified that the final effluent was non-compliant with the Emission Limit Values (ELV) specified in the discharge license (D0034-01). The parameters falling to meet their ELV's included biochemical oxygen demand (BOD), chemical oxygen demand (COD), total suspended solids (TSS), total phosphorus (as P), total nitrogen and E. coli. It was reported that the non-compliances for all parameters were as a result of overloading with the exception of total phosphorus which was due to no phosphorus removal onsite.

While exceedances of the ELV's is noted, the following is also noted under the significance of results section of the AER:

- *'The primary discharge from the wastewater treatment plant does have an observable negative impact on the water quality in the near field of the discharge and in the Liffey and Tolka Estuaries.*
- *The primary discharge from the WWTP does not have an observable negative impact on the Water Framework Directive status in the Liffey Estuary.*
- *Other potential causes of deterioration in water quality relevant to this area are upstream riverine pollutants, combined sewer overflows, exfiltration from sewers and misconnections to surface water sewers in the large urban agglomeration'*

7.3.11 Water Framework Directive (WFD)

The WFD status for river, lake, groundwater, transitional and/or coastal water bodies that have a potential hydraulic connection to the site as recorded by the EPA (EPA, 2025) in accordance with European Communities (Water Policy) Regulations 2003 (SI no. 722/2003) are provided in Table 7-9 and shown in Figure 7-12.

Table 7-9. Water Framework Directive Status

Waterbody Name	Waterbody Code	EU	Location from Site	Distance from Site (km)	WFD Status (2019-2024)	WFD Risk	Hydraulic Connection to the Site
Surface Water Bodies							
Camac_020	IE_EA_09C020250		Closest location along the west/east/ and north	Onsite	Good	At Risk	Yes, via groundwater and surface water drainage from the Proposed Development

Waterbody Name	Waterbody Code	EU	Location from Site	Distance from Site (km)	WFD Status (2019-2024)	WFD Risk	Hydraulic Connection to the Site
			boundaries and traversing the middle of the site				
Camac_030	IE_EA_09C020310		East	1.1km	Poor	At Risk	Yes, downstream of adjacent surface water bodies (via the Camac_020 River).
Camac_040	IE_EA_09C020500		Northeast	6.48km	Poor	At Risk	Yes, downstream of adjacent surface water bodies (via the Camac_020 and Camac_030 River).
Transitional Water Bodies							
Liffey Estuary Upper	IE_EA_090_0400		Northeast	11.76km	Moderate	Under Review	Yes, downstream of adjacent surface water bodies (via the Camac_020, Camac_030 and Camac_040 Rivers).
Liffey Estuary Lower	IE_EA_090_0300		Northeast	14.16km	Moderate	At Risk	Yes, downstream of adjacent surface water bodies (via the Liffey Estuary Upper).
Tolka Estuary	IE_EA_090_0200		Northeast	18.19km	Poor	At Risk	Weak Potential Hydraulic connection via Liffey Estuary Lower (upstream of the Liffey Estuary Lower)
Coastal Water Bodies							
Dublin Bay	IE_EA_090_0000		Northeast	15.81km	Good	Not at risk	Yes, downstream of adjacent surface water bodies.
Groundwater Bodies							
Kilcullen	IE_EA_G_003		Underlying	0.0	Good	At risk	Yes, underlying the majority of the site
Dublin	IE_EA_G_008		Underlying	0.0	Good	Review	Yes, underlying the most northern part of the site

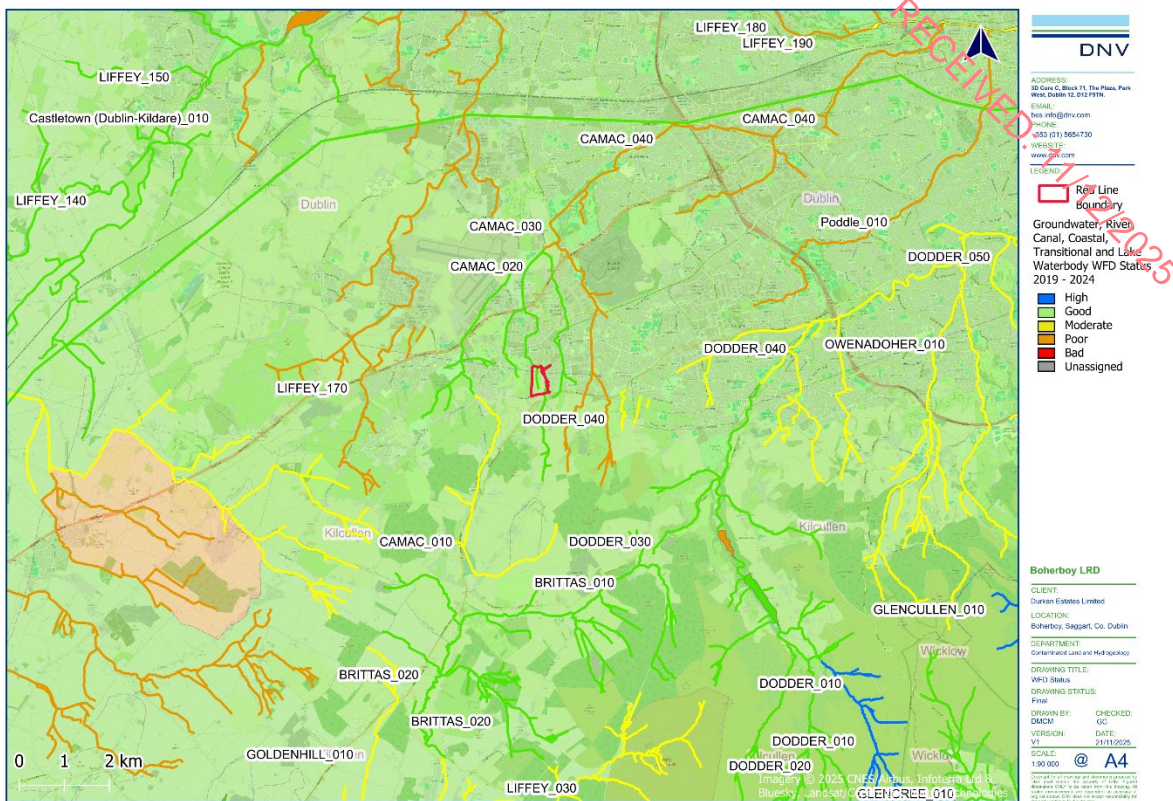


Figure 7-12. Water Framework Directive Status

7.3.11.1 Designated and Protected Sites

The Habitats Directive (92/43/EEC) seeks to conserve natural habitats and wild fauna and flora by the designation of Special Areas of Conservation (SACs) and the Birds Directive (2009/147/EC) seeks to protect birds of special importance by the designation of Special Protection Areas (SPAs). SACs and SPAs are collectively known as Natura 2000 or European sites (referred to hereafter as Natura 2000 sites).

National Heritage Areas (NHAs) are designations under the Wildlife Acts to protect habitats, species, or geology of national importance. The boundaries of many of the NHAs in Ireland overlap with SAC and/or SPA Sites. Although many NHA designations are not yet fully in force under this legislation (referred to as 'proposed NHAs' or pNHAs), they are offered protection in the meantime under planning policy which normally requires that planning authorities give recognition to their ecological value.

There are six (6No.) Natura 2000 sites that are identified with a potential hydraulic connection to the site and Proposed Development. There are also two (2No.) pNHAs identified with a potential hydraulic connection to the site and Proposed Development. The Natura 2000 sites and other protected and designated sites or areas with a potential hydraulic connection to the site are summarised in Table 7-10 and Figure 7-13. It is noted that the Kilcullen GWB and Dublin GWB beneath the site is considered to have short groundwater flow paths (be in the order of a couple of hundred metres), with groundwater discharging to the closest surface water feature (i.e., the Corbally Stream, the Cooldown Stream and the Coldwater Stream). Therefore, there is no perceived direct pathway from groundwater beneath the site to the identified downgradient Natura 2000 sites and other protected and designated sites.

Table 7-10. Designated and Protected Sites

Designated Site	Site Code	Distance from Site (km)	Direction	Potential Risk
Special Area of Conservation (SAC)				
North Dublin Bay SAC	000206	18.75	Northeast	Yes, hydrological connection via Corbally Stream and downstream waterbodies. There is also a connection via discharge from Ringsend WWTP.
South Dublin Bay SAC	000210	15.66	East	
Rockabill to Dalkey Island SAC	003000	22.59	Northeast	
Special Protection Area (SPA)				
North-West Irish Sea SPA	004236	20.32	Northeast	Yes, hydrological connection via River Dodder and downstream waterbodies. There is also a connection via discharge from Ringsend WWTP.
North Bull Island SPA	004006	19.70	Northeast	
South Dublin Bay and River Tolka Estuary SPA	004024	15.32	East	
Proposed Natural Heritage Area (pNHA)				
Grand Canal pNHA	002104	5.55	North	No identified hydraulic connection. The Camac River is culverted below the Grand Canal.
South Dublin Bay pNHA	000210	15.66	East	Yes, hydrological connection via River Dodder and downstream waterbodies. There is also a connection via discharge from Ringsend WWTP.
North Dublin Bay pNHA	000206	18.75	Northeast	
Note: '**' = Distance is measured as closest point to the Site				

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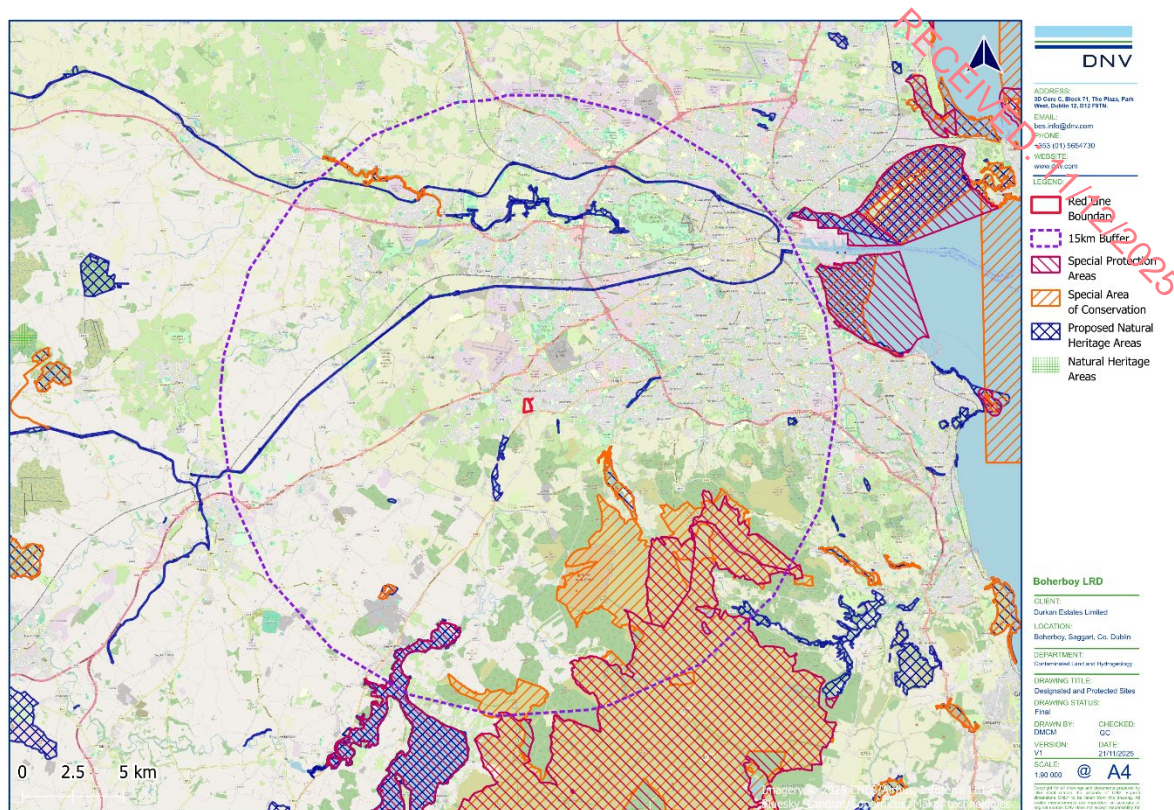


Figure 7-13. Protected and Designated Areas

7.3.11.2 Drinking Water

The river drinking water protected areas (DWPA) are represented by the full extent of the Water Framework Directive (WFD) river waterbodies from which there is a known qualifying abstraction of water for human consumption as defined under Article 7 of the WFD.

There are no surface water drinking water sources, under Article 7 of the Water Framework Directive, identified by the EPA (EPA, 2025) within a 2km radius or hydraulically downstream of the site (refer to section 4.6). However, the groundwater bodies beneath the site, the Kilcullen GWB (IE_EA_G_003) and the Dublin GWB (IE_EA_G_008) are classified under Article 7 Abstraction for Drinking Water.

7.3.11.3 Shellfish Areas

Although the Shellfish Waters Directive (SWD) has been repealed, areas used for the production of shellfish that were designated under the SWD, are protected under the WFD as 'areas designated for the protection of economically significant aquatic species'.

The requirement from a WFD perspective is to ensure that water quality does not impact on the quality of shellfish produced for human consumption. In Ireland, 64 areas have been designated as shellfish waters (S.I. No. 268 of 2006, S.I. No. 55 of 2009, S.I. 464 of 2009).

The closest designated Shellfish Area location is Malahide (IE_EA_020_0000) located approximately 26.7km northeast of the site.

7.3.11.4 Nutrient Sensitive Areas

EU member states are required under the Urban Wastewater Treatment Directive (91/271/EEC) to identify nutrient-sensitive areas. These have been defined as “natural freshwater lakes, other freshwater bodies, estuaries and coastal waters which are found to be eutrophic or which in the near future may become eutrophic if protective action is not taken”.

The closest designated nutrient-sensitive area (estuaries and lakes) is the Liffey Estuary (IE_EA_090_0300-Urban Wastewater Treatment Directive Sensitive Area) located approximately 10.5km northeast of the site at its closest point. In addition, the closest nutrient-sensitive area (rivers) is the Liffey (Urban Wastewater Treatment Directive Sensitive Area) located approximately 9.4km northeast of the site at its closest point.

7.3.11.5 Bathing Waters

Bathing waters are designated under Regulation 5 of Directive 2006/7/EC. Designated Bathing Waters exist under S.I. No. 79/2008 and S.I. No. 351/2011 Bathing Water Quality (Amendment) Regulations 2011. EC Bathing Water Profiles - Best Practice and Guidance 2009.

The closest designated Bathing Water location is the Sandymount Strand (IEEABWC090_0000_0300) located approximately 15.6km northeast of the site.

7.4 Importance of Receiving Environment

The receiving waterbodies have been assigned a WFD Status of ‘good’ for both groundwater, and the closest surface waterbody hydraulically connected to the site of the Proposed Development (i.e., the Camac_020).

The bedrock aquifer beneath the majority of the site is classified as Poor Aquifer which is generally unproductive except for local zones (PI). It is noted that the bedrock aquifer beneath the northern portion of the site is classified as a Locally Important Aquifer (LI), which is moderately productive only in local zones.

The site is not mapped within a groundwater SPA or currently located in the vicinity of a significant water supply source.

Overall, taking account of the receiving hydrological environment, in accordance with the criteria set out in Table 7-1, the site is considered to be of ‘low’ importance.

7.5 Characteristics of the Proposed Development

A full description of the Proposed Development is outlined in Chapter 2 of this EIAR.

The following components are of particular relevance with respect to water during the construction phase and operational phase of the Proposed Development.

7.5.1 Construction Phase

The construction phase of the Proposed Development will include:

- Foundation design will be finalised at detailed design stage. However, it is anticipated that foundation design will consist of traditional strip footings on the underlying firm to stiff cohesive deposits, or the medium dense granular deposits at depths ranging from

1.0 meters below ground level (mbGL) to 2.0mbGL. There may also be a requirement for piling.

- The stripping of existing topsoil at the site.
- The excavation of approximately 184,422m³ of soil and subsoil for the construction of building foundations, surface water and foul water drainage infrastructure.
- Based on the findings of site investigations carried out across the site (GII, 2014 and DNV 2025c), it is anticipated that there will be no requirement for the excavation of bedrock during the construction phase of the Proposed Development.
- Where possible, it is intended to reuse suitable excavated soil and subsoil for landscaping and engineering use (total fill requirement of approximately 249,228m³). However, it is anticipated that approximately 103,689m³ of surplus materials will require removal offsite in accordance with all statutory legislation.
- Temporary stockpiling of excavated material pending re-use onsite.
- It is anticipated that local dewatering will likely be required during the construction of building foundations and utility infrastructure based on recorded groundwater levels with a potential temporary localised change in groundwater levels.
- The importation of approximately 164,654m³ of aggregate fill materials will also be required for the construction of the Proposed Development (e.g., granular material beneath road pavement, under floor slabs and for drainage and utility bedding / surrounds etc.).
- The construction of 5No.crossings of the Corbally Stream connecting the Proposed Development with the adjoining Corbally and Carrigmore housing estates and the public Carrigmore Park.
- Construction of new foul and mains water connections in accordance with UE Code of Practice for Wastewater Infrastructure (IW-CDS-5030-03), UE's Code of Practice for Water Infrastructure (IW-CDS-5020-03), Building Regulations 2010 and Technical Guidance Documents, Section H.
- Construction of new surface water and groundwater drainage designed in accordance with the principles and objectives of Sustainable Drainage Systems (SuDS) and the Greater Dublin Sustainable Drainage System (GDSDS) and the requirements of SDCC.

7.5.2 Operational Phase

7.5.2.1 Surface Water Drainage

As documented in the Drainage and Water Infrastructure Engineering Report (Roger Mullarkey & Associates, 2025), surface water from the Proposed Development will be managed in accordance with the principles and objectives of Sustainable Drainage Systems (SuDS), the Greater Dublin Strategic Drainage Study (GDSDS), Greater Dublin Regional Code of Practice and South Dublin County Council to treat and attenuate water prior to discharging to the receiving Corbally Stream, Coldwater Stream, and Cooldown Stream.

The surface water drainage is divided into 9No. separate catchment areas, each with its own SuDS interception, treatment, attenuation and storage. There is a potential c.1Ha future school site reserved on the lands that does not form part of this application but has been allowed for in the drainage calculations.

Each of the surface water outfall locations are to include a wing-wall outfall detail, and a non-return valve is to be included at each outfall location to prevent backflow in the event of a swamped outfall condition.

The surface water drainage for the Proposed Development has been designed to cater for surface water runoff from all hard surfaces including roadways, car parks, and roofs, and will adequately accommodate the 2-year, 30 year and 100 year return events over multiple time periods ranging between 15 minutes to 7 day durations. An allowance of an additional 20% for climate change has been applied as has an allowance for 10% urban creep to the rear gardens of the houses.

The following attenuation and SuDS measures will be incorporated into the Proposed Development:

- Rain Garden planters to the rear down pipes of the houses
- Permeable paving to all private parking areas draining roads and front roofs of the houses
- Filter Swales adjacent to roadways where feasible
- Tree pits where practically feasible
- Use of the existing centrally located watercourse and hedgerow as a conveyance swale
- Use of 9No. open detention basins and 1No. below ground system
- Bio-Retention areas draining roads/paths and roofs
- Silt-trap/catchpit manholes
- Hydrobrakes limiting flow to the total Qbar greenfield rate
- Petrol interceptors upstream of all outfall points
- Stone lined voided arch retention storage devices

In addition, land drains will be installed across the site to intercept and convey shallow groundwater towards the receiving Corbally Stream, Coldwater Stream, and Cooldown Stream and the proposed translocated wetland (refer to Roger Mullarkey & Associates, 2025 Drainage Layout submitted as part of the planning application under separate cover) to ensure that the shallow groundwater flow regime is maintained across the site and to support the establishment and long-term viability of the translocated wetland habitat (further details provided in the method statement prepared by Gannon & Associates Landscape Architecture (Gannon & Associates Landscape Architecture, 2025. Marsh Translocation Report; submitted with the planning application under separate cover) and submitted as part of the planning application under separate cover).

The proposed surface water and groundwater catchment summary is presented in Figure 7-14.

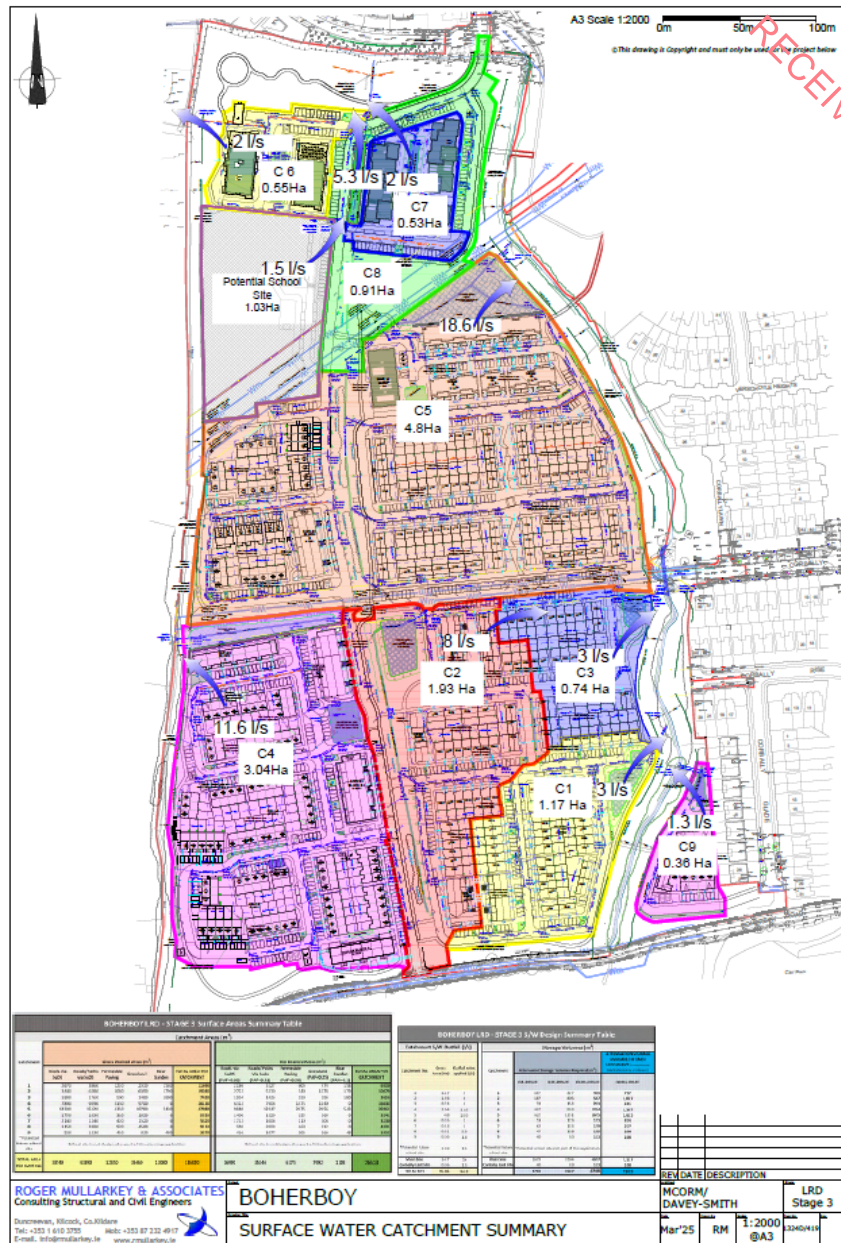


Figure 7-14. Surface Water and Groundwater Catchment Summary (Roger Mullarkey & Associates, 2025)

7.5.2.2 Foul Drainage

As documented in the Drainage and Water Infrastructure Engineering Report (Roger Mullarkey & Associates, 2025), foul water from the Proposed Development will be discharged as follows:

- Approximately 75% of the foul water drainage system outfalls by gravity flow into the existing Uisce Éireann (UE) infrastructure located to the east of the site at Verschoyle Green.
- Due to the sloping topography of the subject lands, it is not feasible to drain the apartments on the northern c.25% of the site or potential future school site by gravity. Therefore, a foul water pumping station is proposed
- as part of this application to drain the above blocks from lower NE corner of the site into the gravity sewer to be constructed connecting into Verschoyle Green.

- Foul drainage for the 10No. “east” Corbally site is to connect to the existing foul drainage in Corbally Rise.

The wastewater drainage system's pipework is designed for a design flow of 9.45l/s for residential, 3.66l/s for commercial (Creche and Possible School Site) following UE's Code of Practice for Wastewater Infrastructure (IW-CDS-5030-03) and standard details.

The proposed foul water drainage layout is presented in the Drainage and Water Infrastructure Engineering Report (Roger Mullarkey & Associates, 2025) submitted with the LRD planning application under separate cover.

The UE Confirmation of Feasibility (CoF) letter dated the 21st of January 2025 (UE COF Reference: CDS24005491) states that the proposed foul water connection is feasible subject to upgrades as follows:

- *“Approximately 135m network extension, via private lands, is required from the existing 225m gravity sewer on Verschoyle Green Road to the Development site. Please be advised that at a connection application stage you have to provide evidence of consent of the Third Party Landowners.*
- *Proposed wastewater rising main crossing the existing water pipes must be in accordance with Uisce Éireann Code of Practice and Standard Details (separation distances, crossing under the mains). The details must be approved by Uisce Éireann Diversion Team.*
- *Approximately 154m of 225mm sewer upgrade to a 450mm pipe is required. The sewer section is downstream of the Development site*
- *The Developer will be required to fund the above network extension and upgrade works. The fee will be calculated at a connection application stage.”*

The Applicant will fund all works in agreement and to the satisfaction of UE.

Construction of new foul drainage connections and the proposed foul pumping station will be in accordance with UE's Code of Practice for Wastewater Infrastructure (IW-CDS-5030-03).

Foul water from the Proposed development will be treated in the Ringsend Wastewater Treatment Plant (WWTP) (Discharge Licence No. D0034-02) before ultimately discharging to the Liffey Estuary Lower transitional waterbody (EU Code: IE_EA_090_0300).

7.5.2.3 Water Supply

As documented in the Drainage and Water Infrastructure Engineering Report (Roger Mullarkey & Associates, 2025; submitted with the planning application under separate cover), there are five (5No.) existing trunk watermains crossing the site as follows:

- A 1.2m Ø (1982 Concrete), a 27inch Ø (1938 Steel) and a 24inch (AC 1975) lie parallel to each other in the northern third of the site
- A 1.2m Ø (1983 Concrete) and 24inch Ø (1952 Cast Iron) lie parallel approximately in the middle of the site.

These trunk watermains are in the control of Uisce Éireann. The set-back requirements from these mains are in accordance with the Uisce Éireann Code of Practice for Water Infrastructure 2020 document and extensive discussions were held with Uisce Éireann relating to development in proximity to same.

There are three (3No.) existing watermains (4inch uPVC/400mmDI/600mmDI) in Boherboy Road to the south of the site.

As documented in the Drainage and Water Infrastructure Engineering Report (Roger Mullarkey & Associates, 2025), water supply to the Proposed Development will be from a new water connection to the 400mmDI watermain in Boherboy Road. It is noted that water supply for the 10No. "east" Corbally site will be from the existing main in Corbally Rise.

The UE Confirmation of Feasibility (CoF) letter dated the 21st of January 2025 (UE COF Reference: CDS24005491) states that the proposed water supply connection is feasible without infrastructure upgrade from UE.

Construction of new water supply connection will be in accordance with UE's Code of Practice for Water Infrastructure (IW-CDS-5020-03).

7.6 Potential Impact of the Proposed Development

The procedure for determination of potential effects on the receiving hydrological and hydrogeological environment is to identify potential receptors within the site boundary and surrounding environment and use the information gathered during the desk study, the site walkover and information obtained from direct and indirect site investigations to assess the degree to which these receptors will be effected in the absence of mitigation.

The potential effects associated with the construction phase and operational phase of the Proposed Development are summarised below.

7.6.1 Construction Phase

7.6.1.1 Hydrological and Hydrogeological Flow Regime

During the construction phase there will be no direct discharges to or abstractions from surface water or groundwater at the Proposed Development.

There will be no abstraction of water for use during construction works (i.e. dust suppression, welfare facilities). Water supply will be from mains supply in accordance with a connection agreement from UE and therefore there will be no impact on water resources

Based on the findings of the site investigation undertaken at the site (DNV, 2025c included in Volume 3 Appendix 6.1 of the EIAR), there may be a requirement for management (e.g., localised dewatering or sump pumping) of surface water (rainwater) and shallow groundwater (recorded at levels ranging between ground level (emergence at surface within the marshland) and 4.24mbGL), on a temporary basis where encountered during groundworks. Appropriate construction measures to enable working in the dry during excavations, and methods to minimise the volume of dewatering water generated that will require management will be considered in the detailed design and the contractor's construction methods. Where water must be pumped from the excavations, it is considered that there will be a temporary drawdown of local groundwater levels during the dewatering operations. The dewatering strategy will ensure the expected localised temporary adverse effects on groundwater levels will be maintained within the work area onsite and not extend offsite. Therefore, it is considered that there will be a 'negative', 'slight' and 'temporary' effect on the groundwater levels and flow regime. The overall effect is considered non-significant in the context of the EIA Directive.

Measures will be taken to minimise disruption to the flow during any local diversion of surface water (e.g., the Coldwater Stream) required to facilitate construction of the proposed overflow

to the translocated marshland area. This will include temporary diversion of water flow during construction to prevent flooding and maintain continuous flow, and the use of silt fences and sediment control measures to prevent sedimentation in the watercourse. The impact on the hydrological regime is expected to be 'neutral', 'slight' to 'moderate', and 'temporary' given the interventions will cause short-term changes in flow patterns before returning to baseline conditions with no residual impact. The overall effect is considered non-significant in the context of the EIA Directive.

7.6.1.2 Water Quality

Sources of contamination that could impact on water quality arising from the construction of the Proposed Development include:

- Storage and use of fuels, oils and chemicals used during construction which in the event of an accidental release could infiltrate to the underlying groundwater or migrate via surface water runoff to offsite water bodies.
- Use of concrete and cementitious materials or other potentially hazardous materials during construction in particular for below ground structures and foundations where shallow groundwater may be encountered.
- Runoff with entrained sediment or other contaminants from stockpiled soils onsite to surface water drainage.
- Sediment or contaminants entrained in surface water and groundwater encountered during the dewatering of excavations.
- Release of sediment during in-stream and near stream works required to facilitate construction of the proposed headwalls, overflow to the translocated marshland area and pedestrian / vehicular bridge crossings.
- Accidental release of wash-water or foul water from facilities at the site (e.g., wheel wash and temporary welfare facilities).
- Release of foul water from existing foul water drainage during connection to live sewers.

The potential pathway and pollutant linkages for the construction phase are identified as:

- Infiltration of contaminants to the substrate and bedrock aquifer via potential conduits introduced through groundworks.
- Overland flow during rainfall events entering the receiving waterbodies (i.e., Corbally, Coldwater, and Cooldown Streams).
- Infiltration through subsoils during excavations where the groundwater vulnerability is increased (i.e., the thickness of low permeability materials is reduced thus there is a more direct pathway for surface contaminants to underlying bedrock aquifer).
- Lateral migration within the underlying aquifer.
- Discharge of water (groundwater / surface water runoff) to sewer, watercourses or groundwater in accordance with all statutory requirements and obligations. It is noted that unauthorised discharge of water during the construction phase of the Proposed Development will not be permitted.
- Disturbance of the stream bed and increased suspended solids content of the water downstream of the works area during instream and near stream works.

In the absence of appropriate mitigation measures during the construction phase of the Proposed Development there could be an effect on the receiving water environment including the following receptors:

- Underlying Poor Aquifer (PI) which is part of the Kilcullen GWB and Locally Important Aquifer (LI) in the northern portion of the site which is part of the Dublin GWB.
- Downstream receiving waterbodies (i.e., Corbally, Coldwater, and Cooldown Streams).
- There are six (6No.) Natura 2000 sites that are identified with a potential hydraulic connection to the site and Proposed Development. There are also two (2No.) pNHAs identified with a potential hydraulic connection to the site and Proposed Development. The designated and protected sites are assessed and described in further detail in Chapter 5 of the EIAR

Excavation

Potential for infiltration of contaminants to groundwater from surface is limited due to the nature of the bedrock aquifers. During bulk excavations for the construction of building foundations and utility infrastructure in a worst-case unmitigated scenario there is a risk to the underlying bedrock aquifer due to any accidental release of fuels or other contaminants to exposed granular subsoils or bedrock creating a direct pathway to the underlying aquifer. The groundwater within the Kilcullen GWB and / or Dublin GWB will be locally impacted and taking account of the limited attenuation within the aquifer. In a worst case, un-mitigated scenario there is a 'negative', 'significant' and 'long-term' impact to the underlying aquifer depending on the nature of the incident. It is noted that this impact is considered significant in the context of the EIA Directive due to the potential for long-term degradation of groundwater quality in the absence of mitigation.

Local groundwater flow across the site is interpreted to occur predominantly toward the northwest and northeast, discharging into the Corbally Stream (also referred to as the Brownsbarn Stream), which borders the eastern and northern boundaries of the site. The Cooldown Stream and Coldwater Stream are also considered to be hydraulically connected to the underlying groundwater system. In a worst case, un-mitigated scenario there is also an indirect risk via lateral migration in groundwater or overland flow to receiving surface waterbodies (i.e., Corbally, Coldwater, and Cooldown Streams) and locally within the downstream Camac River. In a worst case, un-mitigated scenario there is a 'negative', 'moderate' to 'significant' and 'long-term' impact to the underlying aquifer depending on the nature of the incident. It is noted that this impact is considered significant in the context of the EIA Directive due to the potential for widespread and lasting effects on surface water quality in the absence of mitigation.

Dewatering of Groundwater and Surface Water Runoff

The appointed contractor will ensure that any run-off from the site or any areas of exposed soil will be managed as required with temporary pumping. Where dewatering of excavations is required or where water must be pumped from the excavations, water will be discharged by the contractor, following appropriate treatment (e.g., settlement and / or hydrocarbon interceptor), to sewer, watercourses or groundwater in accordance with the necessary discharge licences issued by UE under Section 16 of the Local Government (Water Pollution) Acts and Regulations for any water discharges to sewer or from Wexford County Council

under Section 4 of the Local Government (Water Pollution) Act 1977, as amended in 1990 for discharges to surface water / groundwater. There will be no unauthorised discharge of water (groundwater / surface water runoff) to sewer, watercourses or groundwater during the construction phase of the Proposed Development. Therefore, the potential impacts will have been adequately assessed and mitigated as part of the statutory consent and there will be 'neutral', 'imperceptible' and 'temporary' impact on the receiving water environment and is considered non-significant in the context of the EIA Directive

In-stream and Near Stream Works

The Proposed Development will include instream and near stream works for the construction of the proposed headwalls to receiving waterbodies (i.e., Corbally, Coldwater, And Cooldown Streams), overflow to the Translocated Marshland Area and bridge crossings to facilitate vehicular, pedestrian and cyclist connections to adjoining developments at Corbally Heath and Corbally Glade to the east and Carrigmore Green to the north, and pedestrian/cyclist access into Carrigmore Park to the east. There is the potential for some disturbance of the stream bed and increased suspended solids content of the water downstream of the works area. This may result in a 'negative', 'moderate', 'short-term' impact on the receiving surface waterbodies (i.e., Corbally, Coldwater, and Cooldown Streams) and locally within the downstream Camac River.

Surface Water Runoff

Recharge within the Kilcullen Groundwater Body (GWB) and the Dublin GWB is expected to occur predominantly via diffuse infiltration, with rainfall percolating through the overlying subsoils. However, a significant portion of this potential recharge is likely to be rejected, due to the low storativity and low permeability of the underlying bedrock aquifers. Therefore, during rainfall events surface water runoff at the site will drain via overland flow to the receiving Corbally, Coldwater, and Cooldown Streams. During the construction phase of the Proposed Development, there is a potential for release of suspended sediments entrained in surface runoff from groundworks or indirectly tracked on vehicles / machinery entering the receiving waterbodies. There is also a potential risk of runoff with contaminants migrating offsite via existing drainage along public roads. This may result in a 'negative' 'slight to moderate' and 'short-term' impact on the quality of the receiving surface waterbodies. It is noted that this impact is considered non-significant in the context of the EIA Directive, due to its limited spatial extent, short duration, and the implementation of standard construction mitigation measures detailed in Section 7.7.1.

Piling

Piling during the construction phase of the Proposed Development, may potentially create pathways for contaminants such as grout or other materials to enter underlying groundwater. In the event of such scenarios, it is considered that this could result in 'negative', 'moderate' to 'significant' and 'medium-term' impact on a local area of the underlying aquifer environment depending on the nature of the incident. This impact is considered potentially significant in the context of the EIA Directive, however, appropriate controls will be in place to prevent this unlikely scenario.

Removal of Surplus Materials and Waste

All surplus materials and waste that will require removal offsite will be managed in accordance with all statutory obligations including where appropriate re-use as by-product in accordance

with Article 27 of the European Communities (Waste Directive) Regulations 2011 (SI No. 126 of 2011) as amended (referred to hereafter as Article 27). In the unlikely event that surplus soil or other waste materials are directed to an unauthorised location there is potential to impact on the receiving hydrogeology at that location. In the event of such a scenario it is considered that this could result in a 'negative', 'slight to moderate' and 'medium-term' impact on the hydrogeology at any receiving unauthorised locations. This impact is considered potentially significant in the context of the EIA Directive, however, appropriate controls will be in place to prevent this unlikely scenario.

Concrete Works

There is a potential risk associated with the cementitious materials used during the construction of deeper infrastructure where groundwater may be encountered that could result in a 'negative', 'moderate' to 'significant' and 'medium-term' impact on the underlying groundwater quality beneath the site. In the absence of mitigation and considering the potential for adverse effects on the underlying groundwater body, this impact is considered significant in the context of the EIA Directive.

Welfare

Foul water discharge from the temporary welfare units at the site during the construction phase will be either tankered offsite in accordance with waste management legislation or discharged under temporary consent to the UE mains foul network for treatment at Ringsend WWTP subject to agreement with UE. It is considered that any impact on the relating to waste water during the construction phase will be 'neutral', 'imperceptible' and 'temporary' and is considered non-significant in the context of the EIA Directive.

7.6.2 Operational Phase

The assessment of the potential effects on the receiving environment during the operational phase of the Proposed Development will take account of the embedded design avoidance measures (i.e., SuDS design,) to manage the potential for effects to the receiving water environment.

7.6.2.1 Hydrological and Hydrogeological Flow Regime

The Proposed Development will result in an increase of hardstanding on the site.

Recharge potential across the site is limited due to the low storativity and low permeability of the underlying bedrock aquifers. Furthermore, the results of site investigations (GII, 2014 and DNV, 2025c) indicate that the presence of low-permeability clay will significantly limit infiltration and recharge potential at the site. The proposed SuDS include unlined elements allowing for infiltration to ground (though infiltration capacity is limited). This combined with the limited recharge potential across the site means that there will be little to no change to the overall recharge potential to the aquifer. Taking account of the baseline hydrogeological setting and nature of the Proposed Development there will be a 'negative', 'imperceptible' and 'permanent' effect on the hydrogeological flow regime within a very localised zone of the aquifer and is considered non-significant in the context of the EIA Directive.

As documented in the HRA (DNV, 2025c; refer to Volume 3 Appendix 6.1 of the EIAR) the proposed building foundations and attenuation tank have the potential to impede local groundwater flow and movement through the site with potential for groundwater mounding upgradient of structures. Standard design and construction measures that include

incorporating groundwater drainage around impermeable subsurface structures (i.e., building foundations, attenuation tanks and temporary barriers during construction) will minimise adverse effects of groundwater mounding at the upgradient side of the structures and potential buoyancy issues. The proposed drainage which to intercept and locally convey groundwater through the site (refer to the drainage layout drawings presented in the Drainage and Water Infrastructure Engineering Report (Roger Mullarkey & Associates, 2025) submitted under separate cover as part of the planning application) will also minimise the potential adverse effects of groundwater on subsurface structures. Therefore, it is considered that there will be a 'negative', 'imperceptible' and 'permanent' effect on the hydrogeological flow regime within a very localised zone of the aquifer and is considered non-significant in the context of the EIA Directive.

As documented in the HRA (DNV, 2025c; refer to Volume 3 Appendix 6.1 of the EIAR), an overflow structure will be constructed from the Coldwater Stream, located centrally within the site, to provide a sustained water supply to the translocated marshland. Water from the marshland will subsequently discharge to the Corbally Stream via both overflow and infiltration to ground, ensuring no net change to the site's overall hydrological regime. Therefore, it is considered that there will be a 'neutral', 'imperceptible' and 'permanent' effect on the hydrological flow regime within a very localised zone of the aquifer. This effect is considered non-significant in the context of the EIA Directive.

7.6.2.2 Water Quality

During the operational phase, there is limited potential for discharge of contaminated runoff to receiving water courses. Surface runoff from roofs and paved areas will be managed and treated in accordance with SUDS and pass through petrol interceptor and attenuation tanks prior to discharging to local surface water drainage network.

There will be no requirement for bulk storage of petroleum hydrocarbon-based fuels during the operational phase of the Proposed Development. Further details are provided in Chapter 13 of this EIAR.

The design of the Proposed Development, including the implementation of the SuDS, aligns with the objectives of the Water Framework Directive (2000/60/EC). The measures incorporated in the SuDS design will be effective in the treatment and removal of any contaminants entrained in surface water runoff. The effectiveness of these SuDS measures is documented in the TII guidance (TII,2014) and the SuDS Manual (C753). The Proposed Development also includes petrol interceptors prior to discharge from the site that will be effective in the removal of hydrocarbons that may enter the drainage system in particular in the event of a worst-case scenario spill incident (e.g. collision on the roadway resulting in the loss of fuel from a vehicle).

Accordingly, any potential effect on receiving surface water and groundwater beneath the site of the Proposed Development will be avoided taking account of the design of the Proposed Development. Therefore, it is considered that the water quality protection criteria and objectives of the GSDS and Water Framework Directive will be achieved.

In summary, it is concluded that the SuDS drainage strategy for the Proposed Development will result in an overall 'positive', 'slight' 'permanent' effect on receiving surface water quality and groundwater quality.

Foul water from the Proposed Development will be treated in the Ringsend WWTP before ultimately discharging to the Liffey Estuary Lower transitional waterbody. The increase discharge to the Ringsend WWTP as a result of the Proposed Development will reduce the overall available capacity of the facility. Foul water from the Proposed Development will only be discharged to the UE foul sewer under agreement from UE and other applicable statutory consents verifying capacity at the Ringsend WWTP for the Proposed Development. The UE CoF (UE COF Reference: CDS24005491) states that the proposed foul water connection is feasible subject to upgrades. The Applicant will fund all upgrade works and will ensure that all works are completed in agreement with and to the satisfaction of UE prior to connection. Therefore, it is considered that the likely effect on the water quality from wastewater generated onsite runoff will be 'negative', 'imperceptible' and 'permanent' and is considered non-significant in the context of the EIA Directive.

7.6.2.3 Drainage and Flood Risk

The Drainage and Water Infrastructure Engineering Report (Roger Mullarkey & Associates, 2025) notes the surface water drainage at the Proposed Development has been designed in accordance with SuDS and satisfies the requirements of the Greater Dublin Strategic Drainage Study (GSDSDS) to meet the following design criteria.

- Criterion 1 – River Water Quality Protection.
- Criterion 2 – River Regime Protection.
- Criterion 3 – Level of Service (Flooding) / Flood Risk Assessment.
- Criterion 4 – River Flood Protection.

The SSFRA (Kilgallen & Partners Consulting Engineers, 2025; submitted with the planning application under separate cover) identifies that the Proposed Development is deemed appropriate from a flood risk perspective, with no increased risk to surrounding areas .

As documented in the HRA (DNV, 2025c), the proposed drainage system has been designed with sufficient capacity to accommodate the total estimated 26.07m³/day of intercepted shallow groundwater, confirming that it is appropriately designed to manage anticipated volumes under steady-state conditions and reducing flood potential.

Therefore, it is considered that the potential flooding impacts associated with the Proposed Development are 'neutral', 'imperceptible' and 'long-term' and are considered non-significant in the context of the EIA Directive.

7.6.2.4 Hydrogeological Hazards

Given the shallow groundwater table across the site, there may be an increase in hydrostatic pressure which can reduce the void space of below ground infrastructure, and result in buoyancy and structural integrity risks for subsurface structures. The design and construction of the Proposed Development will be undertaken in accordance with current Building Regulations which will include measures to counter buoyancy of tanks and subsurface structures and ensure that the site will be suitable for use for the operational phase as a residential development taking account of the hydrogeological site setting. The predicted effects are considered to be 'neutral,' imperceptible' and 'permanent' and are not significant in the context of the EIA Directive.

7.6.3 Potential Cumulative Impacts

Cumulative Impacts can be defined as “impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project”. Effects which are caused by the interaction of effects, or by associated or off-site projects, are classed as indirect effects. Cumulative effects are often indirect, arising from the accumulation of different effects that are individually minor. Such effects are not caused or controlled by the project developer.

As part of this assessment, other offsite developments and proposed offsite developments as detailed in Chapter 2 of this EIAR were reviewed and considered for possible cumulative effects with the Proposed Development.

7.6.3.1 Water Resources

As documented in the Drainage and Water Infrastructure Engineering Report (Roger Mullarkey & Associates, 2025; submitted with the planning application under separate cover), water supply to the Proposed Development will be from a new water connection to the 400mmDI watermain in Boherboy Road. It is noted that water supply for the 10No. “east” Corbally site will be from the existing main in Corbally Rise. The UE CoF (UE COF Reference: CDS24005491) confirms that the proposed water supply connection is feasible without infrastructure upgrade from UE. The mains water supply will be operated in accordance with relevant existing statutory consents therefore there will be no cumulative effects associated with the Proposed Development on the supply network and water resources.

7.6.3.2 Water Quality

As documented in the Drainage and Water Infrastructure Engineering Report (Roger Mullarkey & Associates, 2025), foul water from the Proposed Development will be discharged to the mains foul network for treatment in the Ringsend WWTP (Discharge Licence No. D0034-02).

The UE CoF (UE COF Reference: CDS24005491) states that the proposed foul water connection is feasible subject to upgrades. The Applicant will fund all upgrade works and will ensure that all works are completed in agreement with and to the satisfaction of UE prior to connection.

The Ringsend WWTP is operated in accordance with relevant statutory approvals issued by UE. While it is noted there is an exceedance in effluent above the discharge license ELVs, as specified in the 2023 AER, it is noted that while the WWTP has an observable impact on the water quality in the in the near field of the discharge, in the Liffey Estuary Lower and the Tolka Estuary, it does not have an observable impact on the Water Framework Directive status. The increase discharge to the Ringsend WWTP as a result of the Proposed Development is considered to be insignificant in terms of the overall scale of the facility. The increased load does not have the capacity to alter the effluent released from the WWTP to such an extent as to result in likely significant effects on its receiving waters. In addition, upgrade works are currently on-going at Ringsend WWTP to increase the capacity of the facility from 1.6 million PE to 2.4 million PE. This plant upgrade will result in an overall reduction in the final effluent discharge of several parameters from the facility including BOD, suspended solids, ammonia, DIN and MRP (UE (formerly Irish Water), 2018). Foul water from the site will only be discharged to the UE network under the appropriate consents from UE and therefore, the

Proposed Development will have no cumulative impacts individually or in-combination on the receiving water quality and WFD status.

Considering the design of the surface water drainage network in accordance with the principles and objectives of SuDS and the GSDS to treat and attenuate water prior to discharging offsite, it is considered that there will be no cumulative impacts to the water quality and WFD status of receiving hydrological receptors including the Corbally, Coldwater, and Cooldown Streams and downstream waterbodies individually or in-combination with other developments detailed in Chapter 2 of this EIAR and within the Greater Dublin Area.

7.6.4 “Do Nothing” Impact

In the “Do Nothing” Scenario, it is assumed that the Proposed Development does not proceed. In this scenario it is considered that the site would remain as undeveloped lands in the immediate term., however, the potential for future development remains. As such, even in the absence of the Proposed Development, it is considered that the types of construction and operational phase impacts assessed in this chapter of the EIAR may still occur in the future, albeit under a different development proposal. In this scenario, the current assessment remains relevant as an indication of the likely nature and scale of impacts associated with the development on the site.

7.7 Avoidance, Remedial & Mitigation Measures

The mitigation measures outlined below will ensure that there will be no significant effect arising from the Proposed Development on the receiving groundwater and surface water environment and associated receptors (e.g., Natura 2000 sites). Therefore, the Proposed Development will not have any effect on compliance with the EU Water Framework Directive, European Communities (Environmental Objectives) Surface Water Regulations (S.I. 272 of 2009 and as amended) and the European Communities Environmental Objectives (Groundwater) Regulations (S.I. No. 9 of 2010 and as amended) individually or in combination

7.7.1 Construction Phase

A Construction Environmental Management Plan (CEMP) has been prepared by DVN (DNV, 2025a; submitted with the planning application under separate cover). The CEMP will address construction environmental management during the construction phase of the Proposed Development. Following appointment, the contractor will be required to further develop the CEMP to provide detailed construction phasing and methods to manage and prevent any potential emissions to ground and surface water with regard to the relevant industry standards (e.g., Guidance for Consultants and Contractors, CIRIA-C532', CIRIA, 2001).

The CEMP will take cognisance of measures outlined in the EIAR and will be implemented for the duration of the construction phase, covering construction management activities that will take place during the construction phase of the Proposed Development.

Mitigation works will be adopted as part of the construction works for the Proposed Development. The measures will address the main activities of potential impact which include:

- Control and management of water and surface runoff.
- Control and management of shallow groundwater during excavation and dewatering

- Management and control of soil and materials.
- Control of management of in-stream or near stream works.
- Control of management of materials from off-site sources.
- Control and management of piling.
- Appropriate fuel and chemical handling, transport and storage.
- Management of accidental release of contaminants at the site.

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The construction works will be managed in accordance with all statutory obligations and regulations and with standard international best practice. Good construction management practices will minimise the risk of pollution from construction activities at the subject site including but not limited to:

- Construction Industry Research and Information Association (CIRIA), 2001. Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors.
- CIRIA, 2015. Environmental Good Practice on Site (C741).
- Enterprise Ireland Oil Storage Guidelines (BPGCS005).
- Environmental Protection Agency (EPA), 2013. IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities.
- CIRIA, 2007. The SuDS Manual (C697).
- UK Environment Agency, 2004. UK Pollution Prevention Guidelines (PPG).
- CIRIA, 2006. Control of Water Pollution from Linear Construction Projects: Technical Guidance (C648).
- Inland Fisheries Ireland (2016). Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters.

7.7.1.1 Control and Management of Instream Works and Works Adjoining Watercourses

All open waterbodies at the site including the Corbally, Coldwater, and Cooldown will be protected for the duration of the works.

A 20m buffer will be retained at all open waterbodies. Site traffic will only be permitted within this buffer to facilitate instream and near stream works for the construction of the proposed headwalls to receiving waterbodies (i.e., Corbally, Coldwater, And Cooldown Streams), overflow to the Translocated Marshland Area and bridge crossings to facilitate vehicular, pedestrian and cyclist connections to adjoining developments at Corbally Heath and Corbally Glade to the east and Carrigmore Green to the north, and pedestrian/cyclist access into Carrigmore Park to the east.

Buffer zones will be established by erecting a silt fencing or bunding along the length of the open waterbodies (i.e., Corbally Stream, Coldwater Stream, and Cooldown Stream) with cognisance to Inland Fisheries Ireland (IFI) Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters (IFI, 2016). Silt fencing will comprise wooden posts and double walled geotextile membrane buried in an 'L' shape to a minimum depth of 250mm. The silt fencing will act in filtering any potential surface water run-off from the site generated during the proposed works and will be retained in place for the duration of the construction phase until the development is complete. Heras fencing will be installed in front of the silt fencing at the Site to prevent "Site creep", the progressive movement of site activities towards this silt fence. The project specific CEMP (which will be prepared by the main

contractor in advance of construction works commencing) will identify how this silt curtain is to be installed and maintained throughout the construction phase.

The silt fences will be monitored to ensure that they remain functional throughout construction of the Proposed Development. Where necessary, maintenance will be carried out on the fences to ensure that they continue to be effective. This will be particularly important after heavy rainfall events. The checks will be undertaken by the Environmental Manager. The frequency of monitoring will depend on the stage of works, and local environmental conditions. Daily checks may be appropriate during the initial site clearance, during works in the vicinity of the open waterbodies and during and after storm events. Weekly or bi-weekly checks may be appropriate at other times.

All instream works or works carried out in or adjacent to the the Corbally, Coldwater, and Cooldown Streams will adhere to the Inland Fisheries Ireland (IFI) Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters (IFI, 2016), the Transport Infrastructure Ireland (TII) Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes (TII, 2008) and CIRIA C648 Control of Water Pollution from Linear Construction Projects (CIRIA, 2006).

All instream works will include the following measures:

- Road stream crossings will be box culverts in design due to the associated site constraints (i.e., the presence of trunk watermains at the location of the proposed crossings and the requirement for the achievement of greater than minimum vertical separation), the requirement to tie into existing roads, and the narrow width of the watercourse on site. Embedded culverts will be buried to a depth of 500mm below the stream bed at the natural gradient, and will be back filled with clean gravel to match the existing stream profile. The culvert will be sized to maintain the natural channel width. The stream crossings will be implemented as per a method statement developed by the appointed contractor in advance of construction works commencing and agreed with IFI as required.
- All works for the proposed translocation will be undertaken in accordance with the method statement prepared by Gannon & Associates Landscape Architecture (Gannon & Associates Landscape Architecture, 2025. Marsh Translocation Report; submitted with the planning application under separate cover). These works will be undertaken in advance of other construction works commencing and the contractor will ensure that appropriate temporary rewatering is utilised as appropriate until the proposed drainage network is established.
- A suitably qualified Ecological Clerk of Works (ECoW) will be present on-site during works for the construction of the overflow to the Translocated Marshland Area.
- Entry to the Corbally Stream by vehicles will be avoided, while vehicle usage along the banks will be restricted as much as practicable. Any machines working in close proximity of the watercourse must be protected against leakage or spillage of fuels, oils, greases and hydraulic fuels.
- Works will be carried out from the bank side, as best practice in-stream works will be restricted to the period 1st July through 30th September, to comply with the seasonal restrictions in salmonid rivers.
- Temporary diversion of water flow may be required to maintain continuous flow and prevent flooding during the connection process.

- Silt traps will be staggered along the length of the overflow, and not only at the lower reaches towards its outflow into the translocated wetland. Silt trap design can vary, from depressions added to the watercourse bed, to log sections laid lengthways into the drain, to the use of geotextile barriers. Once silt traps and silt fences become functional, they will be checked regularly and maintained as necessary, in order to ensure continued effectiveness throughout operations.
- Additional silt fences and other sediment control measures will be utilised as required to prevent sedimentation in the Corbally Stream.
- Regular monitoring of water quality upstream and downstream of the works area will be undertaken by the ECoW to detect any changes and take corrective actions if necessary.
- Existing vegetation will be preserved where possible and replant disturbed areas promptly to stabilize soil and reduce erosion.

Furthermore, works during the construction of the outfalls to the Corbally, Coldwater, and Cooldown Streams will include the following measures:

- The outfall headwalls will be constructed from precast concrete to allow their construction off site, while hoisting of the structure will be carried out from the site side of the riverbank.
- Once excavations for the outfall trenches are complete, the base and sides of the trenches will be seeded with a native wetland wild flora seed mix which will be allowed to establish for a 6–8-week period prior to the outfall trench becoming operational and receiving surface waters from the onsite drainage network. This is a grass mix with some wildflower elements which will aid the overall biodiversity approach/green infrastructure and provide “green” erosion prevention of the outfall channel and prevent siltation of the Corbally, Coldwater, and Cooldown Streams.

The contractor will employ an Environmental Clerk of Works (EnCoW) who will monitor water quality upstream and downstream of the area of works. The programme of water quality monitoring and locations of sampling will be agreed with SDCC in advance of construction works commencing. However, it is anticipated that data on pH, electrical conductivity, and turbidity, suspended solids and hydrocarbons will be collected as follows:

- Twice weekly visits during general site works
- Daily site visits during key construction activities (to be agreed between the environmental specialist, the appointed contractor and SDCC (e.g., during the construction of the translocated wetland, during installation of the proposed outfalls and stream crossings, during and immediately after clearance of on-site vegetation)).
- Event inspection (e.g., following heavy rainfall events or during concrete pours).

Monitoring will be undertaken for a period of at least two months prior to works commencing and one-month post construction. Trigger concentrations will be agreed at commencement and based on the baseline established in the two months prior to works commencing. It is noted that where a deterioration in water quality is observed downstream of the site this will be brought to the attention of the contractor by the Environmental / Ecological Clerk of Works, and any suitable contingency measures will be instigated.

All monitoring data will be collated by the EnCoW to show trends for indicator parameters pH, conductivity, turbidity or suspended solids and hydrocarbons, and will be shared with SDCC as requested.

7.7.1.2 Control and Management of Water and Surface Runoff

There will be no direct discharge to groundwater or surface water during the construction phase of the Proposed Development.

Surface water runoff management will be required to prevent runoff entering excavations during construction. Surface water will require diversion around the open excavations using standard temporary drainage methods to ensure that surface water is effectively conveyed around works areas and with no adverse effects to the overall existing surface water flow regime.

Where dewatering of shallow groundwater is required or where surface water runoff must be pumped from the excavations, water will be managed in accordance with best practice standards (i.e., CIRIA C750), the OCEMP (DNV, 2025), the project specific CEMP and regulatory consents to minimise the potential impact on the local groundwater flow regime within the soil and bedrock.

All run-off from the Site or any areas of exposed soil will be managed as required with temporary pumping and following appropriate treatment as required (e.g., settlement ponds, silt traps, silt busters, silt socks and / or hydrocarbon interceptors). Surface water runoff from areas stripped of topsoil and surface water collected in excavations will be directed to temporary onsite settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge at a controlled rate.

As mentioned in Section 7.7.1.1, silt fencing or bunding will be installed along the boundaries of all onsite and adjoining waterbodies including the Corbally Stream, Coldwater Stream, and Cooldown Stream.

Stockpiles of loose materials pending re-use onsite or removal offsite will be located as far as feasible from the Corbally Stream, Coldwater Stream, and Cooldown Stream (a minimum set back of 20m from watercourses will be maintained) and will be appropriately sealed / covered and a silt fence or bunding will be installed around it to ensure no soils and sediments are washed out overland to the receiving surface waterbodies. The silt fence or bunding will be installed on three sides of the stockpiled material with access from the fourth (up-hill) side.

The performance of all surface water management measures including settlement ponds and silt fences will be monitored to ensure that they remain functional throughout construction of the Proposed development. Where necessary, maintenance will be carried out to ensure that the measures continue to be effective. This will be particularly important after heavy rainfall events.

Unauthorised discharge of water (groundwater / surface water runoff) to ground, drains or watercourses will not be permitted. The Appointed contractor will ensure that the discharge of water to ground, drains or watercourses will be in accordance with the necessary discharge licences issued by Uisce Eireann (UE) under Section 16 of the Local Government (Water Pollution) Acts and Regulations for any water discharges to sewer or from South Dublin County Council (SDCC) under Section 4 of the Local Government (Water Pollution) Act 1977, as amended in 1990 for discharges to surface water.

Under no circumstances will any untreated wastewater generated onsite (from equipment washing, road sweeping etc.) be released to ground or to drains. Existing surface water drainage located along public roads will be protected for the duration of the works to ensure that any untreated wastewater generated onsite does not enter the public sewers.

There may be a temporary increase in the exposure of the underlying shallow groundwater during excavation works. Where necessary, surface water runoff will be prevented from entering open excavations with sandbags or other approved methods proposed by the appointed contractor. Furthermore, the appointed contractor will ensure that machinery does not enter the groundwater if encountered during construction.

The appointed contractor will avoid work involving moving of soil during heavy rainfall to minimise potential for entrainment of silt.

A regular review of weather forecasts of heavy rainfall will be conducted, and a contingency plan will be prepared for before and after such events to minimise any potential nuisances. As the risk of the break-out of silt laden runoff is higher during these weather conditions, no work will be carried out during such periods where possible.

Public roads outside the site will be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary. Trucks entering / leaving the site will pass through a wheel washing system. The wheels of all lorries will be cleaned prior to leaving the site so that traffic leaving the site compound will not generate dust or cause the build-up of aggregates and fine material in the public domain. This will be carried out in a dedicated wash down zone with dedicated site personnel. The correct use and management of these will be undertaken by the appointed contractor to ensure that there is no harm or impact to the receiving water environment.

Discharge from any vehicle wheel wash area is to be directed to an onsite settlement tank for discharge to the UE foul network (subject to receipt of the relevant consent from UE) or by tankering of waste offsite by an appropriately authorised contractor. Any debris or sediment within the wheel-wash will be emptied periodically for disposal offsite at a licenced facility.

7.7.1.3 Concrete Works

The use of cementitious grout during the construction of footpaths and other site infrastructure will be required. Any potential impact to water quality will be avoided through the use of appropriate design and methods that will be implemented by the appointed contractor and in accordance with the project specific CEMP (DNV, 2025a) and relevant industry standards.

Where possible precast concrete will be used for concrete works. However, where cast-in-place concrete is required (i.e., foundations, footpaths etc.), all work will be carried out to avoid any contamination of the receiving water environment. All work must be carried out in dry conditions and be effectively isolated from any groundwater and surface water.

The following mitigation measures will be implemented.

- All ready-mixed concrete will be delivered to the site by truck.
- Concrete batching will take place off-site only.
- Wash-down and wash-out of concrete trucks will occur in a controlled, bunded area, with wash water collected in a container and disposed of via a licensed waste contractor, in accordance with relevant waste management legislation.
- Excess concrete will not be disposed of on-site under any circumstances.

- Pouring of cement-based materials will only be carried out in dry conditions, and pumped concrete will be actively monitored to prevent accidental discharge.
- A site-specific risk assessment for wet concreting will be completed prior to works commencing.
- Concrete pouring will not be permitted within 50 metres of any watercourse during adverse weather conditions, to prevent potential contamination of surface waters.

Weathering forecasting should be utilised to plan dry days for concrete pours. Prior to pours, the designated area of the site shall be free of standing water and plastic covers will be ready in the case of sudden rainfall event.

7.7.1.4 Piling

The project specific CEMP (which will be prepared by the main contractor in advance of construction works commencing) will identify how the proposed piling methodology will minimise the potential for the introduction of any temporary conduit between any potential sources of contamination at the ground surface and underlying groundwater. The piling method will include procedures to ensure any potential impact to water quality is prevented, including preventing surface runoff or other piling/drilling fluids from entering the pile bores and surrounding formation. Where there is a requirement to use lubricants, drilling fluids or additives, the contractor will use water-based, biodegradable, and non-hazardous compounds under controlled conditions.

7.7.1.5 Handling of Fuels and Hazardous Materials

Fuelling and lubrication of equipment will be carried out in a designated area of the site away from any watercourses and drains (where not possible to carry out such activities offsite).

Any diesel, fuel or hydraulic oils stored onsite will be stored in designated areas, these areas will be bunded and located away from surface water drainage and features. It is noted that the use of cleaning chemicals will be kept to a minimum. There will be clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage. Adequate security will be provided by the appointed contractor to potential pollutants against vandalism.

Bunds will have regard to Environmental Protection Agency guidelines 'Amendment to IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities' (EPA, 2013). All tank and drum storage areas will, as a minimum, be bunded to a volume not less than the greater of the following:

- 110% of the capacity of the largest tank or drum within the bunded area; or
- 25% of the total volume of substance that could be stored within the bunded area.

All fuel storage areas will be bunded in the site compound and will be clearly marked. The bund will be at least 50m away from open waterbodies. A designated impermeable refuelling area will also be established with all plant brought to this point for filling. Spill kits will be kept in these areas in the event of spillages. Site crew will be trained in appropriate refuelling techniques. Equipment will not be left unattended during refuelling.

Strict supervision of contractors will be adhered to in order to ensure that all plant and equipment utilised on-site is in good working condition. Any equipment not meeting the required standard will not be permitted for use within the Proposed Development Site. Only

emergency breakdown maintenance will be carried out on-site. Drip trays and spill kits will be available on-site to ensure that any spills from vehicles are contained and removed off-site.

There may also be the requirement for use of portable generators or similar fuel containing equipment during the construction phase of the Proposed Development, which will be placed on suitable drip trays. Regular monitoring of drip tray content will be undertaken to ensure sufficient capacity is maintained at all times.

7.7.1.6 Emergency Procedures

Emergency procedures will be developed by the appointed contractor in advance of works commencing and spillage kits will be available onsite including in vehicles operating onsite. Construction staff will be familiar with emergency procedures through induction, toolbox talks, and method statements to ensure that all staff members are well-prepared and knowledgeable about the necessary steps to take in the event of an emergency (e.g., accidental fuel spillages). Remedial action will be immediately implemented to address any potential impacts in accordance with industry standards and legislative requirements.

- Any required emergency vehicle or equipment maintenance work will take place in a designated impermeable area within the site.
- Emergency response procedures will be put in place, in the unlikely event of spillages of fuels or lubricants.
- Spill kits including oil absorbent material will be provided so that any spillage of fuels, lubricants or hydraulic oils will be immediately contained.
- In the event of a leak or spill from equipment in the instance of a mechanical breakdown during operation, any contaminated soil will be removed from the site and compliantly disposed offsite. Residual soil will be tested to validate that all potentially contaminated material has been removed. This procedure will be undertaken in accordance with industry best practice procedures and standards.
- All construction works staff will be familiar with emergency procedures in the event of accidental fuel spillages.
- All construction works staff onsite will be fully trained on the use of equipment.

This procedure will be undertaken in accordance with industry best practice procedures and standards. These measures will ensure that there is minimal risk to the receiving land, soil and geological environment associated with the construction phase of the Proposed Development.

7.7.1.7 Infrastructure

All below ground foul drainage infrastructure will be constructed in accordance with current UE requirements to ensure that there are no potential effects to groundwater quality.

7.7.1.8 Welfare Facilities

Welfare facilities have the potential, if not managed appropriately, to release organic and other contaminants to ground or surface water courses. Foul drainage from temporary welfare facilities during the construction phase of the Proposed Development will be discharged to temporary holding tank(s) the contents of which will periodically be tankered offsite to a licensed facility. All waste from welfare facilities will be managed in accordance with the relevant statutory obligations by an appropriately authorised contractor.

Any connection to the public foul drainage network during the construction phase of the Proposed Development will be undertaken in accordance with the necessary temporary discharge licences issued by UE.

7.7.1.9 Removal of Surplus Materials and Waste

All surplus materials and any waste will be removed offsite in accordance with the requirements outlined in the CEMP (DNV, 2025a) and the RWMP (DNV, 2025b) and will be managed in accordance with all statutory obligations including where appropriate re-use as by-product in accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011 (SI No. 126 of 2011) as amended (referred to hereafter as Article 27).

Any surplus material not suitable for re-use as a by-product and other waste materials arising from the construction phase will be removed offsite by an authorised contractor and sent to the appropriately authorised (licensed/permitted) receiving waste facilities. As only authorised facilities will be used, the potential impacts at any authorised receiving facility sites will have been adequately assessed and mitigated as part of the statutory consent procedures.

7.7.2 Operational Phase

Based on the design of the Proposed Development there are limited potential sources of contamination during the operational phase.

Surface water will be managed in accordance with the principles and objectives of SuDS and the GSDS to treat and attenuate water prior to discharging offsite. Ongoing regular operational monitoring and maintenance of drainage and the SuDS measures will be incorporated into the overall management strategy for the Proposed Development. This will ensure that there are no effects on water quality and quantity (flow regime) during the operational phase of the Proposed Development.

Standard design and construction measures will be implemented to mitigate potential impacts associated with shallow groundwater. These include the incorporation of groundwater drainage systems around impermeable subsurface structures, such as building foundations, attenuation tanks, and temporary construction barriers. These measures will minimise the risk of groundwater mounding on the upgradient side of structures and reduce the potential for buoyancy-related issues.

Where building foundations and utility infrastructure intersect the groundwater table, appropriate structural design and perimeter drainage will be employed to prevent groundwater ingress and maintain the integrity of below-ground assets.

Stream crossings have been designed in accordance with OPW requirements, with soffit levels at least 500mm above the 1% Annual Exceedance Probability (AEP) flood level. Two vehicular crossings meet road level constraints and have received OPW Section 50 consent.

To manage shallow groundwater and reduce surface-level flood risk, a network of land drains will be installed across the site. These drains are designed to intercept and convey groundwater, discharging to the Corbally Stream, Coldwater Stream, and Cooldown Stream. As documented in the HRA (DNV, 2025c), the proposed drainage system has been designed with sufficient capacity to accommodate the total estimated 26.07 m³/day of intercepted shallow groundwater. This confirms that the system is appropriately engineered to manage

anticipated volumes under steady-state conditions, while also contributing to flood risk reduction and the long-term viability of the translocated wetland habitat.

Foul water during the operational phase of the Proposed Development will ultimately discharge via the Ringsend WWTP to the Liffey Lower Estuary transitional waterbody. The Ringsend WWTP is operated in accordance with relevant statutory approvals issued by UE. Foul water from the site will only be discharged to the UE network under the appropriate consents from UE, and therefore, the Proposed Development will not cause a potential effect at any Natura 2000 sites associated with discharges from the site.

There is no other requirement for mitigation measures for the operational phase of the Proposed Development.

7.7.3 “Worst Case” Scenario

During the construction phase and operational phase of the Proposed Development, in a worst-case scenario, such as a fuel spill or accidental unmitigated release of other hazardous compounds occurring, and in the absence of any mitigation measures it is considered that there would be a potential ‘negative’, ‘moderate to significant’ and ‘long term’ impact on the quality of the receiving waterbody and downstream receptors, depending on the nature of the incident. In the absence of any mitigation measures and worst-case scenario, it is considered that there would be a potential ‘negative’, ‘moderate’ to ‘significant’ and ‘long-term’ effect on the quality of a localised area of the aquifer and on the receiving waterbodies including the Corbally, Coldwater, and Cooldown Streams and locally within the downstream Camac River.

In a worst-case scenario, there is a potential risk of accidental release of untreated water via failure or rupture of the drainage system with potential effects on the receiving water environment. It is considered that the potential risk of the release of untreated water will present a ‘negative’, ‘moderate’ and ‘long-term’ effect on the receiving environment.

However, these worst-case scenarios are deemed to be unlikely scenarios taking account of the embedded design avoidance measures and mitigation measures and therefore, there would be a ‘neutral’, ‘imperceptible’ and ‘short-term’ effect on the receiving environment.

7.8 Water Framework Directive

The EU Water Framework Directive (2000/60/EC), as amended by Directives 2008/105/EC, 2013/39/EU, and 2014/101/EU (“WFD”), was established to ensure the protection and enhancement of the water environment across all EU member states. In Ireland, the WFD has been transposed through the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003).

The WFD requires that all member states protect and improve water quality in all waters, with the objective of achieving at least ‘good’ status by 2027. It applies to all surface waters (including rivers, lakes, reservoirs, streams, and canals), groundwater, transitional (estuarine), and coastal waters. Any new development must ensure that this objective is not compromised.

A risk-based HRA was undertaken by DNV (DNV, 2025c) to evaluate the potential effect of the Proposed Development on water quality within the surrounding hydrological environment. This assessment considered both the baseline conditions and the relevant legislative framework, including the WFD and associated national regulations

7.8.1 Waterbody Status

The risk-based assessment focused on the following waterbodies that have a potential hydraulic connection to the site:

- Kilcullen GWB.
- Dublin GWB.
- Camac_020 (i.e., the Corbally Stream, Coldwater Stream, Cooldown Stream).
- Camac_030.

Given the distance downstream, and the significant dilution and taking account of the existing baseline conditions and WFD Status it is considered that there will be no significant adverse effects on the Camac_040 and downstream transitional and coastal waterbodies, including the Liffey Estuary Upper, Liffey Estuary Lower, and Dublin Bay and other tidally linked transitional and coastal waterbodies.

7.8.2 Assessment

The findings of the risk-based assessment (DNV, 2025c) identified that in the absence of any mitigation and avoidance measures there could be a potential impact on the water quality within receiving water bodies associated with the Proposed development, specifically within the Kilcullen GWB, the Dublin GWB, the Camac_020 (i.e., the Corbally Stream, Coldwater Stream, Cooldown Stream) and locally within the Camac_030. The potential effect on WFD status for water bodies was assessed based on the worst-case scenario, taking account of the baseline hydrological and hydrogeological conditions at the subject site and the WFD status assigned by the EPA (EPA, 2025).

To address potential risks, the Proposed Development incorporates design avoidance and mitigation measures as outlined in this chapter of the EIAR, including the implementation of a project specific CEMP during the construction phase and the incorporation of SuDS in the design of the Proposed Development. These measures will serve to mitigate any potential effect on the receiving groundwater and surface water environment. Hence, the Proposed Development will not have any effect on compliance with the EU Water Framework Directive.

Further details of the assessment are included in the HRA (DNV, 2025c) included in Volume 3 Appendix 6.1 of the EIAR.

7.8.3 Conclusion

Taking into account the embedded design and mitigation measures, the Proposed Development:

- Will not result in deterioration of the status of hydrologically and hydrogeologically connected waterbodies.
- Will not compromise the objective of achieving 'good' surface water status or good ecological potential.
- Will remain compliant with the WFD and relevant national legislation.

There will be no adverse effect on the existing WFD status of hydrologically and hydrogeologically connected waterbodies associated with the Proposed Development including the Kilcullen GWB, the Dublin GWB, the Camac_020 (i.e., the Corbally Stream,

Coldwater Stream, Cooldown Stream) and Camac_030 taking account of embedded design avoidance and mitigation measures (DNV, 2025c).

Overall, there will be a 'neutral to positive', 'slight' and 'long-term' effect on the WFD Status. This effect is considered non-significant in the context of the EIA Directive.

7.9 Residual Impacts

Residual impacts are defined as 'effects that are predicted to remain after all assessments and mitigation measures'. They are the remaining 'environmental costs' of a project and are the final or intended effects of a development after mitigation measures have been applied to avoid or reduce adverse impacts.

The predicted effects of the construction and operational phases of the Proposed Development are described in Table 7-11 in terms of quality, significance, extent, likelihood, and duration. The relevant mitigation measures are detailed, and the residual effects are determined which take account of the avoidance, remedial and mitigation measures.

Overall, considering the avoidance, remedial and mitigation measures detailed in Section 7.7, the residual effects regarding the construction and operational phases of the Proposed Development are considered 'imperceptible' to the receiving water environment (hydrology and hydrogeology) and considered non-significant in the context of the EIA Directive.

There will be no effect to the existing WFD Status of water bodies associated with the Proposed Development including the Kilcullen GWB, the Dublin GWB, the Camac_020 (i.e., the Corbally Stream, Coldwater Stream, Cooldown Stream) and Camac taking account of design avoidance and mitigation measures where required.

Table 7-11. Residual Impacts

Activity	Attribute	Predicted Impact	Quality	Significance (Significance in the Context of EIA Directive)	Extent	Probability	Duration	Type	Mitigation	Residual Impact (Significance in the Context of EIA Directive)
Construction Phase										
Dewatering Works	Hydrogeological Flow Regime	There may be a requirement for localised dewatering or sump pumping on a temporary basis during excavation works. However, it is considered that the extent of any impact will be localised to the immediate area surrounding the excavations.	Negative	Slight (non-significant)	Local	Likely	Temporary	Direct	Water pumped from excavations will be managed in accordance with best practice standards (i.e., CIRIA C750), the CEMP and regulatory consents.	Imperceptible (non-significant)
Construction of the proposed overflow to the translocated marshland area	Hydrological Flow Regime	Impacts on flow within Coldwater Stream during the construction the proposed overflow.	Neutral	Slight to Moderate	Local	Likely	Temporary	Direct	Construction of the overflow will ensure minimum disruption to flow regime of the Coldwater Stream and continuous flow will be maintained.	Imperceptible (non-significant)
Introduction of Contaminants	Groundwater Quality and WFD status	During excavation, there is a risk to the	Negative	Significant (significant)	Local	Unlikely	Long-term	Direct / Worst Case	Emergency procedures will be developed by the	Imperceptible (non-significant)

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Activity	Attribute	Predicted Impact	Quality	Significance (Significance in the Context of EIA Directive)	Extent	Probability	Duration	Type	Mitigation	Residual Impact (Significance in the Context of EIA Directive)
to Open Excavations		underlying bedrock aquifer due to any accidental release of fuels or other contaminates to exposed granular subsoils or bedrock creating a direct pathway to the bedrock aquifer.							appointed contractor in advance of works commencing. Remedial action will be immediately implemented to address any potential impacts in accordance with industry standards and legislative requirements.	
Introduction of Contaminants to Open Excavations	Receiving Surface Water Quality and WFD status	In an un-mitigated scenario following any accidental release of fuels or other contaminates to ground, there is an indirect risk via lateral migration in groundwater or overland flow to receiving surface waterbodies (i.e., Corbally, Coldwater, and Cooldown Streams) and	Negative	Moderate to Significant (significant)	Regional	Unlikely	Long-term	Indirect / Worst Case	Emergency procedures will be developed by the appointed contractor in advance of works commencing. Remedial action will be immediately implemented to address any potential impacts in accordance with industry standards and legislative requirements.	Imperceptible (non-significant)

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Activity	Attribute	Predicted Impact	Quality	Significance (Significance in the Context of EIA Directive)	Extent	Probability	Duration	Type	Mitigation	Residual Impact (Significance in the Context of EIA Directive)
		locally within the downstream Camac River.								
Discharge of Water (Groundwater / Surface Water Runoff) to Sewer, Watercourses or Groundwater	Groundwater and Receiving Surface Water Quality and WFD status	Water will be discharged by the contractor, following appropriate treatment (e.g., settlement or hydrocarbon interceptor), to sewer, watercourses or groundwater in accordance with the necessary discharge licences issued by UE or WCC.	Neutral	Imperceptible (non-significant)	Local	Possible	Temporary	Direct	There will be no unauthorised discharge of water (groundwater / surface water runoff) to sewer, watercourses or groundwater	Imperceptible (non-significant)
Instream and Near Stream Works	Receiving Surface Water Quality and WFD status	There is the potential for some disturbance of the stream bed and increased suspended solids content of the water downstream of the works area during the	Negative	Moderate (non-significant)	Regional	Possible	Short-term	Direct	All instream works or works carried out in or adjacent to open waterbodies will adhere to the IFI Guidelines (IFI, 2016), (TII) Guidelines (TII, 2008), CIRIA C648	Imperceptible (non-significant)

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Activity	Attribute	Predicted Impact	Quality	Significance (Significance in the Context of EIA Directive)	Extent	Probability	Duration	Type	Mitigation	Residual Impact (Significance in the Context of EIA Directive)
		construction of the proposed headwalls, overflow to the Translocated Marshland Area and bridge crossings.							and requirements of the CEMP.	
Discharge of Entrained Sediment or Other Contaminants in Surface Runoff (Overland Flow)	Receiving Surface Water Quality and WFD status	There is a potential for release of suspended sediments entrained in surface runoff from groundworks or indirectly tracked on vehicles / machinery entering the receiving Corbally, Coldwater, and Cooldown Streams.	Negative	Slight to Moderate (non-significant)	Local	Possible	Short Term	Direct	Implementation of appropriate procedures in accordance with the CEMP, including silt fences and buffer zones will be implemented to prevent fugitive runoff.	Imperceptible (non-significant)
Piling	Groundwater Quality and WFD status	Piling during the construction phase of the Proposed	Negative	Moderate to Significant (significant)	Local	Possible	Medium Term	Direct	Implementation of appropriate procedures in accordance with	Imperceptible (non-significant)

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Activity	Attribute	Predicted Impact	Quality	Significance (Significance in the Context of EIA Directive)	Extent	Probability	Duration	Type	Mitigation	Residual Impact (Significance in the Context of EIA Directive)
		Development may potentially create pathways for contaminants such as grout or other materials to enter underlying groundwater							the CEMP including preventing surface runoff or other piling/drilling fluids from entering the pile bores and surrounding formation.	
Removal of Surplus Materials and Waste	Groundwater Quality and WFD status at the destination site.	In the unlikely event that surplus soil or other waste materials are directed to an unauthorised location there is potential to impact on the receiving hydrogeology at that location	Negative	Slight to Moderate (non-significant)	Regional	Unlikely	Medium Term	Indirect	All surplus materials and waste that will require removal offsite will be managed in accordance with all statutory obligations.	Imperceptible (non-significant)
Introduction of Cementitious Materials to Groundwater	Groundwater Quality and WFD status	Potential release of cementitious material during construction works for foundations, pavements and infrastructure.	Negative	Moderate to Significant (significant)	Local	Unlikely	Medium Term	Direct / Worst Case	Where cast-in-place concrete is required, all work will be carried out to avoid any contamination of the receiving water environment through the use of appropriate design	Imperceptible (non-significant)

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Activity	Attribute	Predicted Impact	Quality	Significance (Significance in the Context of EIA Directive)	Extent	Probability	Duration	Type	Mitigation	Residual Impact (Significance in the Context of EIA Directive)
									and methods implemented by the appointed Contractor and in accordance with the CEMP and relevant industry standards.	
Waste Water Generated Onsite	Receiving Surface Water Quality and WFD status	Foul water generated from welfare facilities onsite will be either tankered offsite in accordance with waste management legislation or discharged under temporary consent to the UE mains foul network for treatment at Ringsend WWTP.	Neutral	Imperceptible	Regional	Unlikely	Temporary	Indirect	All waste from welfare facilities will be managed in accordance with the relevant statutory obligations.	Imperceptible (non-significant)
Operational Phase										
Construction of the	Hydrogeological Regime	The Proposed Development will result in an	Negative	Imperceptible (non-significant)	Local	Likely	Permanent	Direct	None required. The proposed SuDS combined	Imperceptible (non-significant)

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Activity	Attribute	Predicted Impact	Quality	Significance (Significance in the Context of EIA Directive)	Extent	Probability	Duration	Type	Mitigation	Residual Impact (Significance in the Context of EIA Directive)
Proposed Development		increase of hardstanding on the site resulting in a potential impact on the hydrogeological flow regime within a very localised zone of the aquifer.							with the limited recharge potential across the site means that there will be little to no change to the overall recharge potential to the aquifer.	
Below Ground Infrastructure	Hydrogeological Regime	The proposed building foundations and attenuation tank have the potential to impede local groundwater flow and movement through the site with potential for groundwater mounding upgradient of structures	Negative	Imperceptible (non-significant)	Local	Likely	Permanent	Direct	Standard design and construction measures that include incorporating groundwater drainage around impermeable subsurface structures will minimise adverse effects of groundwater mounding at the upgradient side of the structures and potential buoyancy issues.	Imperceptible (non-significant)

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Activity	Attribute	Predicted Impact	Quality	Significance (Significance in the Context of EIA Directive)	Extent	Probability	Duration	Type	Mitigation	Residual Impact (Significance in the Context of EIA Directive)
Overflow to Translocated Marshland	Hydrological Flow Regime	The sustained supply of water to the translocated marshland will allow for continued hydraulic connection (via overland flow and infiltration) with the Corbally Stream.	Neutral	Imperceptible (non-significant)	Local	Likely	Permanent	Direct	None required. Water will continue to discharge to the Corbally Stream via overland flow and/or groundwater discharge.	Imperceptible (non-significant)
Management of Surface Water Runoff	Receiving Surface Water Quality and WFD status	Surface water runoff from the Proposed Development will discharge to the receiving Corbally, Coldwater, and Cooldown Streams.	Positive	Slight (non-significant)	Local	Likely	Permanent	Direct / Cumulative	Surface runoff from roofs and paved areas will be managed and treated in accordance with SUDS and pass through petrol interceptor and attenuation tanks prior to discharging to local surface water drainage network.	Imperceptible (non-significant)
Foul Water	Receiving Surface Water Quality and WFD status	Foul water from the Proposed Development will discharge via the	Neutral	Imperceptible (non-significant)	Regional	Likely	Permanent	Direct / Cumulative	The UE CoF letter states that the wastewater connection is	Imperceptible (non-significant)

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Activity	Attribute	Predicted Impact	Quality	Significance (Significance in the Context of EIA Directive)	Extent	Probability	Duration	Type	Mitigation	Residual Impact (Significance in the Context of EIA Directive)
		Ringsend WWTP to the Liffey Estuary Lower transitional waterbody.							feasible subject to upgrades which will be funded by the Applicant. The Applicant will ensure that any connection will be under the consent of UE and subject to a connection offer.	
Flooding	Hydrological Regime	The SSFRA (Kilgallen & Partners Consulting Engineers, 2025) identifies that that the Proposed Development is deemed appropriate from a flood risk perspective, with no increased risk to surrounding areas.	Neutral	Imperceptible (non-significant)	Local	Likely	Long Term	Direct / Cumulative	None required. Surface water drainage at the Proposed Development has been designed in accordance with SuDS and satisfies the requirements of the GSDS. Furthermore, the proposed drainage system has been designed with sufficient capacity to accommodate intercepted shallow groundwater.	Imperceptible (non-significant)

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Activity	Attribute	Predicted Impact	Quality	Significance (Significance in the Context of EIA Directive)	Extent	Probability	Duration	Type	Mitigation	Residual Impact (Significance in the Context of EIA Directive)
Below Ground Infrastructure	Subsurface Structures	The interception of shallow groundwater may increase hydrostatic pressure which can reduce the void space of below ground infrastructure, and result in buoyancy and structural integrity risks for subsurface structures.	Neutral	Imperceptible (non-significant)	Local	Possible	Permanent	Direct	The design and construction of the Proposed Development will be undertaken in accordance with current Building Regulations which will include measures to counter buoyancy of tanks and subsurface structures.	Imperceptible (non-significant)
Water Supply	Water Supply Network and Water Resources	Mains supply from UE will be provided for the Proposed Development.	Neutral	Imperceptible (non-significant)	Regional	Likely	Long Term	Direct / Cumulative	The UE CoF letter states that the water supply connection is feasible without infrastructure upgrade from UE. The Applicant will ensure that any connection will be under the consent of UE and subject to a connection offer. The mains water supply will	Imperceptible (non-significant)

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Activity	Attribute	Predicted Impact	Quality	Significance (Significance in the Context of EIA Directive)	Extent	Probability	Duration	Type	Mitigation	Residual Impact (Significance in the Context of EIA Directive)
									be operated in accordance with relevant existing statutory consents.	

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7.10 Monitoring

7.10.1 Construction Phase

During the construction phase of the Proposed Development, the following monitoring measures will be considered:

- An ECoW and EnCoW will be appointed to ensure best practices are carried out during critical stages of the construction works associated with surface water in particular works for the overflow to the translocated marshland area, construction of the proposed headwalls and bridge crossings.
- The ECoW will be present on-site during works for the construction of the overflow to the Translocated Marshland Area.
- The EnCoW will undertake visual inspection and monitoring (pH, electrical conductivity, turbidity, suspended solids and hydrocarbons) prior to, during and post overflow, headwall and bridge crossing construction works to ensure minimum disturbance of water quality in the receiving environment.
- The programme of water quality monitoring and locations of sampling will be agreed with SDCC in advance of construction works commencing. However it is anticipated that monitoring will be undertaken for a period of at least two months prior to works commencing and one-month post construction and during works as follows:
 - Twice weekly visits during general site works
 - Daily site visits during key construction activities (to be agreed between the environmental specialist, the appointed contractor and SDCC (e.g., during the construction of the translocated wetland, during installation of the proposed outfalls and stream crossings, during and immediately after clearance of on-site vegetation)).
 - Event inspection (e.g., following heavy rainfall events or during concrete pours).
- All monitoring data will be collated by the EnCoW to show trends for indicator parameters pH, conductivity, turbidity or suspended solids and hydrocarbons, and will be shared with SDCC as requested. Where a deterioration in water quality is observed downstream of the site this will be brought to the attention of the contractor by the Environmental / Ecological Clerk of Works, and any suitable contingency measures will be instigated.
- Inspection records and summary reports from site supervision by the ECoW and EnCoW will be made available to SDCC upon request.
- Inspections will be undertaken by the contractor's appointed Environmental Manager or delegate during excavations and other groundworks to ensure that measures are protective of water quality outlined in this EIAR are fully implemented and effective and are in compliance with the CEMP (DNV, 2025a) and that the requirements of the Conditions of Planning, the NIS and associated documentation are being adhered to during construction.
- All surface water control measures including silt traps, silt fences and settlement ponds will be checked regularly and maintained by the Environmental Manager or delegate as necessary, in order to ensure continued effectiveness throughout the construction phase.
- Only suitably trained staff will undertake environmental site inspections.

- Discharges of groundwater and/or water pumped from excavations to surface water or foul sewers will be monitored where required in accordance with statutory consents (i.e., discharge license). This may include sampling and laboratory analysis of treated water prior to discharge.
- Routine monitoring and inspections will be undertaken during refuelling, concrete works to ensure no impacts and compliance with avoidance, remedial and mitigation measures

7.10.2 Operational Phase

Ongoing regular operational monitoring and maintenance of drainage and the SuDS measures will be undertaken throughout the lifetime of the operational phase of the Proposed Development.

7.11 Interactions

7.11.1 Population and Human Health

An assessment of the potential effect of the Proposed Development on human health is included in Chapter 4 of this EIAR.

No public health issues associated with the water (hydrology and hydrogeology) conditions at the site have been identified for the construction phase or operational phase of the Proposed Development.

Appropriate industry standard and health and safety legislative requirements will be implemented during the construction phase that will be protective of site workers.

7.11.2 Biodiversity

An assessment of the potential impacts of the Proposed Development on the biodiversity of the site, with emphasis on habitats, flora and fauna which may be impacted, as is included in Chapter 5 of this EIAR, such as potential pollution of waterbodies impacting on flora and fauna in the absence of mitigation measures.

Chapter 5 of this EIAR addresses impacts of the Proposed Development on habitats and species, particularly those protected by national and international legislation or considered to be of particular conservation importance and proposes measures for the mitigation of these impacts.

7.11.3 Land, Soil and Geology

An assessment of the potential impact of the Proposed Development on the existing land, soils and geological environment during the construction phase and operational of the Proposed Development is set out in Chapter 6 of this EIAR. In the absence of avoidance and mitigation measures, there is a potential for sediments from excavated soils entering the drainage network and tracking downstream during the construction phase.

7.11.4 Material Assets – Waste and Utilities

An assessment of the potential impact of the Proposed Development on the material assets including built services and infrastructure has been set out in Chapter 13 of this EIAR.

During the construction phase of the Proposed Development, discharges of water to the public foul sewer will be in accordance with the necessary discharge licence issued by UE under Section 16 of the Local Government (Water Pollution) Acts and Regulations.

During the operation phase of the Proposed Development, any discharges to the public foul sewer and supplementary water supply to the Proposed Development will be under consent from UE.

7.12 Difficulties Encountered When Compiling

There were no difficulties encountered in the preparation of this chapter of the EIAR

7.13 Conclusion

Overall, taking into account the avoidance, remedial, and mitigation measures outlined in Section 7.7, the residual effects associated with both the construction and operational phases of the Proposed Development are considered imperceptible in terms of their impact on the receiving environment (hydrogeology). These effects are deemed non-significant within the context of the EIA Directive. Furthermore, no hydrological and hydrogeological-related constraints have been identified that would be expected to hinder or prevent the Proposed Development from proceeding as planned.

There will be no effect to water quality and the existing WFD Status of water bodies associated with the Proposed Development including the Kilcullen GWB, the Dublin GWB, the Camac_020 (i.e., the Corbally Stream, Coldwater Stream, Cooldown Stream) and Camac_030 taking account of embedded design avoidance and mitigation measures where required.

7.14 References

Council Directive 80/68/EEC, 1979. On the protection of groundwater against pollution caused by certain dangerous substances. Council of European Communities.

Council Directive 2006/118/EEC, 2006. On the protection of groundwater against pollution and deterioration. European Parliament and the Council of European Communities.

Construction Industry Research and Information Association, 2000. Environmental Handbook for Building and Civil Engineering Projects.

Construction Industry Research and Information Association, 2015. Environmental good practice on site guide (CIRIA - C741).

CIRIA (Construction Industry Research and Information Association), 2001. Control of water pollution from construction sites – guide to good practice, (CIRIA 532)

Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy.

Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC.

DNV, 2025. Construction Environmental Management Plan.

DNV, 2025. Hydrogeological Risk Assessment.

DNV, 2025. Resource and Waste Management Plan.

Environmental Protection Agency, 2025. EPA Envision Maps. <https://gis.epa.ie/EPAMaps/Water>. Consulted in November 2025.

Gannon & Associates Landscape Architecture, 2025. Marsh Translocation Report.

Geological Survey of Ireland, 2025. GSI webmapping, 2025. <https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228>. Consulted in November 2025.

Geological Survey of Ireland, 2017. A Description of Irish Aquifer Categories.

Geological Survey of Ireland, 2025. Groundwater Body Reports, Kilcullen GWB. Consulted in November 2025.

Geological Survey of Ireland, 2025. Groundwater Body Reports, Dublin GWB. Consulted in November 2025.

Google Earth Pro, 2025. Consulted in November 2025.

Kilgallen & Partners Consulting Engineers, 2025. Site Specific Flood Risk Assessment.

National Parks and Wildlife Services (NPWS) webmapping 2025. <https://dahg.maps.arcgis.com/apps/webappviewer/index.html?id=8f7060450de3485fa1c1085536d477ba>. Consulted in November 2025.

Ordnance Survey Ireland, 2025. Ordnance Survey Ireland webmapping <http://map.geohive.ie/mapviewer.html>. Consulted in November 2025.

Roger Mullarkey & Associates, 2025. Drainage and Water Infrastructure Engineering Report.

South Dublin County Council (SDCC, 2022). South Dublin County Development Plan 2022-2028.

Teagasc, 2025 webmapping. <http://gis.teagasc.ie/soils/map.php>. Consulted in November 2025.

Uisce Eireann, 2025. Ringsend WWTP (D0034-01) Annual Environmental Report 2023.

Water Framework Directive, 2025. Water Framework Directive web mapping - http://watermaps.wfdireland.ie/NsShare_Web/. Consulted in November 2025.