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Water Framework Directive Assessment

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The Governors of Saint
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Mental Health Services



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This report describes work commissioned by The Governors of Saint Patrick's Hospital, by an instruction dated 01/07/2025. The Client's representative for the contract was Robert O'Farrell. Alison Freeley of JBA Consulting carried out this work.

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Abbreviations

EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
GWB	Groundwater Body
RBMP	River Basin Management Plan
RWB	River Waterbody
SuDS	Sustainable Drainage Systems
WFD	Water Framework Directive

1 Introduction

1.1 WFD Overview

In accordance with section 37E of the Planning and Development Act 2000, as amended, The Governors of St. Patrick's Hospital, care of Tom Phillips + Associates, 80 Harcourt Street, Dublin 2, gives notice of its intention to make an application to An Coimisiún Pleanála for permission for a period of 10 no. years for the development of the new mental health hospital facility and all ancillary site development, site services, utilities and landscaping works ("the proposed development"), all at the c. 8.10 Ha site, located at St Edmundsbury Hospital, Lucan Road, Lucan, Co. Dublin, K78 NW63 (Protected Structures: RPS Ref Nos. 003, 008, 012, 013.) The cumulative area of all proposed new and refurbished buildings is c. 19,251.90 sqm. Associated site development works will include the provision of 8,524 sqm public open space facilities, including public walking and cycling facilities.

The Water Framework Directive (WFD) is the most substantial piece of EU water legislation to date. The Directive imposes legal requirements to protect and improve the water environment. All activities in the water environment need to take the Directive into account. The EU Water Framework Directive was transposed into law in Ireland by S.I. No. 722/2003 - European Communities (Water Policy) Regulations 2003, with later elements in the European Communities (Surface Waters) Regulations 2009. Section 4 of the Surface Water Regulations sets out the duties of public authorities with regard to the Water Framework Directive. In particular, a public authority, in performing its functions, will ensure that surface water bodies comply with the relevant environmental quality standards. Also, a public authority shall not undertake its functions in a manner that knowingly causes or allows deterioration in the status or ecological potential of a surface waterbody. Section 7 of the Surface Water Regulations lays out the duties of public authorities with regard to emission limits.

The Directive operates in six-year cycles: the 1st Cycle ran between 2009 and 2015, and the 2nd Cycle between 2016 and 2021. Ireland published its 3rd Cycle River Basin Management Plan ("RBMP"), in September 2024 covering the period from 2022 to 2027. The programme encompasses a total of 4,842 surface and groundwater bodies, rivers account for 66% of all waterbodies, followed by lakes (17%), groundwater (11%), transitional waterbodies (4%), coastal waterbodies (2%) and canals (>1%). Specifically, this includes 3,192 river water bodies, 812 lakes, 514 groundwater bodies 196 transitional waters, 112 coastal waters and 16 canals¹.

¹ Government of Ireland (2024) Water Action Plan 2024: A River Basin Management Plan for Ireland. Ireland: Department of Housing, Local Government and Heritage. Available from: <https://assets.gov.ie/static/documents/water-action-plan-2024.pdf> [Accessed 3 July 2025].

The RBMP is managed by the Environmental Protection Agency in collaboration with the Marine Institute, Inland Fisheries Ireland, Waterways Ireland, and the National Parks and Wildlife Service. The most recent characterisation assessment indicates that 1,983 water bodies, representing 41% of the total number of waterbodies, are classified as "Not at Risk" and currently meet their environmental objectives of achieving good or high status. In contrast, 1,603 water bodies (26%) are identified as "At Risk" due to significant pressures that may prevent them from meeting these objectives. Additionally, 1,256 water bodies, accounting for 26%, are currently under review to determine their risk status¹.

All identified WFD waterbodies in the vicinity of the proposed development have been assigned a status by the Environmental Protection Agency (EPA).

1.1.1 Scope of the WFD Assessment

The European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003) require that Environmental Objectives be set for all surface and ground waters in Ireland to enable them to achieve Good Status (or Good Ecological Potential for Heavily Modified and Artificial Waterbodies) by a defined date. These Environmental Objectives for surface waterbodies include the following:

- To prevent deterioration of the status of surface waters;
- To protect, enhance and restore surface waters, with the aim of achieving good status (ecological and chemical) for all WFD waterbodies;
- To protect and enhance heavily modified waterbodies and artificial waterbodies in order to achieve good ecological potential and good chemical status for those waterbodies;
- To progressively reduce pollution from priority substances and cease or phase out emissions, discharges and losses of priority hazardous substances into surface waters.

1.1.2 Preventing Deterioration in Status

A WFD assessment should expressly make the conclusions required in the WFD that neither a deterioration in status nor a jeopardization of the attainment of good water status will occur.

Any activity which has the potential to have an impact on the ecology of a waterbody will need consideration in terms of whether it could cause deterioration in its Ecological Status or Potential. The assessments will provide a detailed appraisal of the potential impacts of the proposed measures on waterbody hydromorphology and status and, where necessary, a detailed appraisal under Article 4(7) of the WFD (derogation related to deterioration caused by new modifications)¹.

For each waterbody, three different status objectives are identified within the RBMP. These are the overall status objective, the ecological status or potential objective and the chemical status objective. A default objective for all WFD waterbodies is to prevent the deterioration in the Ecological Status (or Ecological Potential for Heavily Modified and Artificial

Waterbodies) of the waterbody. Note, the Ecological Status applies only to surface water bodies, and not groundwater bodies. A separate assessment may be required to assess the impacts on the chemical and quantitative status of a groundwater body, if the proposed activity is likely to cause impact.

The Ecological Status of a waterbody is determined through analysis of its constituent Biological Quality Elements. These elements are in turn supported by a series of Physico-Chemical and Hydromorphological Quality Elements. These Quality Elements are taken from Annex V of the WFD Regulations and are listed below. The overall Ecological Status is determined by the lowest element status.

The Biological Quality Elements assessed in the WFD include:

- Fish
- Benthic Invertebrates
- Macrophytes
- Phytobenthos
- Phytoplankton

The WFD defines the flow, shape and physical characteristics of a watercourse as its 'hydromorphology'. Any in-channel works can impact upon the shape of a watercourse and the natural processes that occur within it, including:

- Flow patterns
- Width and depth of a channel
- Features such as pools, riffles (shallow parts of a stream), bars and bank slopes
- Sediment availability/ transport
- Interaction between a channel and its floodplain
- Ecology and biology (i.e., habitats which support plants and animals).

The WFD considers the chemistry of a watercourse through general water quality (physico-chemical measurements) and chemical pollutants. All three environmental components; morphology, hydrology and chemistry, support the overall biology of a waterbody.

Any activity that has the potential to have an impact upon any of the Quality Elements will need consideration in terms of whether it could cause a deterioration in the status of a waterbody. The activity will also need to be considered in terms of whether it will compromise the ability of the waterbody to reach "Good" Ecological Status or "Good" Ecological Potential by 2027 at the latest.

Any adverse impacts can cause a waterbody's ecology to deteriorate and prevent environmental improvements from being undertaken. Nevertheless, in-channel works can also be beneficial if they can be designed to help achieve environmental improvements included in the RBMP, thus enhancing the water environment for plants and animals.

1.1.3 Artificial or Heavily Modified Waterbodies

Whilst "Good" Ecological Status is defined as a slight variation from undisturbed natural conditions in natural waterbodies, artificial and heavily modified waterbodies are unable to

achieve natural conditions. Instead, artificial and heavily modified waterbodies have a target to achieve "Good" Ecological Potential, which recognises their important uses, whilst making sure ecology is protected as far as possible. Ecological potential is also measured on the scale "High", "Good", "Moderate", "Poor" and "Bad". The chemical status of these waterbodies is measured in the same way as for natural waterbodies.

Specific mitigation measures have been identified for each Artificial and Heavily Modified Waterbody and are listed in the RBMP. These mitigation measures are necessary to reduce the existing hydromorphological impacts on the waterbody and all measures need to be in place in order for the waterbody to achieve Good Ecological Status or Potential.

1.1.4 Protected Areas

The WFD specifies that areas requiring special protection under other retained EC Directive and waters used for the abstraction of drinking water are identified as protected areas. These areas have their own objectives and standards. Article 4 of the WFD requires Member States to achieve compliance with the standards and objectives set for each protected area by 22nd December 2015, unless otherwise specified in the legislation under which the protected area was established. The date by which compliance must be reached has been extended to 2027 at the latest.

These protected areas under the WFD include:

- Drinking water protected areas
- Nutrient sensitive areas
- Salmonid rivers
- Shellfish classified areas
- Bathing water areas.

1.2 Purpose of this WFD Assessment

JBA Consulting Engineers and Scientists Ltd. (hereafter JBA) has been commissioned by St Patrick's Mental Health Services to prepare a WFD Assessment Report for the proposed development and expansion of St Edmundsbury Hospital located in Lucan, Co. Dublin.

The proposed development comprises a mental health facility on the site of St Edmundsbury Hospital. A full description of the proposed development is provided in Chapter 2: Description of Proposed Development of the Environmental Impact Assessment Report (EIAR) submitted with the application.

This WFD assessment aims to determine the effects of the proposed development on ecological, hydromorphological and chemical quality and identify any potential impacts that could cause deterioration in the current status of the waterbody or could hinder the waterbody from meeting its WFD objectives in the future. The assessment will determine whether the conclusions required in the WFD, that neither a deterioration in status nor compromising the achievement of the attainment of "Good" water status will occur, apply for the proposed development.

The site is situated within the Liffey and Dublin Bay WFD catchment (see Figure 3-1).

The Environmental Objectives, together with any specific actions (mitigation measures) necessary to enable the waterbody to meet these objectives, are set out in the RBMP for Ireland (2018-2021) and the EPA Interactive GIS mapping website.

2 Assessment Methodology

2.1 Overview

The following flow chart, from the Common Implementation Strategy for the Water Framework Directive and the Floods Directive (CIS Guidance Document No. 36) summarises the WFD Assessment process.

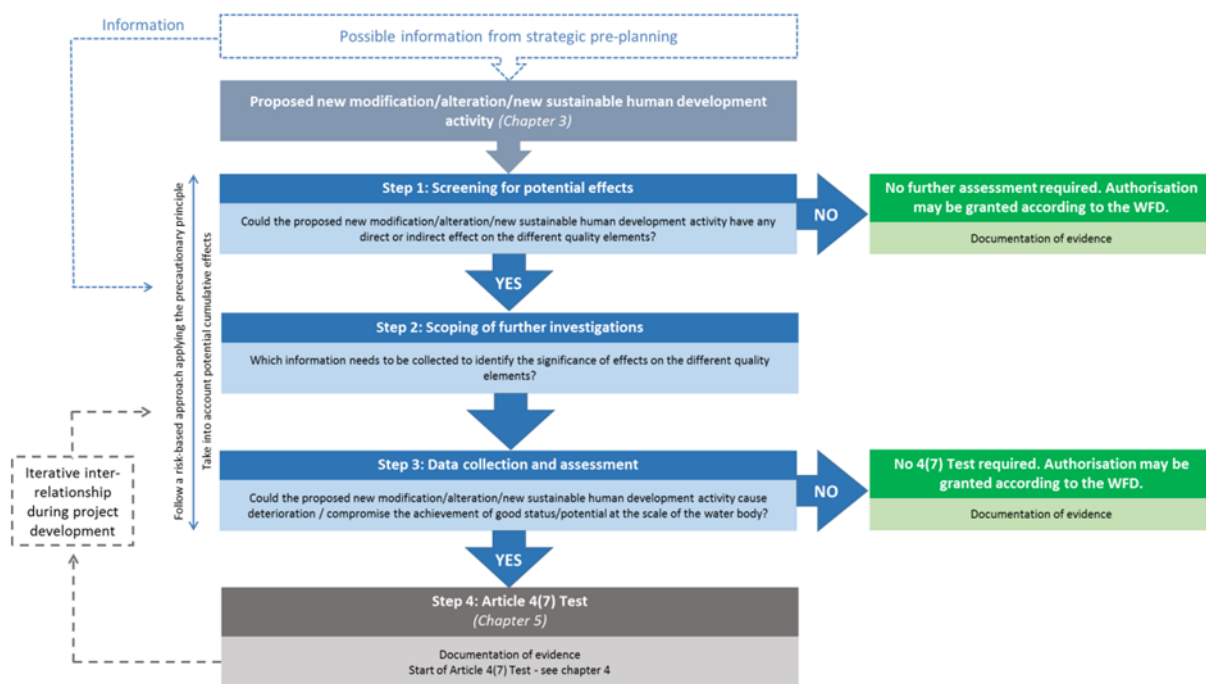


Figure 2-1: WFD assessment process (Source: CIS Guidance Document No. 36)

2.2 Stage 1: Screening Assessment

The purpose of the screening stage is to identify potential for impacts of the proposed development on relevant WFD waterbodies, i.e., whether it will contribute to deterioration of status; or jeopardise the waterbody achieving "Good" status in the future. The Screening Assessment aims to exclude any activities that do not need to go through the scoping or WFD impact assessment stages. Screening takes place in 4 steps:

- Step 1 – Description of the nature of the project, site, and locality
- Step 2 – Identification of relevant WFD waterbodies and their status
- Step 3 – Use of Source-Pathway-Receptor method to infer hydraulic linkages between the project and the relevant WFD waterbodies
- Step 4 – Screening statement.

The EPA's WFD waterbody geographic data files (shapefiles) were used to determine which WFD waterbodies could be potentially affected by the proposed works. The names, ID numbers, designation, status classification and objectives for all relevant WFD

waterbodies were obtained and downloaded from the EPA catchments website (www.catchments.ie).

The initial stage of the assessment screens the proposed works against the Ecological and Chemical Status objectives for the WFD waterbodies potentially affected by the works, together with their Quality Elements. The aim of this process is to determine whether the works could have an impact upon any of these criteria. Those criteria for which no potential adverse effects are identified are not considered further in the assessment. Any potential adverse effects are screened into the assessment and are carried forward to a detailed assessment.

The Source-Pathway-Receptor method is used in the screening assessment. This first considers any potential sources of impacts, i.e., the proposed development and its associated activities. Pathways from these sources are then considered, such as surface water pathways or groundwater pathways. The receptors are then the sites or waterbodies which could be impacted.

2.3 Stage 2: Scoping Assessment

A detailed assessment is then undertaken to determine the effects that the proposed works could have upon those Quality Elements screened into the assessment. Any impacts identified are then considered in relation to the Ecological Status of the waterbody, which comprises biology, hydrology, hydromorphology and water chemistry. The purpose of the Scoping stage is to determine how the development could affect each WFD Quality Element (i.e., Biological, Hydromorphological, Chemical). Scoping should include an initial assessment to determine which WFD waterbodies, and their quality elements are at risk; and identification of WFD waterbodies where detailed assessment is required.

The following quality elements shown in the table below will be assessed during the scoping assessment.

Table 2-1: Water quality elements

Quality Element	Sub-Category	Individual Elements Assessed
Biological Elements	Aquatic flora (macrophytes and phytobenthos)	Taxonomic composition Abundance
	Benthic invertebrate fauna	Taxonomic composition Abundance Level of diversity Ratio of disturbance sensitive taxa to insensitive taxa
	Fish	Species composition Abundance Type-specific disturbance-sensitive species present Age structure

Quality Element	Sub-Category	Individual Elements Assessed
	Phytoplankton	Taxonomic composition Abundance Planktonic bloom status
Hydromorphological	Hydrological regime	Quantity and dynamics of water flow Connection to groundwater bodies
	River continuity	Lateral connectivity Longitudinal connectivity
	Morphological conditions	River depth and width variation Structure and substrate of the riverbed Structure of the riparian zone
Physico-chemical elements	General	Thermal conditions Oxygenation conditions Salinity Acidification status Nutrient conditions
	Specific pollutants	Pollution by all priority substances identified as being discharged into the body of water Pollution by other substances identified as being discharged in significant quantities into the body of water

2.4 Stage 3: WFD Impact Assessment

The third stage of the WFD Assessment, if determined as necessary from the Screening and Scoping Assessments, is to undertake a WFD Impact Assessment to consider the impacts of the proposed scheme in more detail and recommend necessary mitigation measures. An impact assessment must be carried out for each receptor identified during scoping as being at risk from your activity.

The Stage 3 assessment process is focused on assessing the potential for the proposed development to impact on the objectives of the WFD and the RBMP. The assessment shows how any impact on WFD receptor caused by the proposed activity fits with the objectives of any affected WFD waterbodies. After the works have been amended to try and avoid, minimise, mitigate or compensate for the risks to WFD receptors the following questions will need to be answered:

- Could the activity still cause a waterbody to deteriorate from one WFD status class to another or cause significant localised impacts that could contribute to this happening?
- Could the activity prevent or undermine action to get waterbodies to good status?

When these questions are answered, the following should be borne in mind:

- A waterbody deteriorates in status when one WFD receptor (an "element") is affected such that it drops from one WFD status class to another.
- A significant localised impact on an element is one that is either long-lasting; causes severe harm; or affects a wide area within a waterbody. These are likely to contribute to a waterbody dropping from one status to another and highly likely to prevent action to get waterbodies to good status.
- Elements at high status are very sensitive. The assessment will need to demonstrate that there will be a negligible impact on those aspects of the water environment
- Elements at bad status must not be made worse.

The assessment is undertaken in 2 steps:

Step 1: Detailed assessment. For each quality element it must be shown that the activities scoped into the assessment will not cause deterioration in status nor prevent the achievement of WFD status objectives. This must include:

- A description of the proposed development
- Baseline characteristics and conditions for each identified waterbody
- Methodology used to identify WFD impacts
- Risk of impact to WFD waterbodies
- Any specific mitigation required
- Enhancement measures or positive contributions that the project will provide

Step 2: Findings. The findings should be set out in a WFD Assessment Report.

If it cannot be demonstrated with a high level of confidence that the activity supports RBMP objectives, then in order for the Competent Authority to permit the activity it must be shown that the activity meets the criteria set out in Article 4(7) of the WFD. Article 4(7) sets out stringent environmental and socio-economic tests to assess if a scheme meets strict environmental and sustainability criteria.

2.5 Stage 4: Article 4(7) Test

If the Competent Authority concludes the proposed development will not cause or contribute to deterioration of status; or jeopardise the waterbody achieving good status, planning permission may be granted, subject to meeting other relevant planning / legal requirements.

If Article 4(7) has been triggered, the WFD assessment process must provide justification for the following tests:

- Test (a) - all practicable steps are taken to mitigate the adverse impact on the status of the body of water;
- Test (b) - the reasons for those modifications or alterations are specifically set out and explained in the river basin management plan required under Article 13 and the objectives are reviewed every six years;

- Test (c) - the reasons for those modifications or alterations are of overriding public interest and/or the benefits to the environment and to society of achieving the objectives set out in paragraph 1 (of Article 4(7)) are outweighed by the benefits of the new modifications or alterations to human health, to the maintenance of human safety or to sustainable development; and
- Test (d) - the beneficial objectives served by those modifications or alterations of the waterbody cannot for reasons of technical feasibility or disproportionate cost be achieved by other means, which are a significantly better environmental option.

3 Stage 1: Screening

This screening assessment aims to screen in any works that require WFD Assessment and to identify which WFD waterbodies are within and near to the proposed works.

- Step 1 – Description of the nature of the project, site, and locality
- Step 2 – Identification of relevant WFD waterbodies and their status
- Step 3 – Use of Source-Pathway-Receptor method to infer hydraulic linkages between the project and the relevant WFD waterbodies
- Step 4 – Screening statement.

The results of the screening assessment are presented below. The baseline status of the Quality Elements within the WFD waterbodies screened into the assessment are discussed in this chapter. As discussed in the Introduction and Methodology, if this section finds there is potential for the proposed works to cause deterioration in the status of a WFD waterbody, or prevent it from achieving its status objectives, the relevant waterbody and its Quality Elements should be taken forward and consider further in the Scoping Assessment chapter.

3.1 Project Overview

The proposed development comprises the demolition of an existing single storey 52 no. bed psychiatric ward (c. 1,633.00 sq m), located to the south-west of St. Edmundsbury House (RPS 003), and the construction of a single storey 14 no. bedroom in-patient adolescent mental health facility (c. 1,857.10 sq m) in its place, with façade remediation where the former building connected to St. Edmundsbury House; The demolition of 1 no. storey existing shed (c. 17.90 sq m) to the north-west of St. Edmundsbury House and replacement with 1 no. ESB substation unit building (c. 23.60 sq m). The proposed development includes a new 200 no. bed adult inpatient facility ranging from one to two storeys in height and a total floor area of c. 16,283.20sq m, with screened plant at roof level. It will be located within the existing walled garden area (RPS 012) and will incorporate the historic walls and bell tower structures (RPS 013.) The facility will be arranged as a single continuous block comprising 7 no. In-patient wards. The form of the building will create 10 no. new internal courtyards at ground floor & 2 no. terraces at first floor (c. 3696.00 sqm in total); with c. 62lin.m of the north garden wall to be demolished and this stone reincorporated into the proposed hospital structures.

The proposed development also includes for the alteration, refurbishment and conversion of the existing structures within the historic farmyard enclosure (RPS 008), including: coach house building (c. 312.95 sq m) to provide a new consultancy suite (c. 599.50 sq m), including c. 71.5 sq m café; Alteration, conversion and refurbishment of existing barn (c. 183.65 sq m) to form a maintenance facility building and associated offices (c. 374.00 sqm); The demolition of an existing contemporary shed within the historic farm yard (c. 163.75 sq m) and construction of a new single storey energy centre building (c. 114.50 sq m), within the historic farmyard enclosure. In total, c. 210.80 sq m of structures are

required to be demolished within the walled garden and farmyard enclosure areas to facilitate the proposed development.

The proposed development also includes the removal and relocation of the existing southern boundary wall to Lucan Road (c. 190lin.m) (Regional Road Number Ref. R835) set back from the existing boundary to facilitate the future junction improvement works to the Lucan Road and Chapel Hill Junction. The junction upgrade works do not form part of this application and will be carried out by South Dublin County Council. The proposed development also comprises the demolition of the existing 2 no. Dean Clinic buildings (single storey and single storey with dormer level) at the existing entrance to the site via the Lucan Road (c. 221.15 sq m and c. 60 sq m respectively) to facilitate the construction of revised access arrangements and widening of the access to the Lucan Road.

The new mental health facility will provide adult and adolescent in-patient service rooms; Adult and adolescent day services rooms; Patient care services rooms; Patient pharmacy; Laboratories; Staff and patient canteen facilities; Consultant and hospital administration accommodation; Staff welfare facilities; Reconfigured and additional new car and cycle parking facilities (with revised total of 214 no. car parking spaces, 2 no. bus parking spaces and 160 no. secure cycle parking spaces); Signage and wayfinding.

The proposed development also includes private and secure patient gardens (c. 9,982 sq m); Plant and associated tanks; Public lighting; All piped infrastructure and ducting and redirection works; Tree removal, including tree removal within the Proposed Liffey Valley Natural Heritage Area (pNHA - 000128); Redirection and undergrounding of existing overhead power lines from the Lucan East 38KV Substation to the existing hospital facility; Controlled access barriers; 2 no. Secure cycle parking stores total c. 107.10 sq m; EV charging facilities; 2 no. Attenuation tanks; Rainwater harvesting tanks; PVs; SUDs including extensive green roof provision; Boundary treatments, including new boundary treatments and the repair and refurbishment of existing stone boundary walls; Waste marshalling compound storage area; Changes in level and retaining walls; Internal roads and paths, including vehicle set down areas; Site clearance works; Services provision and related ducting, piping and cabling; and all associated site development and excavation works above and below ground. Upon completion, the mental health facility will cumulatively provide 214 no. inpatient beds across the campus, including existing and proposed inpatient beds.

3.2 Location

The site and screened surface and groundwater waterbodies are shown in Figure 3-1 and Figure 3-2. An initial buffer distance of 5km for surface waterbodies was considered appropriate given the size, location and nature of the proposed development. However, other waterbodies which are outside of this buffer but are downstream of the proposed development will be examined, if deemed necessary.

The site is located approx. 80m east of the main body of the River Liffey. The Griffeen River, a tributary of the Liffey, converges with the main river approx. 650m upstream of the proposed development.

Groundwater bodies within 2km of the proposed development are examined, based on guidance from the Institute of Geologists of Ireland, which states that a buffer area of 2km for groundwater bodies should be used².

² Institute of Geologists of Ireland (2013) Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements

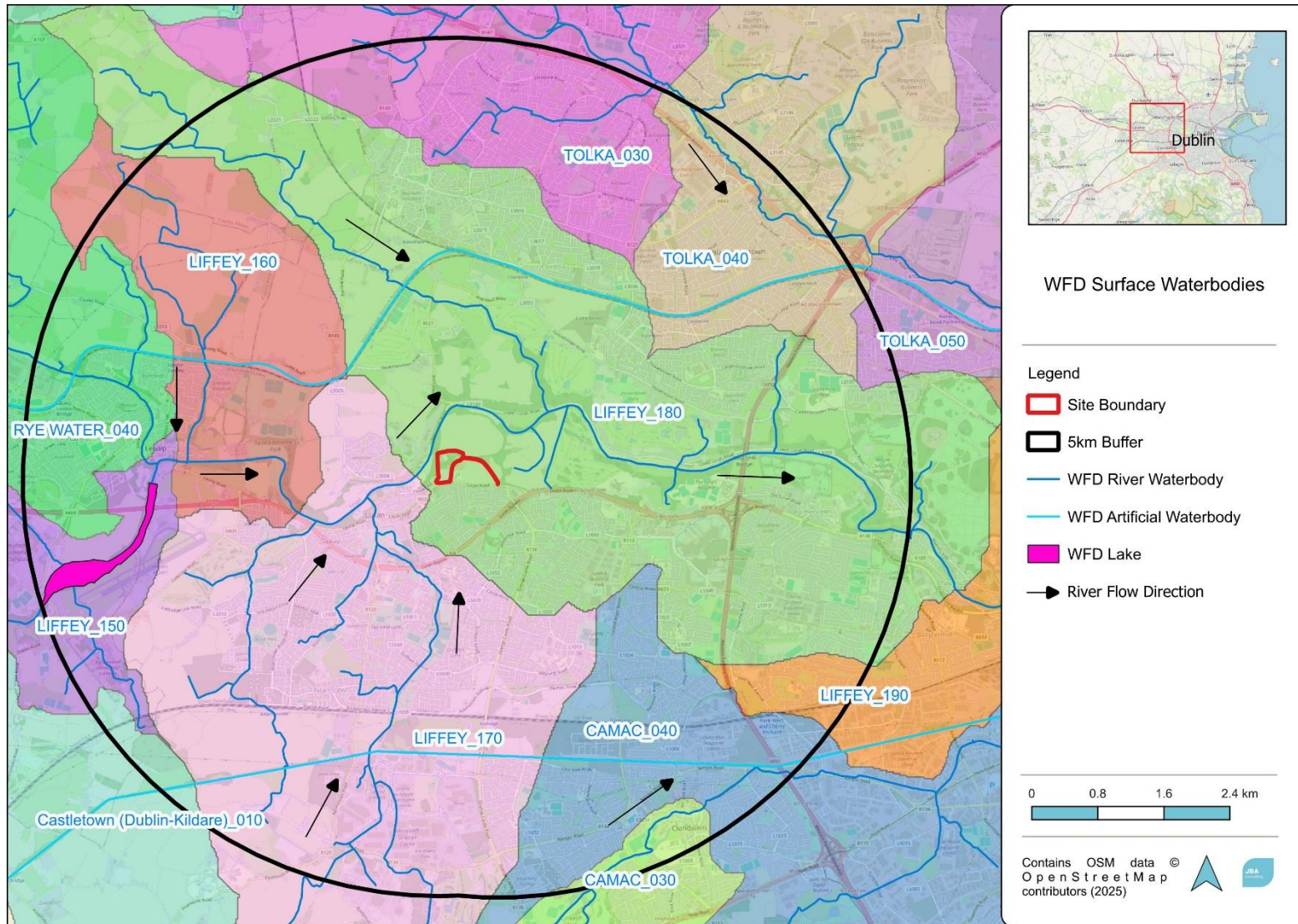


Figure 3-1: WFD Surface Waterbodies

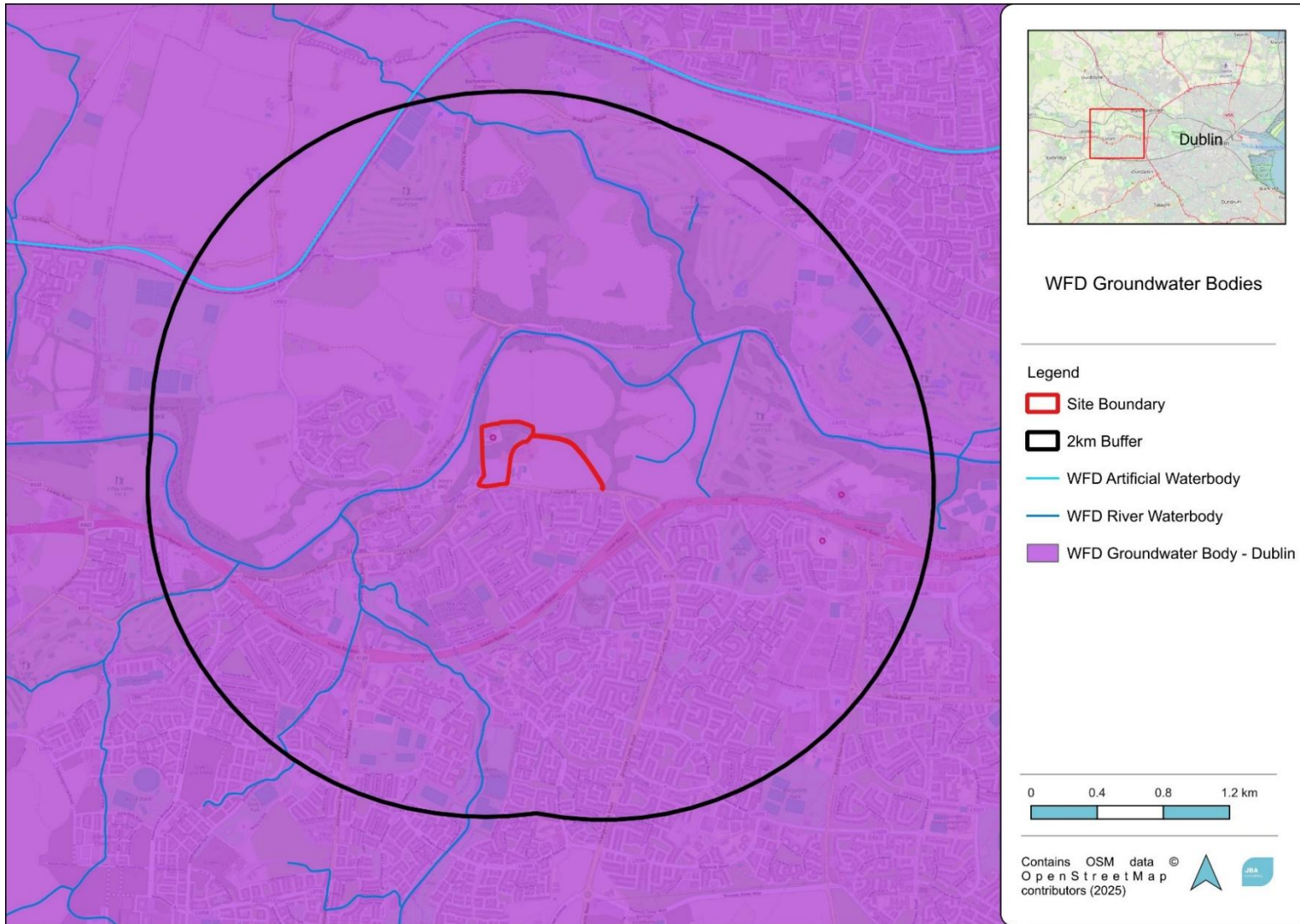


Figure 3-2: WFD Groundwater Bodies

3.2.1 Description of Proposed Works

The characteristics of the proposed development are described in detail in Chapter 2: Description of Proposed Development of the EIAR. A summary of the activities associated with the construction of the development is described in Table 3-1.

3.2.1.1 Environmental Impact Assessment Report

An EIAR was prepared for the proposed development. Chapter 6 of the EIAR deals with water. Chapter 6 includes a full assessment of the existing surface and groundwater environments, identification of potential impacts, mitigation measures, and an assessment of residual effects following the implementation of the mitigation measures.

The mitigation measures outlined in the EIAR Chapter 6 include surface water drainage, silt and sediment control, and avoidance and management of potential spills and leaks. The mitigation measures outlined in the EIAR are taken into account in this WFD Assessment.

The EIAR concluded that the residual effects during construction will be imperceptible over the short-term, and imperceptible during the operational phase.

3.2.1.2 Utilities

As part of the development, storm and foul sewers are to be installed around the perimeter of the building, following the route of the access road along the eastern boundary adjacent to St. Andrews School. These will connect to the existing storm and foul sewer networks at the R835 (Lucan Road). The foul sewer is proposed to originate at the northern wall of the building, while the storm sewer will begin at the eastern wall. Wastewater discharge will be facilitated through a connection to the foul sewer network at the R835 (Lucan Road).

Stormwater management will be facilitated by Stormtech MC3500 detention/attenuation tanks located beneath each car park. A bio-retention area is also proposed between the carparks, adjacent to the western access road leading to St Edmundsbury Hospital and the main building. In addition, green roofs and permeable pavements will be incorporated into the development as further Sustainable Drainage Systems (SuDS), which have been designed in accordance with the Greater Dublin Strategic Drainage Strategy guidelines³.

3.2.2 Proposed Activities

Table 3-1: Activities associated with the proposed development

Activity Reference	Stage	Activity	Description
C1	Construction	Site clearance and preparation	Perimeter fencing will be erected, site compound, welfare areas, and storage areas established Clearance of waste and vegetation for

³ Greater Dublin Local Authorities (2005) *Greater Dublin Regional Code of Practice for Drainage Works*

Activity Reference	Stage	Activity	Description
			removal. Drainage and service diversions.
C2	Construction	Below ground construction	Excavation for drainage infrastructure and services Construction of building foundations
C3	Construction	Above ground construction	Construction of building
C4	Construction	Hard and soft landscaping	External finishes, paving, road surfaces, street furniture and soft landscaping
O1	Operation	Surface water runoff/discharge	Surface water drainage includes hydrocarbon interceptors, SuDS measures, attenuation, and flow control device for discharge.
O2	Operation	Wastewater discharge	Wastewater will discharge from the site via the new proposed foul sewer as described in Section 3.2.1.2 above

3.3 WFD Waterbodies

WFD waterbodies in proximity to the proposed development are summarised in Table 3-2 and shown in Figure 3-1 and Figure 3-2 above. WFD surface waterbodies greater than 5km from the proposed development and WFD groundwater bodies greater than 2km from the proposed development have not been considered at this stage, as outlined in Section 3.2 above. Following the Scoping stage, if impacts are considered likely on any waterbodies, then additional waterbodies downstream of these will be considered.

Table 3-2: WFD waterbodies in proximity to the proposed development

Waterbody Name	Type	WFD Status	High Status Objective
CAMAC_030	River	Poor	No
CAMAC_040	River	Poor	No
Castletown (Dublin-Kildare)_010	River	Poor	No
LIFFEY_150	River	Good	No
LIFFEY_160	River	Poor	No
LIFFEY_170	River	Poor	No
LIFFEY_180	River	Poor	No
LIFFEY_190	River	Poor	No
RYE WATER_040	River	Moderate	No
TOLKA_030	River	Poor	No
TOLKA_040	River	Poor	No

Waterbody Name	Type	WFD Status	High Status Objective
TOLKA_050	River	Poor	No
Grand Canal Main Line (Liffey and Dublin Bay)	Artificial	Good	No
Royal Canal Main Line (Liffey and Dublin Bay)	Artificial	Good	No
Leixlip Reservoir	Lake	Good	No
Dublin	Groundwater	Good	No

3.4 Source-Pathway-Receptor Model

Table 3-3 below indicates which WFD waterbodies have been screened in or out of the assessment and the reasons for this decision. These WFD waterbodies which have been screened in are shown in Figure 3-3 and **Error! Reference source not found.**. The WFD waterbodies which are not hydrologically linked, and therefore screened out, are shown in Figure 3-5.

Table 3-3: Screening outcome for previously identified WFD waterbodies in the study area (bold are screened in)

Waterbody Name	Type	Hydrological Linkage	Screening Outcome
CAMAC_030	River	Waterbody is not hydrologically linked, the proposed development is not likely to result in impacts to this waterbody	Screened out
CAMAC_040	River	Waterbody is not hydrologically linked, the proposed development is not likely to result in impacts to this waterbody	Screened out
Castletown (Dublin-Kildare)_010	River	Waterbody is not hydrologically linked; the proposed development is not likely to result in impacts to this waterbody	Screened out
LIFFEY_150	River	Waterbody is upstream of proposed works and therefore not hydrologically linked	Screened out
LIFFEY_160	River	Waterbody is upstream of proposed works and therefore not hydrologically linked	Screened out
LIFFEY_170	River	Waterbody is adjacent to proposed development	Screened in
LIFFEY_180	River	Waterbody is adjacent to proposed development	Screened in

Waterbody Name	Type	Hydrological Linkage	Screening Outcome
LIFFEY_190	River	Waterbody is downstream of proposed development	Screened in
RYE WATER_040	River	Waterbody is upstream of proposed works and therefore not hydrologically linked	Screened out
TOLKA_030	River	Waterbody is not hydrologically linked, the proposed development is not likely to result in impacts to this waterbody	Screened out
TOLKA_040	River	Waterbody is not hydrologically linked, the proposed development is not likely to result in impacts to this waterbody	Screened out
TOLKA_050	River	Waterbody is not hydrologically linked, the proposed development is not likely to result in impacts to this waterbody	Screened out
Grand Canal Main Line (Liffey and Dublin Bay)	Artificial	Waterbody is not hydrologically linked, the proposed development is not likely to result in impacts to this waterbody	Screened out
Royal Canal Main Line (Liffey and Dublin Bay)	Artificial	Waterbody is not hydrologically linked, the proposed development is not likely to result in impacts to this waterbody	Screened out
Leixlip Reservoir	Lake	Waterbody is upstream of proposed works and therefore not hydrologically linked	Screened out
Dublin	Groundwater	Construction works proposed within this groundwater body	Screened in

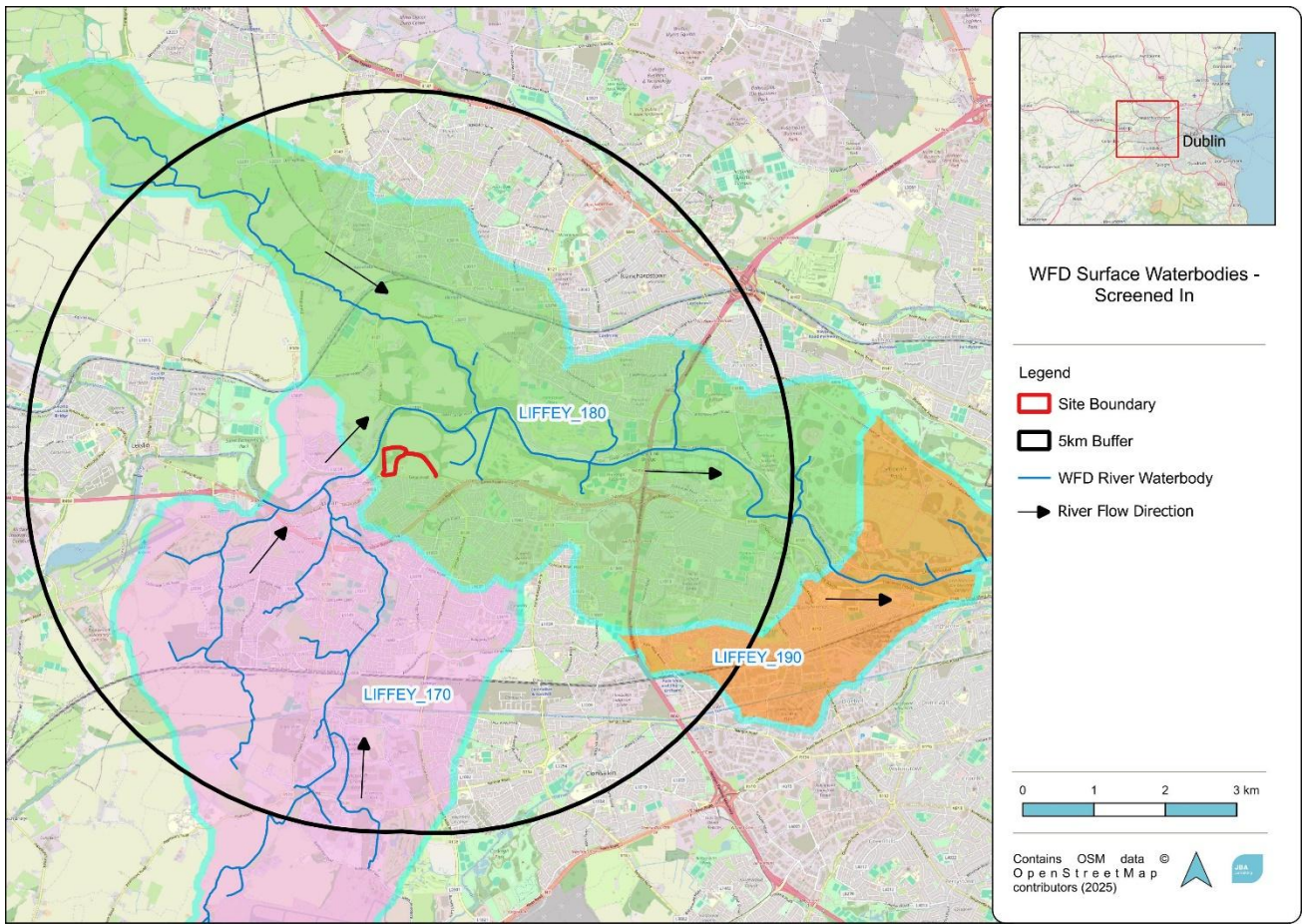


Figure 3-3: Screened in surface waterbodies

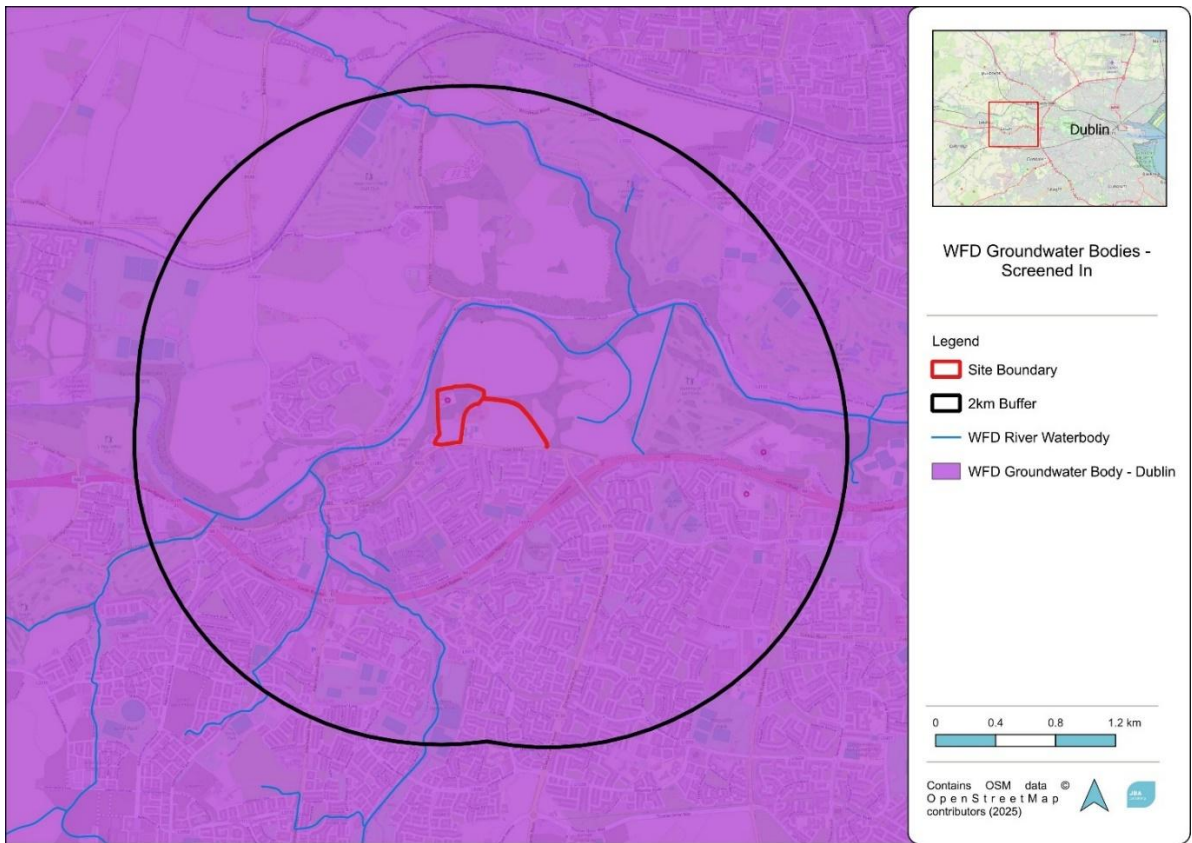


Figure 3-4: Screened in groundwater bodies

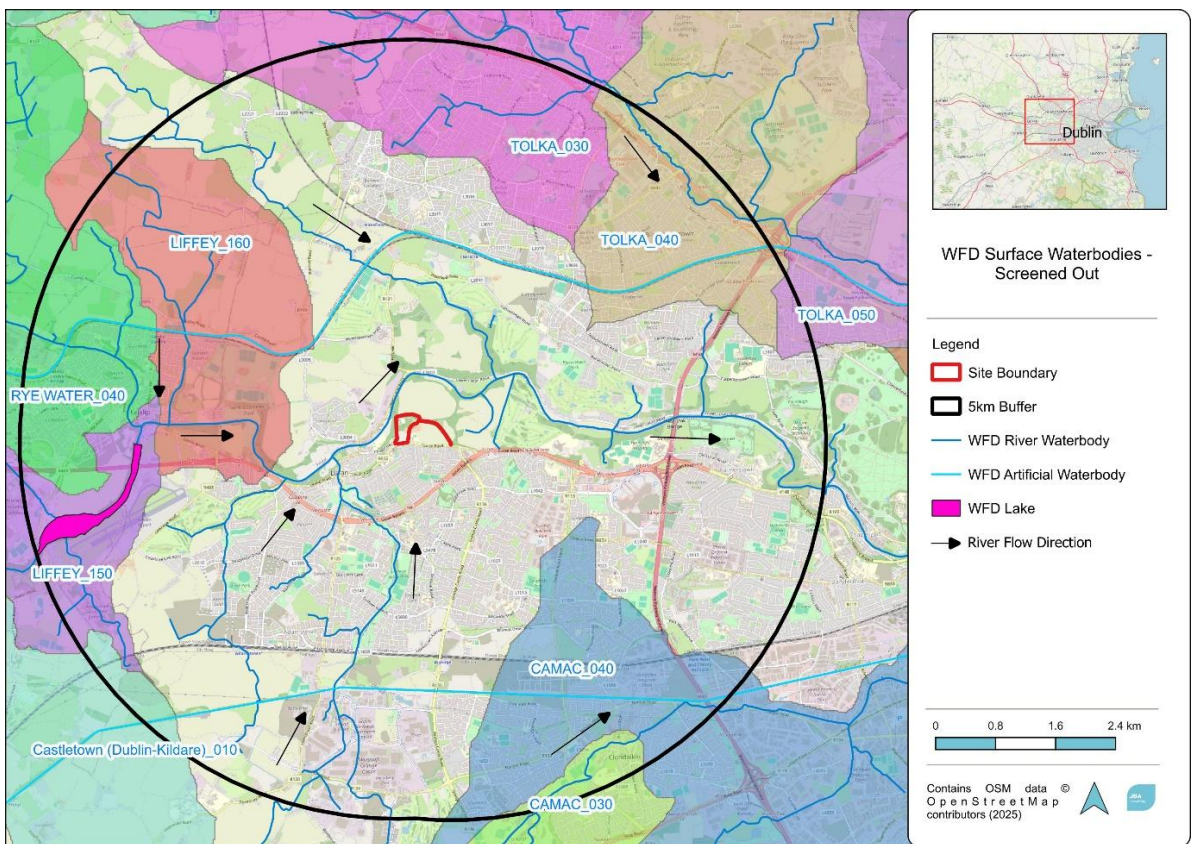


Figure 3-5: Screened out surface waterbodies

3.5 Screening Statement

The following WFD waterbodies are being brought forward into the detailed assessment (Stage 2 and Stage 3), as an impact on their quality elements is possible as a result of the proposed development:

River waterbodies (RWB):

- LIFFEY_170
- LIFFEY_180
- LIFFEY_190

Groundwater bodies (GWB):

- Dublin

4 WFD Scoping Assessment

4.1 Overview

This scoping assessment identifies whether the waterbody's receptors, identified during the screening assessment, are at risk from the proposed works discussed in Chapter 3. The proposed development works are being appraised in terms of their potential impact on WFD status and objectives, with account taken of the development's design and the assessment and proposed construction and operational measures outlined in the EIAR.

If any Quality Elements are found to be at risk of detrimental impact, further assessment and/or mitigation may be required.

Article 4.7 of the Directive protects against a deterioration in status or failure to meet WFD objectives resulting from new modifications or sustainable human development activities (if all conditions set out under this Article are met). If the assessment procedure predicts that an activity will cause deterioration in waterbody status or prevent a waterbody from meeting its ecological objectives, then an assessment is also required against the conditions listed in Article 4.7 of the WFD. If all the assessment conditions are met, there will not be a breach of the WFD, and compliance will be attained.

4.2 Scoping Assessment

For each waterbody screened into the assessment, details on the status of each element, as described by the EPA's interactive GIS data explorer are given below. A summary of the scoping assessment is shown in the following tables. Table 4-1 to Table 4-13 below describe the quality elements of the waterbody and potential impacts because of the proposed development, while Table 4-14 below summarises the findings of the scoping assessment for the waterbody.

4.2.1 LIFFEY_170 (RWB)

Table 4-1: Scoping of biological quality elements for LIFFEY_170

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
Aquatic flora (macrophytes and phytobenthos)	<ul style="list-style-type: none"> • Taxonomic composition • Abundance 	No	<p>No in-channel works or works along banks are proposed, so there will be no direct risk to aquatic flora habitats or species.</p> <p>Construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included in Chapter 6: Water of the EIAR will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for aquatic flora (macrophytes and phytobenthos).</p> <p>Operational phase impacts are not anticipated due to the design of the proposed development. The operational drainage design includes SuDS measures which will act to retain and filter surface water, through the use of attenuation areas in the form of; bio-retention systems and green roofs, as well as silt traps and hydrocarbon interceptors.</p>
Benthic invertebrate fauna	<ul style="list-style-type: none"> • Taxonomic composition • Abundance • Level of diversity 	No	<p>No in-channel works are proposed, so there will be no direct risk to benthic invertebrate fauna.</p> <p>Construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included in Chapter 6: Water of the EIAR will help to capture, control and reduce surface</p>

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
	<ul style="list-style-type: none"> Ratio of disturbance sensitive taxa to insensitive taxa 		<p>water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for benthic invertebrate fauna.</p> <p>Operational phase impacts are not anticipated due to the design of the proposed development. The operational drainage design includes SuDS measures which will act to retain and filter surface water, through the use of attenuation areas in the form of; bio-retention systems and green roofs, as well as silt traps and hydrocarbon interceptors.</p>
Fish	<ul style="list-style-type: none"> Species composition Abundance Type-specific disturbance-sensitive species present Age structure 	No	<p>No in-channel works or works along banks are proposed, so there will be no direct risk to fish habitats or species.</p> <p>Construction phase impacts are not anticipated due to the inclusion of design measures in the EIA. The measures included in Chapter 6: Water of the EIA will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for fish.</p> <p>Fish migration will not be at risk as a result of the proposed activities. Construction activities will be temporary and will not impact the waterbody directly, so do not pose a direct risk to fish.</p>

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
			Operational phase impacts are not anticipated due to the design of the proposed development. The operational drainage design includes SuDS measures which will act to retain and filter surface water, through the use of attenuation areas in the form of; bio-retention systems and green roofs, as well as silt traps and hydrocarbon interceptors.
Phytoplankton	<ul style="list-style-type: none"> • Taxonomic composition • Abundance • Planktonic bloom status 	No	<p>No in-channel works are proposed, so there will be no direct risk to phytoplankton.</p> <p>Construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included in Chapter 6: Water of the EIAR will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for phytoplankton.</p> <p>Operational phase impacts are not anticipated due to the design of the proposed development. The operational drainage design includes SuDS measures which will act to retain and filter surface water, through the use of attenuation areas in the form of; bio-retention systems and green roofs, as well as silt traps and hydrocarbon interceptors.</p>

Table 4-2: Scoping of hydromorphological quality elements for LIFFEY_170

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
Hydrological regime	<ul style="list-style-type: none"> Quantity and dynamics of water flow Connection to groundwater bodies 	No	<p>No works are proposed in or adjacent to the waterbody or its riverbank. Surface water generated on site from rainfall will be discharged initially to settlement tanks. A minor reduction in surface water runoff rates may occur, but this does not represent an impact to the overall hydrological regime given the small volumes of runoff from the site relative to the scale of the waterbody.</p> <p>No groundwater pumping is expected to occur. If groundwater is encountered during excavations, then mechanical pumps will be required to remove the groundwater from sumps.</p> <p>No operational impacts on groundwater are expected.</p>
River continuity	<ul style="list-style-type: none"> Lateral connectivity Longitudinal connectivity 	No	<p>No works are proposed in or adjacent to the waterbody or its riverbank, so there will be no resultant impact on river continuity.</p> <p>Operational phase impacts are not anticipated as the scheme does not require any interventions in the river channel itself, and so will not affect its connectivity.</p>
Morphological conditions	<ul style="list-style-type: none"> River depth and width variation Structure and substrate of riverbed 	No	<p>No works are proposed in or adjacent to the waterbody or its riverbank. Surface water generated on site from rainfall will be discharged initially to settlement tanks. Prior to discharge off-site, the surface water will pass through a treatment train consisting of silt traps and settlement tanks to remove suspended solids and hydrocarbons. As a result, there will be no impact on morphological conditions.</p> <p>Additionally, silt fencing will be installed strategically throughout</p>

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
	<ul style="list-style-type: none"> Structure of the riparian zone 		<p>the site, and drainage ditches will be added to intercept surface water where there is a risk of significant water flow into excavations, adjoining lands or the existing watercourse.</p> <p>Operational phase impacts are not anticipated as the scheme does not require any interventions in the river channel itself or its riparian zone, and so will not affect its connectivity.</p>

Table 4-3: Scoping of physico-chemical quality elements for LIFFEY_170

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
General	<ul style="list-style-type: none"> Thermal conditions Oxygenation conditions Salinity Acidification status Nutrient conditions 	No	<p>Without design measures in place, the construction phase could lead to the mobilisation of sediment in surface water draining to the River Liffey which could lead to a deterioration in status.</p> <p>Surface water generated on site from rainfall will be discharged initially to settlement tanks. Prior to discharge off-site, the surface water will pass through a treatment train consisting of silt traps and settlement tanks to remove suspended solids and hydrocarbons.</p> <p>Operational phase impacts are not anticipated due to the design of the proposed development. The operational drainage design includes SuDS measures which will act to retain and filter surface water, through the use of attenuation areas in the form of; bio-retention systems and green roofs, as well as silt traps and hydrocarbon interceptors.</p>

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
Specific pollutants	<ul style="list-style-type: none"> • Pollution by all priority substances identified as being discharged into the body of water • Pollution by other substances identified as being discharged in significant quantities into the body of water 	No	<p>Without mitigation measures in place, the construction phase could lead to the accidental spills of hydrocarbons (such as from construction vehicles) to surface water draining to the River Liffey.</p> <p>Without design measures in place, pollutants such as hydrocarbons from cars on-site could discharge to WFD waterbodies via the surface drainage infrastructure from the site. To manage this risk, rainwater collected on-site will first be directed to settlement tanks. Prior to discharge off-site, the surface water will pass through a treatment train consisting of silt traps and settlement tanks to remove suspended solids and hydrocarbons.</p>

Table 4-4: Scoping summary assessment for LIFFEY_170

Receptor	Potential Risk to Receptor?	Note the Risk Issue(s) for Impact Assessment	Further Assessment and/or Mitigation Required?
Hydromorphology quality	No	<p>No works are proposed in or adjacent to the waterbody or its riverbank, nor will there be direct discharges to the watercourse. No direct morphological impacts are therefore likely.</p> <p>Construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included Chapter 6: Water of the EIAR will help to capture, control and reduce surface water run-off, suspended solids</p>	No further assessment required.

Receptor	Potential Risk to Receptor?	Note the Risk Issue(s) for Impact Assessment	Further Assessment and/or Mitigation Required?
Biological quality	No	<p>and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact Hydromorphology quality.</p> <p>No in-channel works or works along banks are proposed, so there will be no direct risk to habitats or species.</p> <p>Fish migration will not be at risk as a result of the proposed activities.</p> <p>Construction activities could result in suspended solids or pollutants entering the watercourse from the site. However, these construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included in Chapter 6: Water of the EIAR will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact Biological quality.</p>	No further assessment required.
Physico-chemical quality	No	<p>There will be no long-term change to general chemical quality elements as a result of the proposed development. Construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included in Chapter 6: Water of the EIAR will help to capture, control and reduce surface water run-off, suspended solids</p>	No further assessment required.

Receptor	Potential Risk to Receptor?	Note the Risk Issue(s) for Impact Assessment	Further Assessment and/or Mitigation Required?
		and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact physico-chemical quality.	

4.2.2 LIFFEY_180 (RWB)

Table 4-5: Scoping of biological quality elements for LIFFEY_180

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
Aquatic flora (macrophytes and phytobenthos)	<ul style="list-style-type: none"> • Taxonomic composition • Abundance 	No	<p>No in-channel works or works along banks are proposed, so there will be no direct risk to aquatic flora habitats or species.</p> <p>Construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included in Chapter 6: Water of the EIAR will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for aquatic flora (macrophytes and phytobenthos).</p> <p>Operational phase impacts are not anticipated due to the design of the development. The operational drainage design includes SuDS measures which will act to retain and filter surface water, through the use of attenuation areas in the form of; bio-retention systems and green roofs, as well as silt traps and hydrocarbon interceptors.</p>

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
Benthic invertebrate fauna	<ul style="list-style-type: none"> • Taxonomic composition • Abundance • Level of diversity • Ratio of disturbance sensitive taxa to insensitive taxa 	No	<p>No in-channel works are proposed, so there will be no direct risk to benthic invertebrate fauna.</p> <p>Construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included in Chapter 6: Water of the EIAR will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for benthic invertebrate fauna</p> <p>Operational phase impacts are not anticipated due to the design of the proposed development. The operational drainage design includes SuDS measures which will act to retain and filter surface water, through the use of attenuation areas in the form of; bio-retention systems and green roofs, as well as silt traps and hydrocarbon interceptors.</p>
Fish	<ul style="list-style-type: none"> • Species composition • Abundance • Type-specific disturbance-sensitive species present 	No	<p>No in-channel works or works along banks are proposed, so there will be no direct risk to fish habitats or species.</p> <p>Construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included in Chapter 6 of the EIAR will help capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will break any pathway from site to the river, and/or remove potential source of contaminants that would impact habitat available for fish.</p>

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
	<ul style="list-style-type: none"> Age structure 		<p>Fish migration will not be at risk as a result of the proposed activities. Construction activities will be temporary and will not impact the waterbody directly, so do not pose a direct risk to fish.</p> <p>Operational phase impacts are not anticipated due to the design of the proposed development. The operational drainage design includes SuDS measures which will act to retain and filter surface water, through the use of attenuation areas in the form of; bio-retention systems and green roofs, as well as silt traps and hydrocarbon interceptors.</p>
Phytoplankton	<ul style="list-style-type: none"> Taxonomic composition Abundance Planktonic bloom status 	No	<p>No in-channel works are proposed, so there will be no direct risk to phytoplankton.</p> <p>Construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included in Chapter 6: Water of the EIAR will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for phytoplankton.</p> <p>Operational phase impacts are not anticipated due to the design of the proposed development. The operational drainage design includes SuDS measures which will act to retain and filter surface water, through the use of attenuation areas in the form of; bio-retention systems and green roofs, as well as silt traps and hydrocarbon interceptors.</p>

Table 4-6: Scoping of hydromorphological quality elements for LIFFEY_180

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
Hydrological regime	<ul style="list-style-type: none"> Quantity and dynamics of water flow Connection to groundwater bodies 	No	<p>No works are proposed in or adjacent to the waterbody or its riverbank. Surface water generated on site from rainfall will be discharged initially to settlement tanks. A minor reduction in surface water runoff rates may occur, but this does not represent an impact to the overall hydrological regime given the small volumes of runoff from the site relative to the scale of the waterbody.</p> <p>No groundwater pumping is expected to occur. If groundwater is encountered during excavations, then mechanical pumps will be required to remove the groundwater from sumps.</p> <p>No operational impacts on groundwater are expected.</p>
River continuity	<ul style="list-style-type: none"> Lateral connectivity Longitudinal connectivity 	No	<p>No works are proposed in or adjacent to the waterbody or its riverbank, so there will be no resultant impact on river continuity.</p> <p>Operational phase impacts are not anticipated as the scheme does not require any interventions in the river channel itself, and so will not affect its connectivity.</p>
Morphological conditions	<ul style="list-style-type: none"> River depth and width variation Structure and substrate of riverbed 	No	<p>No works are proposed in or adjacent to the waterbody or its riverbank. Surface water generated on site from rainfall will be discharged initially to settlement tanks. Prior to discharge off-site, the surface water will pass through a treatment train consisting of silt traps and settlement tanks to remove suspended solids and hydrocarbons. As a result, there will be no impact on morphological conditions.</p>

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
	<ul style="list-style-type: none"> Structure of the riparian zone 		<p>Additionally, silt fencing will be installed strategically throughout the site, and drainage ditches will be added to intercept surface water where there is a risk of significant water flow into excavations, adjoining lands or the existing watercourse.</p> <p>Operational phase impacts are not anticipated as the scheme does not require any interventions in the river channel itself or its riparian zone, and so will not affect its connectivity.</p>

Table 4-7: Scoping of physico-chemical quality elements for LIFFEY_180

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
General	<ul style="list-style-type: none"> Thermal conditions Oxygenation conditions Salinity Acidification status Nutrient conditions 	No	<p>Without design measures in place, the construction phase could lead to the mobilisation of sediment in surface water draining to the River Liffey which could lead to a deterioration in status.</p> <p>Surface water generated on site from rainfall will be discharged initially to settlement tanks. Prior to discharge off-site, the surface water will pass through a treatment train consisting of silt traps and settlement tanks to remove suspended solids and hydrocarbons.</p> <p>Operational phase impacts are not anticipated due to the design of the proposed development. The operational drainage design includes SuDS measures which will act to retain and filter surface water, through the use of attenuation areas in the form of; bio-retention systems and green roofs, as well as silt traps and</p>

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
Specific pollutants	<ul style="list-style-type: none"> Pollution by all priority substances identified as being discharged into the body of water Pollution by other substances identified as being discharged in significant quantities into the body of water 	No	<p>hydrocarbon interceptors.</p> <p>Without mitigation measures in place, the construction phase could lead to the accidental spills of hydrocarbons (such as from construction vehicles) to surface water draining to the River Liffey.</p> <p>Without design measures in place, pollutants such as hydrocarbons from cars on-site could discharge to WFD waterbodies via the surface drainage infrastructure from the site. To manage this risk, rainwater collected on-site will first be directed to settlement tanks. Prior to discharge off-site, the surface water will pass through a treatment train consisting of silt traps and settlement tanks to remove suspended solids and hydrocarbons.</p>

Table 4-8: Scoping summary assessment for LIFFEY_180

Receptor	Potential Risk to Receptor?	Note the Risk Issue(s) for Impact Assessment	Further Assessment and/or Mitigation Required?
Hydromorphology quality	No	<p>No works are proposed in or adjacent to the waterbody or its riverbank, nor will there be direct discharges to the watercourse. No direct morphological impacts are therefore likely.</p> <p>Construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included Chapter 6: Water of the EIAR will help to capture, control and</p>	No further assessment required.

Receptor	Potential Risk to Receptor?	Note the Risk Issue(s) for Impact Assessment	Further Assessment and/or Mitigation Required?
		<p>reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact Hydromorphology quality.</p>	
Biological quality	No	<p>No in-channel works or works along banks are proposed, so there will be no direct risk to habitats or species.</p> <p>Fish migration will not be at risk as a result of the proposed activities.</p> <p>Construction activities could result in suspended solids or pollutants entering the watercourse from the site. However, these construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included in Chapter 6: Water of the EIAR will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact Biological quality.</p>	No further assessment required.
Physico-chemical quality	No	<p>There will be no long-term change to general chemical quality elements as a result of the proposed development. Construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included in Chapter 6: Water of the EIAR will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will</p>	No further assessment required.

Receptor	Potential Risk to Receptor?	Note the Risk Issue(s) for Impact Assessment	Further Assessment and/or Mitigation Required?
		effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact physico-chemical quality.	

4.2.3 LIFFEY_190 (RWB)

Table 4-9: Scoping of biological quality elements for LIFFEY_190

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
Aquatic flora (macrophytes and phytobenthos)	<ul style="list-style-type: none"> • Taxonomic composition • Abundance 	No	<p>No in-channel works or works along banks are proposed, so there will be no direct risk to aquatic flora habitats or species.</p> <p>Construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included in Chapter 6: Water of the EIAR will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for aquatic flora (macrophytes and phytobenthos).</p> <p>Operational phase impacts are not anticipated due to the design of the proposed development. The operational drainage design includes SuDS measures which will act to retain and filter surface water, through the use of attenuation areas in the form of; bio-retention systems and green roofs, as well as silt traps and hydrocarbon interceptors.</p>

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
Benthic invertebrate fauna	<ul style="list-style-type: none"> • Taxonomic composition • Abundance • Level of diversity • Ratio of disturbance sensitive taxa to insensitive taxa 	No	<p>No in-channel works are proposed, so there will be no direct risk to benthic invertebrate fauna.</p> <p>Construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included in Chapter 6: Water of the EIAR will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for benthic invertebrate fauna</p> <p>Operational phase impacts are not anticipated due to the design of the proposed development. The operational drainage design includes SuDS measures which will act to retain and filter surface water, through the use of attenuation areas in the form of; bio-retention systems and green roofs, as well as silt traps and hydrocarbon interceptors.</p>
Fish	<ul style="list-style-type: none"> • Species composition • Abundance • Type-specific disturbance-sensitive species present 	No	<p>No in-channel works or works along banks are proposed, so there will be no direct risk to fish habitats or species.</p> <p>Construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included in Chapter 6: Water of the EIAR will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for fish.</p>

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
	<ul style="list-style-type: none"> Age structure 		<p>Fish migration will not be at risk as a result of the proposed activities. Construction activities will be temporary and will not impact the waterbody directly, so do not pose a direct risk to fish.</p> <p>Operational phase impacts are not anticipated due to the design of the proposed development. The operational drainage design includes SuDS measures which will act to retain and filter surface water, through the use of attenuation areas in the form of; bio-retention systems and green roofs, as well as silt traps and hydrocarbon interceptors.</p>
Phytoplankton	<ul style="list-style-type: none"> Taxonomic composition Abundance Planktonic bloom status 	No	<p>No in-channel works are proposed, so there will be no direct risk to phytoplankton.</p> <p>Construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included in Chapter 6: Water of the EIAR will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for phytoplankton.</p> <p>Operational phase impacts are not anticipated due to the design of the proposed development. The operational drainage design includes SuDS measures which will act to retain and filter surface water, through the use of attenuation areas in the form of; bio-retention systems and green roofs, as well as silt traps and hydrocarbon interceptors.</p>

Table 4-10: Scoping of hydromorphological quality elements for LIFFEY_190

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
Hydrological regime	<ul style="list-style-type: none"> Quantity and dynamics of water flow Connection to groundwater bodies 	No	<p>No works are proposed in or adjacent to the waterbody or its riverbank. Surface water generated on site from rainfall will be discharged initially to settlement tanks. A minor reduction in surface water runoff rates may occur, but this does not represent an impact to the overall hydrological regime given the small volumes of runoff from the site relative to the scale of the waterbody.</p> <p>No groundwater pumping is expected to occur. If groundwater is encountered during excavations, then mechanical pumps will be required to remove the groundwater from sumps.</p> <p>No operational impacts on groundwater are expected.</p>
River continuity	<ul style="list-style-type: none"> Lateral connectivity Longitudinal connectivity 	No	<p>No works are proposed in or adjacent to the waterbody or its riverbank, so there will be no resultant impact on river continuity.</p> <p>Operational phase impacts are not anticipated as the scheme does not require any interventions in the river channel itself, and so will not affect its connectivity.</p>
Morphological conditions	<ul style="list-style-type: none"> River depth and width variation Structure and substrate of riverbed 	No	<p>No works are proposed in or adjacent to the waterbody or its riverbank. Surface water generated on site from rainfall will be discharged initially to settlement tanks. Prior to discharge off-site, the surface water will pass through a treatment train consisting of silt traps and settlement tanks to remove suspended solids and hydrocarbons. As a result, there will be no impact on morphological conditions.</p> <p>Additionally, silt fencing will be installed strategically throughout the site, and drainage ditches will be added to intercept surface water where there is a risk of significant water flow into excavations, adjoining lands or the existing watercourse.</p>

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
	<ul style="list-style-type: none"> Structure of the riparian zone 		Operational phase impacts are not anticipated as the scheme does not require any interventions in the river channel itself or its riparian zone, and so will not affect its connectivity.

Table 4-11: Scoping of physico-chemical quality elements for LIFFEY_190

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
General	<ul style="list-style-type: none"> Thermal conditions Oxygenation conditions Salinity Acidification status Nutrient conditions 	No	<p>Without design measures in place, the construction phase could lead to the mobilisation of sediment in surface water draining to the River Liffey which could lead to a deterioration in status.</p> <p>Surface water generated on site from rainfall will be discharged initially to settlement tanks. Prior to discharge off-site, the surface water will pass through a treatment train consisting of silt traps and settlement tanks to remove suspended solids and hydrocarbons.</p> <p>Operational phase impacts are not anticipated due to the design of the proposed development. The operational drainage design includes SuDS measures which will act to retain and filter surface water, through the use of attenuation areas in the form of; bio-retention systems and green roofs, as well as silt traps and hydrocarbon interceptors.</p>
Specific pollutants	<ul style="list-style-type: none"> Pollution by all priority substances 	No	Without mitigation measures in place, the construction phase could lead to the accidental spills of hydrocarbons (such as from construction vehicles) to surface water draining to the River Liffey.

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
	<p>identified as being discharged into the body of water</p> <ul style="list-style-type: none"> • Pollution by other substances identified as being discharged in significant quantities into the body of water 		<p>Without design measures in place, pollutants such as hydrocarbons from cars on-site could discharge to WFD waterbodies via the surface drainage infrastructure from the site. To manage this risk, rainwater collected on-site will first be directed to settlement tanks. Prior to discharge off-site, the surface water will pass through a treatment train consisting of silt traps and settlement tanks to remove suspended solids and hydrocarbons.</p>

Table 4-12: Scoping summary assessment for LIFFEY_190

Receptor	Potential Risk to Receptor?	Note the Risk Issue(s) for Impact Assessment	Further Assessment and/or Mitigation Required?
Hydromorphology quality	No	No works are proposed in or adjacent to the waterbody or its riverbank, nor will there be direct discharges to the watercourse. No direct morphological impacts are therefore	No further assessment required.

Receptor	Potential Risk to Receptor?	Note the Risk Issue(s) for Impact Assessment	Further Assessment and/or Mitigation Required?
		<p>likely.</p> <p>Construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included Chapter 6: Water of the EIAR will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact Hydromorphology quality.</p>	
Biological quality	No	<p>No in-channel works or works along banks are proposed, so there will be no direct risk to habitats or species.</p> <p>Fish migration will not be at risk as a result of the proposed activities.</p> <p>Construction activities could result in suspended solids or pollutants entering the watercourse from the site. However, these construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included in Chapter 6: Water of the EIAR will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact Biological quality.</p>	No further assessment required.

Receptor	Potential Risk to Receptor?	Note the Risk Issue(s) for Impact Assessment	Further Assessment and/or Mitigation Required?
Physico-chemical quality	No	There will be no long-term change to general chemical quality elements as a result of the proposed development. Construction phase impacts are not anticipated due to the inclusion of design measures in the EIAR. The measures included in Chapter 6: Water of the EIAR will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the River Liffey during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact physico-chemical quality.	No further assessment required.

4.2.4 Dublin Groundwater Body (GWB)

Table 4-13: Scoping of physico-chemical quality elements for Dublin GWB

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
Quantitative status	<ul style="list-style-type: none"> Groundwater level regime 	No	<p>Site investigations recorded groundwater in all boreholes, while only 5 of the 17 trial pits showed evidence of groundwater.</p> <p>During construction, no groundwater pumping is expected to occur. If groundwater is encountered during excavations, then mechanical pumps will be required to remove the groundwater from sumps. The lack of groundwater encountered in the trial pit investigations also indicates that dewatering requirements will likely not be significant.</p>
Chemical	<ul style="list-style-type: none"> Conductivity 	No	The construction phase could lead to the mobilisation of sediment in surface water or accidental release of pollutants, which could

Quality Assessment	Assessment Criteria	Potential Risk to Receptor	Justification
status	<ul style="list-style-type: none"> Concentrations of pollutants 		<p>intercept to ground and to the groundwater body. However, mitigation measures outlined in the EIAR will ensure that these impacts are limited and not significant.</p> <p>The operational drainage design of the proposed development includes SuDS measures, hydrocarbon interceptors, silt traps, and attenuation storage areas which will ensure that surface water discharging from the site is of good quality.</p>

4.3 Scoping Summary

Table 4-14 below summarise the scoping assessment for all screened in WFD waterbodies. As all waterbodies are scoped out, this assessment does not continue to the next stage.

Table 4-14: Scoping assessment summary for all WFD waterbodies

Waterbody	Scoping Assessment	Scoping Result
LIFFEY_170 (RWB)	The design of the proposed development, and the mitigation measures included in the EIAR, are sufficient to ensure that no impact on this waterbody is likely to occur.	Waterbody scoped out
LIFFEY_180 (RWB)	The design of the proposed development, and the mitigation measures included in the EIAR, are sufficient to ensure that no impact on this waterbody is likely to occur.	Waterbody scoped out
LIFFEY_190 (RWB)	The design of the proposed development, and the mitigation measures included in the EIAR, are sufficient to ensure that no impact on this waterbody is likely to occur.	Waterbody scoped out
Dublin (GWB)	The design of the proposed development, and the mitigation measures included in the EIAR, are sufficient to ensure that no impact on this waterbody is likely to occur.	Waterbody scoped out

5 Conclusions

Following the completion of the WFD impact assessment, it is concluded that the proposed development will not impact on the quality elements of the screened in WFD waterbodies when mitigation measures described in Section 4 of this Report and Chapter 6 of the EIAR are applied.

Sixteen WFD waterbodies were initially screened for potential pathways from the proposed development. Four of these WFD waterbodies were carried forward to the Scoping stage as they are either immediately adjacent to or downstream of the proposed development.

The Scoping stage outlined the mitigation measures which were included for the proposed development in the EIAR. With these mitigation measures in place, it was concluded that there will be no deterioration in status class, nor impacts to any WFD waterbodies as a result of the proposed development, nor will the proposed development activities jeopardise the attainment of good surface water status for any WFD waterbody. The proposed development therefore complies with the objectives of the WFD, and does not require an exemption under Article 4(7).

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