

Appendix A13.1

Water Framework Directive (WFD) Assessment Report

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SECTION 1: WATER FRAMEWORK DIRECTIVE (WFD) COMPLIANCE ASSESSMENT

1.1 Introduction

1.1.1 The Water Framework Directive

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, as amended (European Parliament 2000) is known as the Water Framework Directive, hereafter referred to as the WFD.

The WFD established a framework for the protection of both surface and groundwaters. The WFD provides a vehicle for establishing a system to improve and / or maintain the quality of waterbodies across the European Union (EU). The WFD requires all waterbodies (river, lakes, groundwater, transitional, coastal) to attain 'Good Water Status' (qualitative and quantitative) by 2027.

There are a number of WFD objectives in respect of which the quality of water is protected. The key objectives at EU level are the general protection of aquatic ecology, specific protection of unique and valuable habitats, the protection of drinking water resources, and the protection of bathing water. The objective is to achieve this through a system of river basin management planning and extensive monitoring. 'Good Status' means both 'Good Ecological Status' (GES) and 'Good Chemical Status' (GCS).

The WFD Art 4 (iii) Environmental Objectives include the following:

- Member States shall implement the necessary measures to prevent deterioration of the status of all bodies of surface water;
- Member States shall protect, enhance and restore all bodies of surface water- subject to the application of subparagraph (iii) for artificial and heavily modified bodies of water- with the aim of achieving good surface water status within the prescribed time frame;
- Member States shall protect and enhance all artificial and heavily modified bodies of water, with the aim of achieving good ecological potential and good surface water chemical status within the prescribed time frame. Where this is not possible and subject to the criteria set out in the Directive, aim to achieve good status by 2021 or 2027;
- By implementing prescribed measures, progressively reduce pollution from priority substances and cease or phase out emissions, discharges and losses of priority hazardous substances;
- Prevent Deterioration in Status and prevent or limit input of pollutants to groundwater.

The WFD was initially transposed into Irish law by S.I. No. 722/2003 – European Communities (Water Policy) Regulations 2003, as amended (hereafter referred to as the 'Water Policy Regulations'). The Water Policy Regulations outline the water protection and water management measures required to maintain high status of waters where it exists, prevent any deterioration in existing water status and achieve at least 'Good' status for all waters.

Subsequently, S.I. No. 272/2009 - European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended (hereafter referred to as the Surface Waters Regulations), and S.I. No. 9/2010 - European Communities Environmental Objectives (Groundwater) Regulations 2010, as amended (hereafter referred to as the Groundwater Regulations), were promulgated to regulate WFD characterisation, monitoring and status assessment programmes, in terms of assigning responsibilities for the monitoring of different water categories, determining the quality elements and undertaking the characterisation and classification assessments.

1.1.2 Article 4.7 of the WFD

Article 4.7 of the WFD outlines exceptions where Member States will not be in violation of the Directive. These exceptions apply when failure to achieve good groundwater or ecological status is due to new modifications or alterations. This provision allows for necessary developments while maintaining the Directive's overall objectives. Article 4.7 states:

'Member states will not be in breach of this Directive when:

failure to achieve good groundwater status, good ecological status or, where relevant, good ecological potential or to prevent deterioration in the status of a body of surface water or groundwater is the result of new modifications to the physical characteristics of a surface water body or alterations to the level of bodies of groundwater, or

failure to prevent deterioration from high status to good status of a body of surface water is the result of new sustainable human development activities and all the following conditions are met:

(a) all practicable steps are taken to mitigate the adverse impact on the status of the body of water;

(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;

(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 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

(d) the beneficial objectives served by those modifications or alterations of the water body cannot for reasons of technical feasibility or disproportionate cost be achieved by other means, which are a significantly better environmental option.'

1.1.3 The WFD Assessment

The Water Policy Regulations require the assessment of permanent impacts of a scheme / project on waterbodies classified under the WFD including, rivers, lakes, estuaries, coastal waters and groundwater. Typically, the permanent impacts include all operational impacts but can also include impacts from construction depending on the length and / or nature of the works, etc. of the Proposed Development, as some potential construction impacts could be considered permanent in the absence of mitigation. An assessment of the compliance of the Proposed Development with WFD requirements is provided in this Appendix to Chapter 13 (Water) in Volume 2 of this EIAR.

This WFD assessment report has been prepared for the Construction and Operational Phases of the Galway BusConnects: Dublin Road Scheme (hereafter referred to as Proposed Development). Refer to Chapter 13-Water for further details.

The generic environmental objectives set out below (based on Article 4.1 of the WFD) are used for the assessment of the Proposed Development:

- No changes affecting high status sites;
- No changes that will cause failure to meet surface water Good Environmental Status (GES) or Good Ecological Potential (GEP) or result in a deterioration of surface water ecological status or potential;
- No changes which will permanently prevent or compromise the Environmental Objectives being met in other water bodies; and

- No changes that will cause failure to meet good groundwater status or result in a deterioration groundwater status.

1.2 Outline of the Proposed Development

The Proposed Development has an overall length of approximately 3.9km and includes areas such as Roscam, Doughiska, Murrough, Renmore, Merlin Park and Wellpark. The Proposed Development comprises the provision of public transport facilities and active travel facilities from east of the Moneenageisha Junction to the Doughiska Junction. This route is a main arterial route into Galway City Centre for both commuters and tourists. It also runs adjacent to the Atlantic Technological University, Merlin Park Hospital, Bon Secours Hospital and a number of schools and other amenity locations.

The Proposed Development includes a substantial increase in the level of bus priority and cycle facilities provided along the corridor, including the provision of additional lengths of bus lane resulting in improved journey time reliability. Throughout the Proposed Development, bus stops will be enhanced to improve the overall journey experience for bus passengers, and cycle facilities will be substantially improved with segregated cycle tracks provided along the links and protected junctions with enhanced signalling for cyclists provided at junctions.

Moreover, pedestrian facilities will be upgraded, and additional signalised crossings be provided. In addition, urban realm works will be undertaken at key locations with higher quality materials, planting and street furniture provided to enhance pedestrians' experience.

See Chapter 4 (Description of Proposed Development) Volume 2 of this EIAR for a full description of the Proposed Development.

1.2.1 Overview of the Proposed Development and Scope of this Assessment

The following outlines the typical works which will need to be undertaken across the Proposed Development:

- Construction works to facilitate road widening for the construction / installation of footpaths, cycle tracks and bus lanes;
- Construction and installation of new footpaths (including reinstatement of existing footpaths to be amended), comprising of a mix of in-situ concrete, concrete paving, concrete setts and natural stone setts;
- Construction works to facilitate the installation of new or amendment to existing traffic signal-controlled junctions;
- Construction works to facilitate the installation of new or amendments to existing bus stops with associated bus shelters;
- Removal of existing mature trees and planting of replacement trees;
- Diversion, relocation and protection of multiple underground and overground utilities;
- Widening is required along the length Dublin Road which will require up to 6m from adjacent lands;
- Reconfiguration of traffic movements to facilitate improved pedestrian, cyclist and bus accessibility and movement;
- The access to Belmont estate is proposed to be realigned to tie in with the Ballyloughane Road junction;
- Further east at ATU Galway City, the alignment of the cycle lane and footpath to the north is set behind the existing tree line;
- A new "cyclops" (Cycle Optimised Protected Signals) junction is proposed to replace the Skerritt roundabout;
- Throughout the scheme and where possible existing signage will be retained or relocated;
- Additional new signage will also be required at locations throughout the scheme. Typical excavation depths for installation of new signage will be approximately 1.0m;
- New road markings will be applied throughout the scheme following resurfacing works;
- Utility covers will be raised to match new ground heights where applicable.

- Drainage gullies will be relocated to the new kerb edge and will connect back to existing drainage or a new drainage network;
- All associated utility diversions;
- Carriageway widening works will require the existing footpath to be broken out, full road build-up to be constructed and jointed to the existing adjacent carriageway, and replacement footpath/raised adjacent cycle lane to be constructed; and
- A Construction Compound will also be required for site offices and material storage.

The following activities are considered as potential sources of impact and as such are scoped into this assessment:

- Construction Phase of the Proposed Development:
 - Excavations works;
 - Hoarding and the passing of plant and equipment;
 - Pavement resurfacing; and
 - Road widening works.
- Operational Phase of the Proposed Development:
 - Hard and soft landscaping;
 - Permanent infrastructure; and
 - Altered traffic / street plans.

1.3 Methodology

1.3.1 Study Area / WFD Screening

This WFD assessment covers only those components of the Proposed Development that could affect water body features. The Study Area for this assessment is typically set to extend ~250m¹ beyond the landtake boundary of the Proposed Development as any significant impacts to local waterbodies are considered to occur within this offset distance, however, it is considered that the 250m offset distance from the Study Area does not capture all waterbodies with connection to the proposed works.

The receiving surface water bodies are located more than 250 meters from the landtake boundary. However, due to the direct hydrological connection provided by the drainage network outfalls, it is considered necessary to include these water bodies within the assessment. These water bodies may be susceptible to significant impacts as a result of the Proposed Development. The assessment examines the impacts of the Proposed Development on the water bodies, including any new modifications and changes to existing conditions.

Waterbodies considered as receptors pertain to those classified under the WFD, which includes riverine, transitional waterbodies, lake (water) bodies and coastal waterbodies, and also non-WFD classified waterbodies. The Water Policy Regulations also requires the assessment of permanent impacts of a scheme on groundwater waterbodies.

¹ Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes, National Roads Authority, 2009.

Existing and proposed artificial drainage features such as existing Sustainable Drainage Systems (SUDS) have not been considered as receptors within the assessment.

1.3.2 Relevant Guidelines, Policy and Legislation

River Basin Management Plans

River Basin Management Plans (RBMPs) provide the mechanism for implementing and ensuring an integrated approach to the protection, improvement, and sustainable management of the water environment and are published every six years. The River Basin Management Plan (RBMP) for 2022-2027, published by the Department of Housing, Local Government and Heritage, represents the third RBMP for Ireland. This plan continues the efforts to protect and improve water quality across the country, addressing the challenges posed by climate change and the need for more robust measures to counteract the recent decline in water quality.

The RBMP for 2022-2027 sets out at the outset that it is published in the context of a rapidly changing policy landscape at European and international levels and against a backdrop of 'widespread, rapid and intensifying climate change'. In addition, Ireland is now experiencing a sustained decline in water quality following many years of improvements, and so stronger measures are now required to achieve sustainable water management in order to address and adapt to the impacts of climate change and achieve the desired outcomes for biodiversity.

For those waterbodies 'At Risk' of failing to meet the objectives of WFD, the RBMP 2022 - 2027 identified the most significant pressures impacting them as follows: agriculture (55%), hydromorphology (23%), urban wastewater (19%), forestry (14%), domestic wastewater (12%), urban runoff (10%), peat (7%), extractive industry (6%), and mines and quarries (5%).

Figure 1 presents the ecological status of water bodies in Ireland over the previous cycles of the RBMP and illustrates the reduction in water quality over the previous two cycles, particularly in relation to the reduced percentage of water bodies achieving high status and the increased percentage achieving bad status. However, the most recent cycle indicates an improvement in the number of water bodies achieving high status.

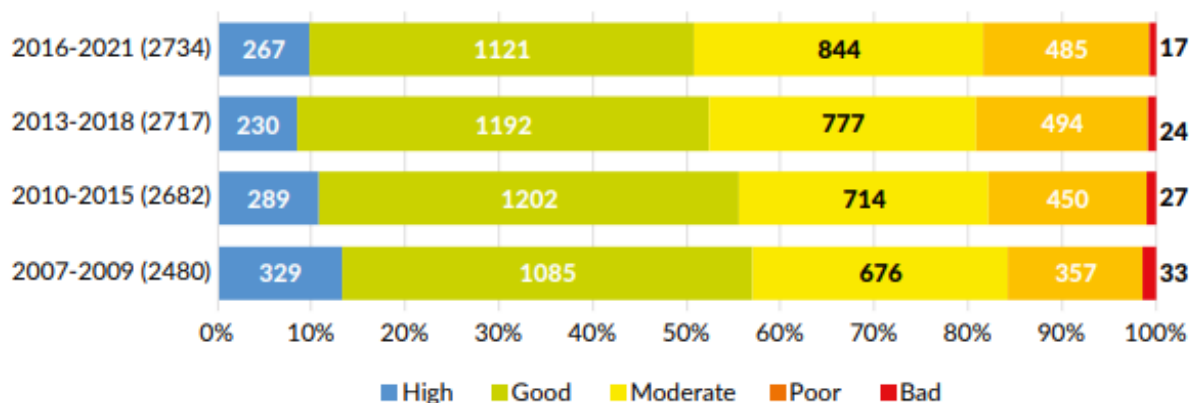


Figure 1: Ecological Status of Waterbodies in Ireland (RBMP 2022-2027)

The characterisation and risk assessments carried out for the third cycle show that 34% of water bodies are At Risk of not meeting their environmental objective of good or high status. Of these, 46% are impacted by a single significant pressure. Agriculture remains the most common pressure, followed by pressures on hydromorphology, forestry and urban wastewater. There has been an increase in waterbodies impacted by agriculture since the 2nd cycle RBMP.

1.3.3 Data Collection and Collation

The EPA's Data Explorer (<https://gis.epa.ie/EPAMaps/>) was used to assess water bodies present within the Proposed Development's Study Area, and includes their WFD ID numbers, designation and classification details. The WFD compliance mapping for groundwater risk and status assessment was also reviewed along with any other supporting data.

1.3.4 Appraisal Method

In the absence of WFD assessment guidance in Ireland, the assessment has been carried out using the UK Environment Agency's 'Water Framework Directive assessment: Estuarine and Coastal waters' (Clearing the Waters for All) 2016 (updated 2023) (Environment Agency).

Similarly, in the absence of specific guidance for freshwater waterbodies, the assessment was guided by the UK's Planning Inspectorate (PINS) guidance for Nationally significant infrastructure projects: advice on the Water Framework Directive (PINS, 2024) which acknowledges that there is no prescribed format or process for WFD Assessments and points towards the general principles and staged approach set out in the Environmental Agencies guidance.

There follows a baseline assessment of the main water bodies within the Study Area/ZOI, and a scoping assessment of the principal receptors potentially affected by the Proposed Development. This is followed by the impact assessment, which considers the potential impacts of an activity, identifies ways to avoid or minimise impacts, and indicates if an activity may cause deterioration or jeopardise the water body achieving GEP / GES.

There are several stages to this assessment:

- A scoping assessment of the main receptors including protected areas of nature conservation, bathing water etc. (Section 1.4);
- An assessment against quality elements including hydromorphology, biology, water quality, protected areas and invasive species (Section 1.5);
- Assessment of the Proposed Development against mitigation measures and a cumulative assessment against other Proposed Developments (Section 1.6); and
- Assessment against other EU Directives (Section 1.7).

1.4 Baseline Scoping

1.4.1 Water Body Scoping

Table 1 lists the WFD water bodies within the Study Area (see Section 13.3 in Chapter 13 (Water) in Volume 2 of this EIAR for more detail on these WFD surface water bodies). These are scoped into the assessment because the Proposed Development is within, adjacent or hydrologically connected to them.

Table 1: Water Body Status (Data Explorer EPA Data Explorer and <https://www.catchments.ie>)

Water body ID	Name of Water Body in RBMP	Hydromorphological Designation	Current Status / Potential (2016-2021)	Objective Status / Potential
Groundwater				
IE_WE_G_0008	Clarinbridge	-	Good	Not At Risk
Surface water				
IE_WE_170_0700	Corrib Estuary	-	Moderate	WFD Risk Review -

Water body ID	Name of Water Body in RBMP	Hydromorphological Designation	Current Status / Potential (2016-2021)	Objective Status / Potential
IE_WE_170_0500	Oranmore Bay	-	Unassigned	Not at Risk
IE_WE_170_0000	Inner Galway Bay North	-	Good	Not at Risk

The Proposed Development includes multiple discharges to estuarine waters, which will eventually be diluted with coastal waters (Inner Galway Bay North) that are classified as 'good' status (2016-2021). This assessment recognises the importance of maintaining this status and will ensure that the Inner Galway Bay North is not compromised, nor prevented from maintaining 'good' status. In the event that a potential impact is identified for the Corrib Estuary or Oranmore Bay, the assessment will further evaluate the impact on the Inner Galway Bay North.

1.4.2 Assessment Scoping

Protected Areas

The WFD requires that activities are also in compliance with other relevant legislation, as considered below. A 2km buffer zone has been applied for assessing protected areas. The following aspects are looked at as part of the assessment:

- Nature conservation designations;
- Bathing waters;
- Nutrient Sensitive Areas; and
- Shellfish waters.

Nature Conversation Designations.

These are areas previously designated for the protection of habitats or species where maintaining or improving the status of water is important for their protection. They comprise the aquatic part of Natura 2000 sites – Special Protection Areas (SPAs) designated under the Council Directive 2009/147/EC of 30 November 2009 on the conservation of wild birds (Birds Directive) and Special Areas of Conservation (SACs) designated under the Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive), as amended.

Ramsar sites are wetlands of international importance designated under the Ramsar Convention (adopted in 1971 and came into force in 1975), providing a framework for the conservation and wise use of wetlands and their resources. The Inner Galway Bay to the south of the Proposed Scheme is a designated Ramsar Site (Site No.:838).

There are also 3 No. Natura 2000 sites within 2km of the Proposed Development, two of these are located downstream of the Proposed Development, with the closest being the Inner Galway Bay SPA (Site Code: 004031), which is located approximately 55m from the red line boundary. The Galway Bay Complex SAC (Site Code: 000268) is located approximately 65m from the project.

There is no direct connectivity between the site and the downstream designated areas, however, indirect connectivity exists via the stormwater network within Galway City and the outfall locations as all surface water will be directed to the existing drainage network within the R338 road infrastructure.

Lough Corrib SAC (Site Code: 000297) is located upstream of the outfall locations and therefore, indirect connectivity via the stormwater network does not exist, however, there is indirect connectivity via Galway Bay due to the mobile aquatic QI species as they migrate through Galway Bay before reaching the SAC. Galway Bay's strong tidal currents mix and disperse water effectively, minimising the impact of surface water emissions on aquatic QI species and otters in the SAC. On this basis, there are no potential for significant effects.

The drainage outfalls for the existing network associated with the Proposed Development are located within Lough Atalia, the Corrib Estuary and Oranmore Bay. Some of these storm drain outfalls have no petrol interceptors and thus these have potential to act as a vector for surface water emissions. New petrol interceptors will be provided at the existing Lough Atalia outfall pipe, at the outfall pipe to Mutton Island WWTP, at the connection to the existing network at Ballyloughane Road.

There is also a risk that machinery and surface water could act as vectors for dispersal of invasive non-native flora species within and without the site. A Natura Impact Statement will be completed in respect of the Galway Bay Complex SAC and Inner Galway Bay SPA.

Bathing Waters

Bathing waters are those designated under the Directive 2006/7/EC of the European Parliament and of the Council of 15 February 2006 concerning the management of bathing water quality and repealing Directive 76/160/EEC, as amended. Bathing Water Quality Regulations S.I. No. 79 of 2008, as amended were adopted in March 2008 (following a public consultation) transposing the EU Bathing Water Directive into Irish law.

The closest bathing water area is Ballyloughane Beach (BWID: IEWEBWT170_0700_0200), present ~790m to the south of the Old Dublin Road. There is a stormwater drainage outfall for the existing network located at Ballyloughane Beach that does not contain WWTP or oil interceptors. As previously outlined, an oil interceptor will be installed at the connection to the existing network at Ballyloughane Road.

There are no other bathing waters within 2km of the Proposed Development.

Nutrient Sensitive Areas

Nutrient sensitive areas comprise Nitrate Vulnerable Zones and polluted waters designated under the Nitrates Directive (91/676/EEC) and areas designated as sensitive areas under the Urban Wastewater Treatment Directive (UWWTD)(91/271/EEC). The UWWTD aims to protect the environment from the adverse effects of the collection, treatment and discharge of urban wastewater. Sensitive areas under the UWWTD are water bodies affected by eutrophication associated with elevated nitrate concentrations and act as an indication that action is required to prevent further pollution caused by nutrients.

There are no nutrient sensitive areas within 2km of the Proposed Development.

Shellfish Waters

Efforts to protect and improve shellfish waters are aimed at supporting the life and growth of bivalve and gastropod molluscs, including oysters, mussels, cockles, scallops, and clams. In Ireland, these efforts are implemented through the European Communities (Quality of Shellfish Waters) Regulations 2006, as amended (SI No 268 of 2006), which require the designation of waters needing protection to support shellfish life and growth. These regulations also mandate the establishment of pollution reduction programmes for the designated waters.

There are no designated shellfish waters within 2km of the Proposed Development.

1.5 Waterbody Assessment Against Quality Elements

This section details a site-specific assessment of the Proposed Development against quality elements for hydromorphological (Table 2), biological (Table 3 and Table 4) and physico-chemical elements (Table 5) for the waterbodies.

1.5.1 Hydromorphology

Table 2 presents a summary of the hydromorphological considerations and associated risk issues of the Proposed Development for the waterbodies.

Table 2: Hydromorphology Scoping Summary

WFD Questions	Assessment	Clarinbridge Groundwater	Corrib Estuary	Oranmore Bay
Consider if your activity could impact on the hydromorphology (for example morphology or water flow) of a water body at high status?		N.A	No. The above waterbody is not considered high-status.	No, the Proposed Development will not impact the hydromorphology of Oranmore Bay as there will be no works to the existing outfall.
Consider if your activity could significantly impact the hydromorphology of any water body?		N.A	No, the surface water runoff will not increase significantly.	No, the surface water runoff will not increase significantly.
Consider if your activity is in a water body that is heavily modified for the same use as your activity?		N.A	The Corrib Estuary is not classified as a heavily modified waterbody (HMWB).	Oranmore Bay is not a HMWB.

There are no instream works proposed as part of the above development. There is no predicted exposure route to groundwater. Surface water drainage flow and volume from the affected surface water networks will not significantly change as part of the Proposed Development.

Habitats

Table 3 presents a summary of biology (habitat) considerations and associated risk issues for the works for the waterbodies.

Table 3: Biology Scoping Summary

WFD Questions	Assessment	Clarinbridge Groundwater	Corrib Estuary	Oranmore Bay
Is the footprint of the activity 0.5 Square Kilometres or larger.		Overall, the lands within the CPO / Project Boundary exceeds 0.5 Square Kilometres		
Is the footprint of the activity 1% or more of the water body's area.		N.A	The footprint of the activity is greater than 1% of the waterbodies area as the Corrib Estuary has an area of 9.75km ² .	Oranmore Bay occupies an area of 3.57km ² , indicating that the Proposed Development exceeds 1% of the waterbody area.
Consider if your activity could cause entrapment or impingement of fish?		N.A	No.	No.

Risks to habitat receptors under WFD include loss of habitat, loss of protected species and prey species. The Proposed Development will maintain the existing outfalls, a number of which will now also include petrol interceptors, before discharging to the sensitive watercourses in the region. There are no significant changes anticipated to the hydrological regime as the increase in impermeable surfacing is marginal and attenuation measures have been proposed to limit the surface water discharge rate from the Proposed Development. Given the limited change experienced, the potential for these impacts is not considered to be significant.

Similarly, construction impacts of the Proposed Development will be managed to ensure that habitats do not experience long term change. It is important to note that a Construction Environmental Management Plan (CEMP) and a Surface Water Management Plan (SWMP) will be implemented for construction management and sediment control measures respectively.

Such measures in relation to water quality will include, but are not limited to:

- Control of sediment (use of silt fences and silt sacs);
- Use of concrete (precast concrete products to be used, where possible);
- The incorporation of SUDS measures (i.e. petrol interceptor) before the discharge of surface water generated during construction;
- The establishment of an Emergency Incident Response Plan (EIRP);
- Environmental monitoring;
- Construction Compound management (including the storage of materials); and
- Management of refuelling and wheel wash facilities (containment) to prevent release to the surrounding surface waters.

Therefore, this element has been scoped out of further assessment.

Fish

Activities occurring within an estuary or inshore environment could impact on normal fish behaviour such as movement, migration or spawning. Table 4 presents a summary of biology (fish) considerations and associated risk issues for the works.

Table 4: Biology (Fish) Scoping Summary

WFD Questions	Assessment	Clarinbridge Groundwater	Corrib Estuary	Oranmore Bay
Consider if your activity is in an estuary and could effect fish in the estuary, outside the estuary, but could delay or prevent fish from entering it or could effect fish migrating through the estuary.		N.A.	The proposed scheme is not considered to affect the movement of fish migrating through the estuary provided mitigation measures, including new oil interceptors, will be introduced to reduce the risk that exists at the storm drain outfalls that currently have no WWTP or oil interceptors.	Subject to the mitigation measures proposed as part of the Scheme, it is not expected that fish will be affected within this transitional waterbody.
Consider if your activity could impact on normal fish behaviour like movement, migration or spawning (for example creating a physical barrier, noise, chemical change or a change in depth or flow)?		N.A.	Impact to fish behaviour will be minimal as the Scheme will result in the betterment of the existing drainage regime and there will be no significant alteration to the existing discharge rate.	As there will be no significant alteration to the existing discharge rate, it is considered the development will have a limited impact on fish behaviour.
Consider if your activity could cause entrapment or impingement of fish?		N.A.	No.	No.

The risks to the fish are due to noise from construction and operation, potential release of suspended sediment concentrations and contaminated surface water runoff. Chapter 09 (Noise & Vibration) and Chapter 13 (Water) in Volume 2 of this EIAR has determined that, with the incorporation of the various mitigation measures outlined in the named chapters, there are no significant residual impacts.

As above, a CEMP and a SWMP will be adhered to, to reduce any risk of suspended solid release. In the unlikely event of an accidental spillage, the emergency response plan outlined in Section 5.6.3 of Appendix 5.1 - CEMP (Volume 4 of this EIAR) will be activated, and onsite spill kits utilised. Furthermore, no instream

works are proposed as part of this Proposed Development. The Proposed Development does not propose to significantly increase the current flow or volume of surface water runoff.

1.5.2 Water Quality

Consideration should be made regarding whether phytoplankton status and harmful algae could be affected by the works, as well as identifying the potential risks of using, releasing or disturbing chemicals. Table 5 presents a summary of water quality considerations and associated risk issues of the works for the downstream waterbodies.

Table 5: Water Quality Considerations and Associated Risk Issues of the Works for the Transitional Waterbody

WFD Assessment Questions	Clarinbridge Groundwater	Corrib Estuary	Oranmore Bay
Consider if your activity could affect clarity, temperature, salinity, oxygen levels, nutrients or microbial patterns continuously for longer than a spring neap tidal cycle (14 Days)	No.	No. Chapter 13 (Water) in Volume 2 of this EIAR concludes that following the implementation of design and mitigation measures there are no significant impacts during construction or operation.	Subject to the incorporation of the design and mitigation measures presented within this EIAR, impacts on Oranmore Bay will be imperceptible.
Consider if your activity is in a water body with a phytoplankton status of moderate poor or bad.	No. N.A	No. Phytoplankton status of the Corrib Estuary is high.	This waterbody is not on a published monitoring programme.
Consider if your activity is in a water body with a history of harmful algae?	No. N.A	No.	No.
If your activity uses or releases chemicals (for example through sediment disturbance or building works) consider if the chemicals are on the environmental Quality Standard Directive (EQSD) List.	No. N.A	Yes. During construction there is potential for accidental release of chemicals which are on the EQSD list (e.g. hydrocarbons), however with the implementation of control and mitigation measures outlined in the SWMP, particularly as a result of the newly introduced petrol interceptors, there will be no significant impacts. Responsibility for the maintenance of SUDS assets and petrol interceptors will be assumed by GCC. During operation limited amounts of hydrocarbons and pollutants from road runoff will be released to the receiving environment via surface water road runoff. This condition existed pre-development and is due to the existing roads within the region. Post development the release of pollutants from these roads will be reduced, due to the SuDS and attenuation measures which will be provided as part of the scheme. The proposed BusConnect scheme will also reduce the reliance on private car journeys in the region, resulting in a reduction in the pollutants.	
If your activity has a mixing zone (like a discharge pipe or outfall) consider if the chemicals released are on the Environmental Quality Standards (EQSD)	No. N.A	Yes. The proposed scheme will include a number of outfalls to the Corrib Estuary. During construction there is potential for accidental release of hydrocarbons which are on the EQSD list, however with the implementation of control and mitigation measures outlined in the SWMP there will be no	Yes. The Proposed Development includes 1 No. outfall to Oranmore Bay. During construction there is potential for accidental release of hydrocarbons which are on the EQSD list, however with the implementation of control and mitigation measures outlined in the SWMP there will be no significant impacts. During the operational phase of the Scheme, the

WFD Assessment Questions	Clarinbridge Groundwater	Corrib Estuary	Oranmore Bay
		significant impacts. Post development the release of pollutants from these roads will be reduced, due to the SuDS and attenuation measures which will be provided as part of the scheme. See EIAR Chapter 13 (Water) for further information.	release of pollutants from the Dublin Road will be reduced. Refer to EIAR Chapter 13 (Water) for further information.
Consider if ancillary sources of discharge to contribute to water quality status (e.g UWWTP Storm Water Overflow (SWO), Combined Sewer Overflow (CSO), etc.)	No. N.A	Yes. The study area is known to contain sources of known pressures including UWWTP SWOs and a number of Industrial Licensed Emissions. See EIAR Chapter 13 (Water) for further information.	Yes. There is an UWWTP SWO also discharging to Oranmore Bay.

All of the impacts (which are not significant) on the watercourses and streams are indirect, i.e works are to be conducted on surface water networks which outfall to the streams and watercourses under consideration. A CEMP and a SWMP will also be implemented to mitigate potential impacts in relation to surface water contamination. It is important to note that the Proposed Development does not propose any changes to the current flow or volume of surface water runoff.

1.5.3 Protected Areas

Table 6 presents a summary of protected area considerations and associated risk issues of the works.

Table 6: Protected Areas

WFD Assessment Questions	Nature Conservation	Bathing Waters	Nutrient Sensitive Areas	Shellfish Waters
Consider if your activity is within 2km of any WFD protected area?	The scheme is within 2km of 1 No. Ramsar site and 3 No. Natura 2000 sites.	There is 1 No. designated bathing water site within 2km of the Proposed Development.	There are no Nutrient Sensitive Areas within 2km of the scheme.	There are no designated shellfish waters within 2km of the Proposed Development.

It is not considered that the Proposed Development will pose a risk to protected areas as there are no new outfalls to be installed as part of the Proposed Development. As some of the existing surface water networks do not feature petrol interceptors, these will form part of the mitigation introduced as part of the Proposed Development. Further detail is presented in Chapter 13 (Water).

1.5.4 Invasive Species

Consideration should be made regarding whether there is a risk the activity could introduce or spread Invasive non-native species (INNS). Risks of introducing or spreading INNS include materials or equipment that have come from, had use in or travelled through other water bodies, as well as activities that help spread existing INNS, either within the immediate water body or other water bodies. Table 7 presents a summary of INNS considerations and associated risk issues of the works.

Table 7: INNS Considerations

Consideration	Clarinbridge Groundwater	Corrib Estuary	Oranmore Bay
Introduction or spread of INNS	N.A.	There is a risk that machinery and surface water could act as vectors for dispersal of invasive non-native flora species within and without the site. See EIAR Chapter 05 (Construction) for further information.	

The Invasive Species Management Plan (ISMP) that forms part of the CEMP will be implemented for the Proposed Development which will contain site-specific recommendations and identifications for Invasive Species. Therefore, this element has been scoped out of the assessment.

1.5.5 Assessment Summary

The site-specific impacts of the Proposed Development on the biological, physico-chemical and hydromorphological quality elements of the water bodies are shown in the assessment above and summarised in Table 8.

Table 8: Scoping Summary

Receptor	Potential Risk to Receptor?	Note the Risk Issue (s) for Impact Assessment
Hydromorphology	No	Provided the construction stage mitigations are carried out. It is considered that the Proposed Development will not pose a risk to the surrounding environment.
Biology: habitats	No	Provided the mitigation measures referred to in the CEMP, SWMP and Chapter 13 (EIAR) are fully implemented, the risk of any impact is negligible.
Biology: fish	No	Provided the mitigation measures referred to in the CEMP, SWMP and Chapter 13 (EIAR) are fully implemented, the risk of any impact is negligible.
Water quality	No	Provided the mitigation measures referred to in the CEMP, SWMP and Chapter 13 (EIAR) are fully implemented, the risk of any impact is negligible.
Protected areas	No	Provided the construction stage mitigations are carried out. It is considered that the Proposed Development will not pose a risk to protected areas.
Invasive non-native species	No	Provided the mitigation measures outlined in the ISMP are carried out. It is considered that the Proposed Development will not pose a risk to the surrounding environment.

1.6 Assessment of the Proposed Development against WFD Programme of Measures (PoMs)

There is a list of measures, or environmental improvements, which have been identified by the RBMP (known as the Programme of Measures (PoMs) in the RBMP for Ireland), which need to be implemented in order to improve the ecology of water bodies by a specified date in order for Ireland to meet the target date set by the WFD. Part of the WFD assessment is to consider these PoMs and assess whether the Proposed Development can contribute to them or might obstruct any of them from being delivered.

The Programme of Measures are mostly the responsibility of Governmental Organisations and relate to the setting up of Organisations, Monitoring Bodies, and protocols, who will act as the mechanism to ensure the objectives of the WFD are achieved. Table 9 provides the only point from the Programme of Measures which is considered relevant to this scheme, and which is within the scheme's scope to act upon.

Table 9: Mitigation Measures and Assessment of Whether the Proposed Development will Help to Contribute to These (Management Plan) (RBMP and Sub Catchment Assessment)

Mitigation Measure / Action	Will the Proposed Development help to achieve or contribute to mitigation measure?
Urban waste-water discharges in the vicinity of shellfish waters will continue to be assessed to determine whether they are contributing to failures in shellfish water objectives and, in turn, whether additional waste-water treatment is required.	<p>As all the surface water flows in the region, ultimately reach Galway Bay SAC, it is considered that the design details below reduce the existing risk to shellfish waters. While the risk reduction is relatively small, it is an improvement on the existing condition in the absence of the Proposed Development.</p> <ol style="list-style-type: none"> 1. As the Proposed Development proposes new petrol interceptors and additional treatment in the forms of SuDS, it is considered that surface water from road pavements will have less pollutants in the post development scenario. 2. Post development, pollution reduction measures, such as petrol interceptors, will be in place, meaning future fuel or oil spills on the carriageway can be contained locally before discharging to downstream water bodies. 3. An existing pipe run in the vicinity of chainage 0+350, which was a combined sewer, will have the foul and surface water flows separated and surface water diverted to Network 1 surface water system as part of the Proposed Development. Predevelopment this combined sewer was a potential source of pollution during intense storm events, as combined flows could reach adjacent watercourses via a storm overflow mechanism. Post development this combined sewer will be separated into foul and surface water, thereby eliminating the predevelopment risk.

The nature of the works is unlikely to impede achievement of the PoMS proposed nor is it considered to impede any waterbody reaching GES or GEP.

1.6.1 Cumulative Assessment

The Proposed Development has been assessed for the potential for cumulative impacts with other Proposed Developments within 500m of the Study Area (refer to Chapter 20 (Cumulative Impacts & Environmental Interactions) in Volume 2 of this EIAR). This concludes that in combination with other Proposed Developments the Proposed Development will not compromise the achievement of the objectives of the WFD for any waterbody.

1.7 Assessment of the Proposed Development Against WFD Objectives

Taking into consideration the anticipated impacts of the Proposed Development on the biological, physico-chemical and hydromorphological quality elements, following the implementation of design and mitigation measures, it is concluded that it will not compromise progress towards achieving GES or cause a deterioration of the overall GEP of any of the water bodies that are in scope (Table 10).

Table 10: Compliance of the Proposed Development with the Environmental Objectives of the WFD

Environmental Objective	Proposed Development	Compliance with the WFD Directive
No changes affecting high status sites	No waterbodies identified as a high status.	Yes
No changes that will cause failure to meet surface water GES or GEP or result in a deterioration of surface water GED or GEP	After consideration as part of the detailed compliance assessment, the Proposed Development will not cause deterioration in the status of the water bodies during construction following the implementation of mitigation measures; during operation, no significant impacts are predicted.	Yes
No changes which will permanently prevent or compromise the Environmental Objectives being met in other water bodies	The Proposed Development will not cause a permanent exclusion or compromise achieving the WFD objectives in any other bodies of water within the River Basin District.	Yes
No changes that will cause failure to meet good groundwater status or result in a deterioration groundwater status.	The Proposed Development will not cause deterioration in the status of the of the groundwater bodies.	Yes

The WFD also requires consideration of how a new scheme might impact on other water bodies and other EU legislation. This is covered in Articles 4.8 and 4.9 of the WFD.

Article 4.8 states:

‘a Member State shall ensure that the application does not permanently exclude or compromise the achievement of the objectives of this Directive in other bodies of water within the same river basin district and is consistent with the implementation of other Community environmental legislation’.

All water bodies within the Study Area have been assessed for direct impacts; indirect impacts have also been assessed. The Proposed Development will not compromise the achievement of the objectives of the WFD for any water body. This concludes that in combination with other Proposed Developments the Proposed Development will not compromise the achievement of the objectives of the WFD for any water body. Therefore, the Proposed Development complies with Article 4.8.

Article 4.9 of the WFD requires that

‘Member States shall ensure that the application of the new provisions guarantees at least the same level of protection as the existing Community legislation’.

The Council Directive 92/43/EEC of 21 May 1992 on the “conservation of natural habitats and of wild fauna and flora” (“the Habitats Directive”) promotes the maintenance of biodiversity by requiring Member States to take measures to maintain or restore natural habitats and wild species listed on the Annexes to the Directive at a favourable conservation status, introducing robust protection for those habitats and species of European importance. There are European designated sites in the vicinity of the Proposed Development which have been assessed and mitigation measures to reduce the potential risk are presented in the Natura Impact Statement (NIS).

Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources, as amended (“the Nitrates Directive”) aims to protect water quality by preventing nitrates from agricultural sources polluting ground and surface waters and by promoting the use of good farming practices. The Scheme will not influence or moderate agricultural land use or land management.

Directive 2006/7/EC of the European Parliament and of the Council of 15 February 2006 concerning the management of bathing water quality and repealing Directive 76/160/EEC, as amended (rBWD) was adopted in 2006, updating the microbiological and physico-chemical standards set by the original Bathing Water Directive (BWD) (76/160/EEC) and the process used to measure/monitor water quality at identified bathing waters. The rBWD focuses on fewer microbiological indicators, whilst setting higher standards, compared to those of the BWD. Bathing waters under the rBWD are classified as excellent, good, sufficient or poor according to the levels of certain types of bacteria (intestinal enterococci and *Escherichia coli*) in samples obtained during the bathing season (May to September).

The potential impacts of the Proposed Development will not impact any designated bathing waters. It is therefore compliant with the Bathing Water Directive.

1.8 Conclusion

Considering all requirements for compliance with the WFD, the Proposed Development will not cause a deterioration in status in any water body, not prevent it from achieving GES or GEP; there are no cumulative impacts with other Schemes; and it complies with other environmental legislation.

It can be concluded that the Proposed Development complies with all requirements of the WFD.