Appendix A13.1
Water Framework Directive (WFD) Compliance Assessment

Contents

A13 Water Framework Directive Compliance Assessment

A13.1 Introduction

A13.1.1The 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 is known as the Water Framework Directive (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 water bodies across the European Union (EU). The WFD requires all water bodies (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 (See Table A13.1). 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).

Table A13.1: WFD Environmental Objectives

Objectives
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 by 2015.
Member States shall protect and enhance all artificial and heavily modified bodies of water, with the aim of achieving good ecological potential (GEP) and good surface water chemical status by 2015. Where this is not possible and subject to the criteria set out in the Directive, aim to achieve good status by 2021 or 2027.
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.

A13.1.2 Article 4.7 of the WFD

Member states must meet the conditions of the WFD unless they meet the criteria laid out in Article 4.7 of the WFD. 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.'

A13.1.3 The WFD Assessment

The Water Policy Regulations require the assessment of permanent impacts of a scheme / project on WFD water bodies, (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 Scheme, as some potential construction impacts could be considered permanent in the absence of mitigation. An assessment of the compliance of the Bray to City Centre Core Bus Corridor Scheme (hereafter referred to as the Proposed Scheme) with WFD requirements is provided in this Appendix to Chapter 13 (Water) in Volume 2 of this Environmental Impact Assessment Report (EIAR). This WFD assessment report has been prepared for the Construction and Operational Phases of the Proposed Scheme and is Appendix A13.1 of Chapter 13 (Water) in Volume 2 of this EIAR.

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

- No changes affecting high status sites;
- No changes that will cause failure to meet surface water GES or 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 of groundwater status.

A13.2 Outline of the Proposed Scheme

The Proposed Scheme will be approximately 18.5km in length and will commence at the St. Stephen's Green / Leeson Street Lower Junction and will run along the R138 (Leeson Street Lower / Leeson Street Upper / Sussex Road / Morehampton Road / Donnybrook Road / Stillorgan Road), and will include a bus interchange facility at the Stillorgan Road entrance to the University College Dublin (UCD) campus. The Proposed Scheme will continue along the N11 (Stillorgan Road / Bray Road), the R837 Dublin Road, R119 Dublin Road and the R761 (Dublin Road / Castle Street), before terminating at the northern side of the Fran O'Toole Bridge in Bray.

For the purpose of describing the Proposed Scheme, it has been split into the following four sections:

- Section 1: Leeson Street to Donnybrook (Anglesea Road Junction);
- Section 2: Donnybrook (Anglesea Road Junction) to Loughlinstown Roundabout;
- Section 3: Loughlinstown Roundabout to Bray North (Wilford Roundabout); and
- Section 4: Bray North (Wilford Roundabout) to Bray South (Fran O'Toole Bridge).

For full details, please refer to Chapter 4 (Proposed Scheme Description) in Volume 2 of the EIAR.

A13.2.1 Key Infrastructure Proposed and Scope of this Assessment

Key infrastructure elements for the Proposed Scheme are described in detail within Chapter 4 (Proposed Scheme Description) in Volume 2 of this EIAR. Chapter 5 (Construction) in Volume 2 of this EIAR describes the Construction Phase for the works related to these key infrastructure elements.

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

- Construction Phase of the Proposed Scheme:
  - Road refreshments, resurfacing or reconstruction and kerb and footpath improvements;
  - Site clearance and limited earth works;
  - Road widening;
  - Conversion of roundabout to signalised junction; and
  - Property boundary reinstatement.
- Operational Phase of the Proposed Scheme:
  - Impermeable areas; and
  - Changes in pollutant loads.

A13.3 Methodology

A13.3.1 Study Area / WFD Screening

This WFD assessment covers only those components of the Proposed Scheme that could affect water body features. These were primarily identified as sections of the Proposed Scheme which are within 500m of surface and groundwater water bodies (see Chapter 13 (Water) in Volume 2 of this EIAR). The assessment looks at the impacts of new modifications to the water bodies and any changes to existing modifications.

A13.3.2 Relevant Guidelines, Policy and Legislation

A13.3.2.1 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 second cycle River Basin Management Plan for Ireland 2018 - 2021 (hereafter referred to as the RBMP 2018 – 2021) was published by the Department of Housing, Planning and Local Government (DHPLG) in April 2018 and covers Ireland as a whole (DHPLG 2018). For the second cycle, the Eastern, South-Eastern, South-Western, Western and Shannon River Basin Districts were merged to form one national River Basin District (RBD) which covers the whole of Ireland. For those water bodies 'At Risk' of failing to meet the objectives of the WFD, the RBMP 2018 – 2021 identified the most significant pressures impacting them as follows: agriculture (53%), hydromorphology (24%), urban wastewater (20%), forestry (16%), domestic wastewater (11%), urban runoff (9%), peat (8%), extractive industry (7%) and mines and quarries (6%).

In September 2021, the Minister for Housing, Local Government and Heritage (DHLGH), published the draft River Basin Management Plan for Ireland 2022 – 2027 (hereafter referred to as the draft RBMP) for public consultation. The consultation period closed on 31 March 2022. The draft RBMP 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.

Image A13.1 presents the ecological status of water bodies in Ireland over the past two cycles of the RBMP and illustrates the reduction in water quality, particularly in relation to the reduced percentage of water bodies achieving high status and increased percentage achieving bad status. The reductions in water quality are especially notable for rivers, and for other water bodies, the changes are more mixed with some reductions and some improvements. The draft RBMP cites a 4.4% net decline in the status of water bodies, and notes that this is mostly driven by a decline in the status of river water bodies.

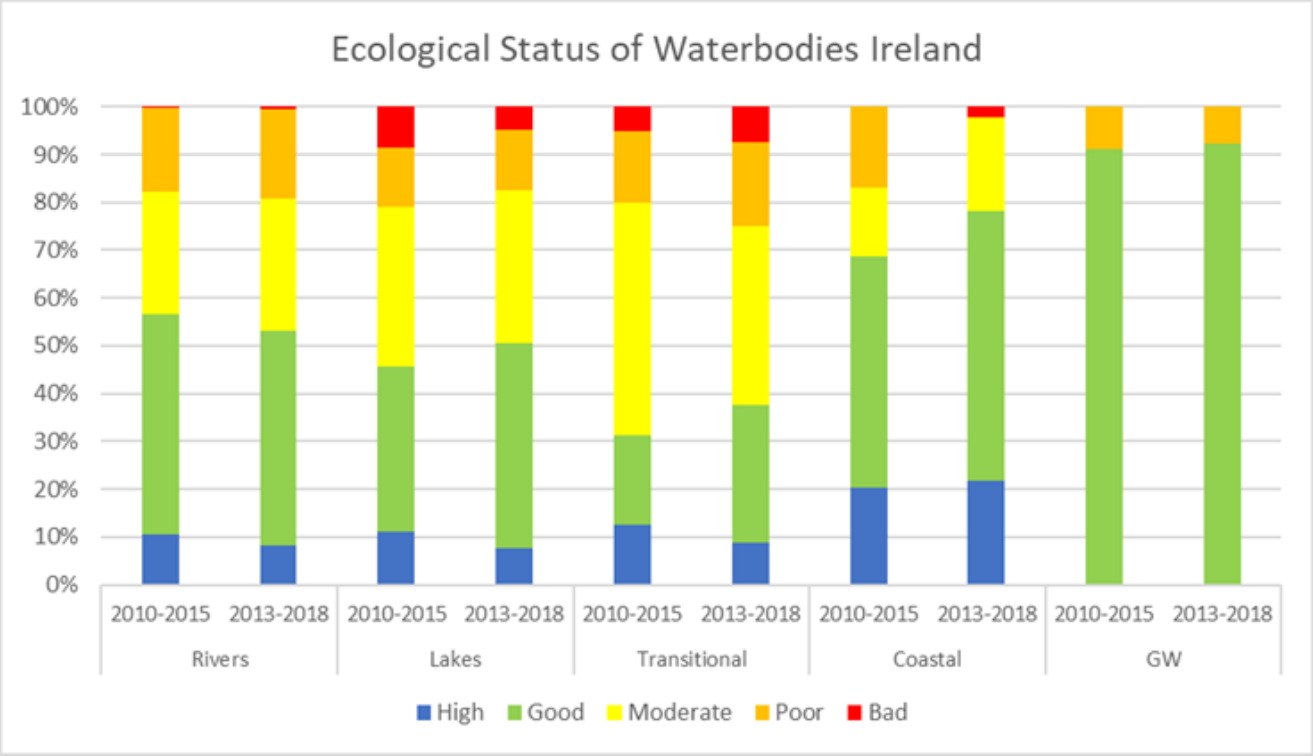

Image A13.1: Ecological Status of Water Bodies in Ireland

The characterisation and risk assessments carried out for the third cycle show that 33% 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 hydromorphology, forestry and urban wastewater. There has been an increase in water bodies impacted by agriculture since the second cycle RBMP.

The draft RBMP sets out a Programme of Measures (PoMs) necessary to deliver the objectives of the WFD in full and to contribute to other environmental priorities.

Until the draft RBMP has been consulted upon and finalised, the existing RBMP has been used as a reference point for this assessment with respect to proposed measures, as these have yet to be agreed. However, where water bodies' 'At Risk ' status has already been updated by the EPA online for the third cycle RBMP, this has been used in the assessment.

A13.3.3 Data Collection and Collation

The EPA's Data Explorer (https://gis.epa.ie/EPAMaps/) was used to assess water bodies present within the Proposed Scheme'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.

A13.3.4 Appraisal Method

In the absence of WFD assessment guidance specific to Ireland, the assessment has been carried out using the United Kingdom (UK) Environment Agency's Water Framework Directive assessment: estuarine and coastal waters (updated 2017) (Environment Agency 2016). No specific guidance exists for freshwater water bodies. However, this guidance was used as the basis of the UK's Planning Inspectorate (PINS) Advice Note Eighteen: The Water Framework Directive (PINS 2017) in which it sets out the stages of an assessment. On this basis, it is considered appropriate to use for the assessment of the Proposed Scheme. In line with this guidance, a 2km buffer zone was applied for assessing protected areas. For clarity and brevity purposes, the 2km buffer and the full list of identified protected sites (including those which are considered coastal water specific) are maintained for all assessments.

There follows a baseline assessment of the main water bodies, and a scoping assessment of the principal receptors potentially affected by the Proposed Scheme. 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 for nature conservation, bathing water etc. (Section A13.4);
- An assessment against quality elements including hydromorphology, biology, water quality, protected areas and invasive species (Section A13.5);
- An assessment of the Proposed Scheme against mitigation measures and a cumulative assessment against other proposed schemes (Section A13.6 and Section A13.7); and
- Assessment against other EU Directives (Section A13.8).

A13.4 Baseline Scoping

A13.4.1 Water Body Scoping

Table A13.2 lists the WFD water bodies within the study area (see 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 Scheme is within or adjacent to them.

Table A13.2: Water Body Status (EPA 2022a; EPA 2022b)

Water Body ID	Name of Water Body in RBMP	Hydro-Morphological Designation	Current Status / Potential (2016 - 2021)	Objective Status / Potential
Transitional				
IE_EA_110_0100	Dargle Estuary	-	Moderate	Under Review
Coastal water				
IE_EA_090_0000	Dublin Bay	-	Good	Not At Risk
IE_EA_100_0000	South Western Irish Sea - Killiney Bay	-	High	Not At Risk
Surface water				
IE_09_AWB_GCMLE	Grand Canal Main Line	AWB	Good	Not At Risk
IE_EA_09D010900	Dodder_050	-	Moderate	At Risk
IE_EA_09B130400	Brewery Stream_010 (Elm Park Stream)	-	Poor	Under Review
IE_EA_09B130400	Brewery Stream_010 (Priory Stream)	-	Poor Moderate	Under Review
IE_EA_09B130400	Brewery Stream_010 (Brewery Stream)	-	Poor Moderate	Under Review
IE_EA_10K020200	Kill of the Grange Stream_010 (Cabinteely Stream)	-	Poor	At Risk
IE_EA_10S010600	Shanganagh_010 (River Shanganagh)	-	Good	Not At Risk
IE_EA_10D010300	Dargle_040 (River Rathmichael)	-	Good	Not At Risk
IE_EA_10D010300	Dargle_040 (River Dargle)	-	Good	Not At Risk

A13.4.2 Assessment Scoping

A13.4.2.1 Protected Areas

The WFD requires that activities are also in compliance with other relevant legislation, as considered below. The following are looked at as part of the assessment (as mentioned above, in line with guidance, a 2km buffer zone was applied in this assessment):

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

A13.4.2.1.1 Nature Conservation 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 Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (as amended) (hereafter referred to as the Birds Directive) and Special Areas of Conservation (SACs) designated under Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (hereafter referred to as the Habitats Directive).

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.

Nature conservation designations within 2km of the Proposed Scheme are:

- South Dublin Bay SAC (site code 000206); and
- South Dublin Bay and River Tolka Estuary SPA (site code: 004024).

Table A13.3 lists the water-dependent habitats for which the above Natura 2000 sites have been designated, their sensitivity and potential for impact from the Proposed Scheme, from a water quality perspective. For the purposes of WFD compliance assessment, only the SAC is required to be assessed.

Table A13.3: Protected Habitat Water Sensitivity and Potential Impact

Site Name (code)	Qualifying Interests	Surface Water Dependency (Sensitivity)	Marine Water Dependency (Sensitivity)	Ground Water Dependency (Sensitivity)	Sensitivity	Potential Impact and Need for Mitigation
South Dublin Bay SAC (000210)	Mudflats and sandflats not covered by seawater at low tide	No	Yes (High)	No	Changes in sediment deposition arising from current changes (coastal and marine constructions, temporary structures, e.g. coffer dams, dredging).	Chapter 13 (Water) in Volume 2 of this EIAR concludes no significant impact following implementation of measures in Chapter 13 (Water) and the SWMP within the CEMP (Appendix A5.1 in Volume 4 of this EIAR). No additional mitigation required.
	Annual vegetation of drift lines	No	Yes (High)	No	Changes in sediment deposition arising from current changes (coastal and marine constructions, dredging).	Chapter 13 (Water) in Volume 2 of this EIAR concludes no significant impact following implementation of measures in Chapter 13 (Water) and the SWMP within the CEMP (Appendix A5.1 in Volume 4 of this EIAR). No additional mitigation required.
	Salicornia and other annuals colonising mud and sand	No	Yes (High)	No	Changes in sediment deposition arising from current changes (coastal and marine constructions, dredging).	Chapter 13 (Water) in Volume 2 of this EIAR concludes no significant impact following implementation of measures in Chapter 13 (Water) and the SWMP within the CEMP (Appendix A5.1 in Volume 4 of this EIAR). No additional mitigation required.
	Embryonic shifting dunes	No	Yes (High)	No	Changes in sediment deposition arising from current changes (coastal and marine constructions, dredging).	Chapter 13 (Water) in Volume 2 of this EIAR concludes no significant impact following implementation of measures in Chapter 13 (Water) and the SWMP within the CEMP (Appendix A5.1 in Volume 4 of this EIAR). No additional mitigation required.

As determined in Chapter 13 (Water) in Volume 2 of this EIAR, none of the identified protected habitats in Table A13.3 have potential significant impact pathways from a water quality perspective during construction or operation. The Natura Impact Statement (NIS) which has been submitted as a stand-alone document within the planning application, confirms that there will be no deterioration of qualifying features for this habitat.

The Dargle_040 (River Dargle segment) is a designated Salmonid Water under S.I. No. 293/1988 - European Communities (Quality of Salmonid Waters) Regulations, 1988. The Council Directive 78/659/EEC of 18 July 1978 on the quality of fresh waters needing protection or improvement in order to support fish life was transposed into Irish law under S.I. No. 293/1988 - European Communities (Quality of Salmonid Waters) Regulations, 1988.

A13.4.2.1.2 Bathing Waters

Bathing waters are those designated under Council Directive of 8 December 1975 concerning the Quality of Bathing Water (76/160/EEC) (hereafter referred to as the Bathing Water Directive or BWD) or the later 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 (hereafter referred to as the revised BWD). S.I. No. 79/2008 - Bathing Water Quality Regulations 2008 were adopted in March 2008 (following a public consultation) transposing the revised BWD of 2006 into Irish law.

There are a number of designated bathing waters within 2km of the Proposed Scheme:

- Killiney – Excellent Quality (approximately 2km from the closest point of the Proposed Scheme);
- South of Bray Harbour – Excellent Quality (approximately 0.75km from the closest point of the Proposed Scheme); and
- Bray South Promenade – Good Quality (approximately 1km from the closest point of the Proposed Scheme).

There are no direct impacts on bathing waters from the Proposed Scheme. Chapter 13 (Water) in Volume 2 of this EIAR concludes that there will be no significant impact on the water bodies which receive surface water from surface water systems along the Proposed Scheme and which discharge into these bathing waters. There will therefore be no impact on the status of the designated bathing waters.

A13.4.2.1.3 Nutrient Sensitive Areas

Nutrient sensitive areas comprise Nitrate Vulnerable Zones and polluted waters designated under Council Directive of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources (91/676/EEC) (hereafter referred to as the Nitrates Directive) and areas designated as sensitive areas under Council Directive 91/271/EEC concerning urban waste water treatment (hereafter referred to as the UWWTD). 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.

The Liffey Estuary Lower is a designated Nutrient Sensitive area. The Proposed Scheme is approximately 3km from the Liffey Estuary Lower at its closest point (via the Dodder_050 – beyond this point, surface water drains discharge to the combined sewer network). There are discharges of surface water from sections of the Proposed Scheme which outfall to Liffey Estuary Lower. There are no other nutrient sensitive sites within 2km of the Proposed Scheme. Chapter 13 (Water) in Volume 2 of this EIAR concludes that there will be no significant impact on the Liffey Estuary Lower from the Proposed Scheme. Specifically in relation to nutrient loading, there is no activity during construction or operation of the Proposed Scheme which will result in the discharge of nutrients to any surface water system or water body. There will therefore be no impact on the nutrient status of the Nutrient Sensitive Areas.

A13.4.2.1.4 Shellfish Waters

Directive 2006/113/EC of the European Parliament and of the Council of 12 December 2006 on the quality required of shellfish waters (hereafter referred to as the Shellfish Waters Directive) aims to protect or improve shellfish waters in order to support shellfish life and growth. It is designed to protect the aquatic habitat of bivalve and gastropod molluscs, which include oysters, mussels, cockles, scallops and clams. The Shellfish Waters Directive requires Member States to designate waters that need protection in order to support shellfish life and growth. It is implemented in Ireland by S.I. No. 268 of 2006 - European Communities (Quality of Shellfish Waters) Regulations 2006. The Shellfish Waters Directive also provides for the establishment of pollution reduction programmes for the designated waters.

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

A13.5 Water Body Assessment Against Quality Elements

This Section details a site-specific assessment of the Proposed Scheme against quality elements for biology, physico-chemical and hydromorphological elements for the water bodies.

A13.5.1 Hydromorphology

This Section provides a summary of the known existing hydromorphology risk issues for the water bodies (see Table A13.4).

Table A13.4: Hydromorphology Scoping Summary

WFD Assessment Questions	Dublin Ground Water	Grand Canal Main Line	Dodder _050	Brewery Stream _010	Dublin Bay	Kill O The Grange Stream _010	Carrickmines Stream _010	Shanganagh _010	Dargle _040	South Western Irish Sea
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. Not High status.								
Consider if your activity could significantly impact the hydromorphology of any water body?	No, it is not considered that any element of the Proposed Scheme will result in a possible exposure route to groundwater.	No. Surface water drainage flow and volume will not significantly change.								
Consider if your activity is in a water body that is heavily modified for the same use as your activity?	N/A	No. Yes, a Heavily Modified Water Body (HMWB) (Artificial Water Body (AWB)), but current modifications not changed and no new modifications.	No. Not a HMWB.							

There are no instream works proposed as part of the Proposed Scheme. There is no predicted exposure route to groundwater. One of the WFD water bodies within the study area is heavily modified. This is the Grand Canal which is an Artificial Water Body (AWB). However, the Proposed Scheme will not change or add any new modifications to this water body. No other water body is a Heavily Modified Water Body (HMWB). Surface water drainage flow and volume will not significantly change as part of the Proposed Scheme. This element is scoped out of the assessment.

A13.5.2 Biology

A13.5.2.1 Habitats

Table A13.5 presents a summary of biology (habitat) considerations and associated risk issues for the works for the water bodies.

Table A13.5: Biology Scoping Summary (Habitats)

WFD Assessment Questions	Dublin Ground water	Grand Canal Main Line	Dodder _050	Brewery Stream_010	Dublin Bay	Kill O The Grange Stream_010	Carrickmines Stream_010	Shanganagh _010	Dargle _040	South Western Irish Sea
Is the footprint of the activity 0.5 km^2 or larger?	The footprint of the whole of the Proposed Scheme is larger than 0.5km^2 however the footprint of the Proposed Scheme where it interfaces with water bodies and/or protected habitats is not larger than 0.5km^2.									
Is the footprint of the activity 1% or more of the water body's area?	No	No	The entire footprint of the Proposed Scheme is more than 1% but the point at which it can impact the water body it is <1%.							
Is the footprint of the activity within 500 m of any higher sensitivity habitat?	N/A	No							Yes, the Proposed Scheme ends at this water body which is a designated salmonid river.	No
Is the footprint of the activity 1% or more of any lower sensitivity habitat?	N/A	The Proposed Scheme is primarily contained within the current road boundary, amenity grassland and hardstanding areas (see Chapter 12 (Biodiversity) in Volume 2 of this EIAR for further detail on habitats).								

Risks to the receptor under WFD include loss of habitat, loss of protected species and prey species. The potential for these impacts is not considered to be significant. WFD assessment primarily considers the operation of a scheme. However, for biological elements, potential construction impacts are often considered as they have the potential for long-term change if a potential impact is considered to be significant. Therefore, it is important to also note here that a Construction Environmental Management Plan (CEMP) (refer to Appendix A5.1 in Volume 4 of the EIAR) and the Surface Water Management Plan (SWMP) contained within the CEMP will be implemented for construction management and sediment control measures respectively. Therefore, this element has been scoped out of further assessment.

A13.5.2.2 Fish

Activities occurring within an estuary or inshore environment could impact on normal fish behaviour such as movement, migration or spawning. Table A13.6 presents a summary of biology (fish) considerations and associated risk issues for the works.

Table A13.6: Biology (Fish) Scoping Summary

WFD Assessment Questions	Dublin Ground water	Grand Canal Main Line	Dodder _050	Brewery Stream _010	Dublin Bay	Kill of the Grange Stream _010	Carrickmines Stream _010	Shanganagh _010	Dargle _040	South Western Irish Sea
Consider if your activity is in an estuary and could affect fish in the estuary, outside the estuary but could delay or prevent fish entering it or could affect fish migrating through the estuary?	N/A	No. Not an estuary or coastal water.								Coastal water connected to Dargle Estuary. No instream works.
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	No. No instream works, current background noise levels, surface water drainage volume and flow will not be increased. Potential discharges of polluting substances (silty water, hydrocarbons) are controlled via measures set out in the SWMP. Chapter 13 (Water) concludes no residual impacts on these water bodies. Including Dargle_040, a designated salmonid river, for which additional mitigation and control measures are identified.								
Consider if your activity could cause entrainment or impingement of fish?	N/A	No. No instream works.								

The risks to the receptor are due to noise from construction and operation, the potential release of suspended sediment concentrations, and the creation of plumes as a result, and contaminated surface water runoff. Chapter 9 (Noise & Vibration) in Volume 2 of this EIAR has determined that, with the incorporation of the various mitigation measures outlined in that Chapter, there are no significant residual noise or vibration impacts during construction or operation. As above, a CEMP and SWMP (refer to Appendix A5.1 in Volume 4 of this EIAR) will be implemented, to reduce any risk of suspended solid release. In the unlikely event of an accidental spillage, the emergency response plan will be activated, and on-site spill kits utilised. Furthermore, no instream works are proposed as part of this Proposed Scheme. The Proposed Scheme does not propose to increase the current flow or volume of surface water runoff. Therefore, this element has been scoped out of this assessment.

A13.5.3 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 A13.7 presents a summary of water quality considerations and associated risk issues of the works for the transitional water body.

Table A13.7: Water Quality Scoping Summary

WFD Assessment Questions	Dublin Ground Water	Grand Canal Main Line	Dodder _050	Brewery Stream _010	Dublin Bay	Kill O The Grange Stream _010	Carrickmines Stream _010	Shanganagh _010	Dargle _040	South Western Irish Sea
Consider if your activity could affect water clarity, temperature, salinity, oxygen levels, nutrients or microbial patterns continuously for longer than a spring neap tidal cycle (about 14 days)?	N/A	No. Not tidal.								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.
Consider if your activity is in a water body with a phytoplankton status of moderate, poor or bad?	N/A	No. Not coastal. Not monitored for phytoplankton.								Unpolluted.
Consider if your activity is in a water body with a history of harmful algae?	N/A	No records of this.								
If your activity uses or releases chemicals (for example through sediment disturbance or building works) consider if the chemicals are on the Environmental Quality Standards Directive (EQSD) list?	No direct discharge to this water body.	Yes. During construction there is potential for accidental release of chemicals which are on the EQSD list (hydrocarbons e.g.); however with the implementation of control and mitigation measures outlined in the SWMP there will be no significant impacts. No substances on the EQSD list will be released during operation.								
If your activity has a mixing zone (like a discharge pipeline or outfall) consider if the chemicals released are on the Environmental Quality Standards Directive (EQSD) list?	No direct discharge to this water body.	No. The discharge of surface water during operation from the Proposed Scheme will not include any EQSD list substances.								
Consider if ancillary sources of discharge contribute to water quality status (e.g. UWWTP (urban wastewater treatment plant) Storm Water Overflow (SWO), Combined Sewer Overflow (CSO) etc.)	No direct discharge to this water body.	Yes. The study area is known to contain sources of known pressures including urban WwTP SWOs and a number of Industrial Licensed Emissions. See EIAR Chapter 13 (Water) for further information. However, the Proposed Scheme does not include any new discharge points and will not impact the flow or volume of current surface water drainage. Surface water discharged from the proposed Scheme will be uncontaminated with no sources of nutrients present.								

This element has been scoped out of the impact assessment. A CEMP and SWMP (refer to Appendix A5.1 in Volume 4 of this EIAR) will also be implemented to mitigate potential impacts in relation to surface water contamination. It is important to note that the Proposed Scheme does not propose any changes to the current flow or volume of surface water runoff.

A13.5.4 Protected Areas

Table A13.8 presents a summary of protected area considerations and associated risk issues of the works. As the protected area considerations indicate that a risk could be associated with the works, this receptor has been scoped into the impact assessment.

Table A13.8: 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?	There are two designated sites within 2km of the Proposed Scheme: South Dublin Bay SAC and South Dublin and Tolka Estuary SPA. 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. Therefore there are no significant impacts to these sites.	There are 4 designated bathing water sites within 2km of the Proposed Scheme. 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. Therefore there are no significant impacts to these sites.	The Liffey Estuary Lower (2km) is a designated Nutrient Sensitive Area. There is no activity during construction or operation of the Proposed Scheme which will result in the discharge of nutrients to any surface water system or water body. There will therefore be no impact on the nutrient status of the Nutrient Sensitive Areas.	There are no designated shellfish waters within 2km of the Proposed Scheme.

It is not considered that the Proposed Scheme will pose a risk to protected areas. This element is therefore scoped out of this assessment.

A13.5.5 Invasive Species (IS)

Consideration is given to whether there is a risk that the activity could introduce or spread IS. Risks of introducing or spreading IS 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 IS, either within the immediate water body or other water bodies. Table A13.9 presents a summary of IS considerations and associated risk issues of the works.

Table A13.9: IS Considerations

WFD Assessment Questions	Dublin Ground water	Grand Canal Main Line	Dodder _050	Brewery Stream _010	Dublin Bay	Kill O The Grange Stream _010	Carrickmines Stream _010	Shanganagh _010	Dargle _040	South Western Irish Sea
Introduction or spread of IS	No. An Invasive Species Management Plan (ISMP) has been prepared and included as part of the CEMP (Appendix A5.1 in Volume 4 of this EIAR). It will be implemented for the Proposed Scheme.									

The Invasive Species Management Plan (ISMP) that forms part of the CEMP (refer to Appendix A5.1 in Volume 4 of this EIAR) will be implemented for the Proposed Scheme which will contain site-specific recommendations and identifications for IS. Therefore, this element has been scoped out of the assessment.

A13.5.6 Assessment Summary

The site-specific impacts of the Proposed Scheme on the biological, physico-chemical and hydromorphological quality elements of the water bodies are shown in the assessment above and summarised in Table A13.10.

Table A13.10: Assessment Summary

Receptor	Potential Risk to Receptor?	Note the Risk Issue(s) for Impact Assessment
Hydromorphology	No	N/A. See Section A13.5.1. There are no instream works proposed as part of this Proposed Scheme. There is no predicted exposure route to groundwater. One of the WFD waterbodies within the study area is HMWB. However, the Proposed Scheme does not change or add any new modifications to this water body. No other water body is a HMWB. Surface water drainage flow and volume will not significantly change as part of the Proposed Scheme.
Biology: habitats	No	N/A. See Section A13.5.2.1. Risks to the receptor under WFD include loss of habitat, loss of protected species and prey species, these are not considered to be significant. A CEMP and a SWMP (refer to Appendix A5.1 in Volume 4 of this EIAR) will be put in place.
Biology: fish	No	N/A. See Section A13.5.2.2. The Proposed Scheme will not pose a risk to fish.
Water quality	No	N/A. See Section A13.5.3. 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. The Proposed Scheme will not pose a risk to water quality.
Protected areas	No	N/A. See Section A13.5.4. It is considered that the Proposed Scheme will not pose a risk to protected areas.
Invasive non-native species	No	N/A. See Section A13.5.5. An ISMP will be implemented for the Proposed Scheme which will contain site-specific recommendations and identifications for IS. Therefore this element has been scoped out of the assessment.

A13.6 Assessment of the Proposed Scheme 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 Scheme can contribute to them or might obstruct any of them from being delivered.

Table A13.11 provides a list of all PoMs applicable to the water bodies, and an explanation of why the Proposed Scheme might / might not be able to achieve or contribute to mitigation measures.

Table A13.11: Mitigation Measures and Assessment of Whether the Proposed Scheme will Help to Contribute to These (Management Plan) (RBMP and Sub Catchment Assessment)

Mitigation Measure / Action	Will the Proposed Scheme Help to Achieve or Contribute to Mitigation Measure?
Point Source Desk Based Assessment	N/A
Multiple Sources in Large Urban Areas	No. The operation of the Proposed Scheme will have an imperceptible beneficial impact on surface water discharges as a result of the installation of Sustainable Drainage Systems (SuDs).

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

A13.7 Cumulative Assessment

The Proposed Scheme has been assessed for the potential for cumulative impacts with other proposed developments within 500m of the study area (refer to Chapter 21 (Cumulative Impacts & Environmental Interactions) in Volume 2 of this EIAR). This concludes that in combination with other proposed developments, the Proposed Scheme will not compromise the achievement of the objectives of the WFD for any water body.

A13.8 Assessment of the Proposed Scheme Against WFD Objectives

Taking into consideration the anticipated impacts of the Proposed Scheme 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 A13.12).

Table A13.12: Compliance of the Proposed Scheme with the Environmental Objectives of the WFD

Environmental Objective	Proposed Scheme	Compliance with the WFD Directive
No changes affecting high status sites.	No waterbodies identified as high status.	Yes
No changes that will cause failure to meet surface water GES or GEP or result in a deterioration of surface water GES or GEP.	After consideration as part of the detailed compliance assessment, the Proposed Scheme 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 Scheme 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 Scheme 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 Scheme will not compromise the achievement of the objectives of the WFD for any water body. In addition, the Proposed Scheme has been assessed for the potential for cumulative impacts with other proposed developments within 500m of the study area. This concludes that in combination with other proposed developments the Proposed Scheme will not compromise the achievement of the objectives of the WFD for any water body. Therefore, the Proposed Scheme 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 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 Habitats 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 Scheme which have been assessed and are presented in the NIS. The NIS is a standalone document included in the planning application for the Proposed Scheme. It concludes that the Proposed Scheme will not lead to a deterioration in the features of any designated site. The Proposed Scheme is not considered to be a risk to designated habitats, and therefore, is compliant with the Habitats Directive.

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 Proposed Scheme will not influence or moderate agricultural land use or land management.

The revised BWD was adopted in 2006, updating the microbiological and physico-chemical standards set by the original BWD and the process used to measure / monitor water quality at identified bathing waters. The revised BWD focuses on fewer microbiological indicators, whilst setting higher standards, compared to those of the BWD. Bathing waters under the revised BWD 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 Proposed Scheme will not have any significant adverse impact on any designated bathing waters. It is therefore compliant with the Bathing Water Directive.

A13.9 Conclusion

Considering all requirements for compliance with the WFD, the Proposed Scheme 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 Scheme complies with all requirements of the WFD.

Taking into consideration the impacts of the Proposed Scheme on the biological, physico-chemical and hydromorphological quality elements, it is concluded that, following the implementation of design and mitigation measures, it will not compromise progress towards achieving GES or GEP or cause a deterioration of the overall status of the water bodies that are in scope. It will also not compromise the qualifying features of protected areas and is compliant with other relevant Directives. It can therefore be concluded that the Proposed Scheme is fully complaint with the WFD and therefore does not require assessment under Article 4.7 of the WFD (see Section A13.1.2).

A13.10 References

Environment Agency (2016). Environment Agency's 'Water Framework Directive assessment: Estuarine and Coastal waters' 2016 'Clearing Waters for All' (updated 2017).

EPA (2008). Water Dependent Habitats and Species and High Status Sites. [Online] Available at: https://www.catchments.ie/download/water-dependent-species-habitats-guidance/

EPA (2022a). Data Explorer. [Online] Available from https://gis.epa.ie/EPAMaps/

EPA (2022b). Catchments.ie. [Online] Available from https://www.catchments.ie

Planning Inspectorate (PINS) (2017). Advisory Note 18 'Water Framework Directive' June 2017.

Directives and Legislation

Council Directive (76/160/EEC) Bathing Water and revised (2006/7/EC).

Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources (Nitrates Directive)

Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment

Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora

Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption

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

Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds

Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014, amending Directive 2011/92/EU of the European Parliament and the Council of 13 December 2011 on the assessment of the impacts of certain public and private projects on the environment

S.I. No. 722/2003 - European Communities (Water Policy) Regulations 2003

S.I. No. 268/2006 - European Communities (Quality of Shellfish Waters) Regulations 2006

S.I. No. 9/2010 - European Communities Environmental Objectives (Groundwater) Regulations 2010

S.I. No. 272/2009 - European Communities Environmental Objectives (Surface Waters) Regulations 2009

S.I. No. 350/2014 - European Union (Water Policy) Regulations 2014

S.I. No. 351/2011 - Bathing Water Quality (Amendment) Regulations 2011

S.I. No. 477/2011 - European Communities (Birds and Natural Habitats) Regulations 2011