

**Appendix IX**  
Water Framework Directive  
(WFD) Assessment

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## Appendix IX: 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 (European Parliament 2000) is known as the Water Framework Directive (WFD).

The WFD requires all water bodies to achieve both good chemical status and good ecological status (GES). For each River Basin District (RBD), a River Basin Management Plan (RBMP) outlines the actions required to enable natural water bodies to achieve this (Table A0.1). Water bodies that are designated in the RBMP as Heavily Modified Water Bodies (HMWB) or Artificial Water Bodies (AWB) may be prevented from reaching GES by the physical modifications for which they are designated or purpose for which they were constructed (e.g. navigation, flood defence, urbanisation). Instead they are required to achieve good ecological potential (GEP), through implementation of a series of mitigation measures outlined in the applicable RBMP (and in some cases updated since the publication of the RBMP).

The Directive needs to be taken into account in the planning of all new activities in the water environment. The Environment Protection Agency (EPA), as competent authority in Ireland is responsible for delivering the Directive. The WFD was transposed into Irish law through the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003).

Where there are sites protected under EU legislation, the Directive aims for compliance with any relevant standards or objectives for these sites.

**Table A0.1 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 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 they exist, 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

Member states must meet the conditions of the WFD unless they meet the criteria laid out in Article 4.7 of the Directive. 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 WFD waterbodies, (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 scheme / project under consideration, as some potential construction impacts could be considered permanent in the absence of mitigation. An assessment of the compliance of the Proposed Scheme within 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 Ringsend to City Centre Core Bus Corridor Scheme (hereafter referred to as Proposed Scheme) and is Appendix A13.1 of Chapter 13 Water (Volume 3 of this EIAR).

The generic environmental objectives set out below (based on Article 4.1 of the Directive) 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 groundwater status.

## 1.2 Outline of the Proposed Scheme

The Ringsend to City Centre Core Bus Corridor Scheme (hereafter referred to as the Proposed Scheme) commences at the edge of the City Centre at Talbot Memorial Bridge beside the Custom House and will proceed eastwards along the north and south quays to Tom Clarke East Link Bridge beside Dublin Port. This section of the Proposed Scheme includes a new public transportation opening bridge (hereafter referred to as the 'Dodder Public Transport Opening Bridge (DPTOB)') over the River Dodder at its confluence with the River Liffey. The DPTOB will span from the eastern end of Sir John Rogerson's Quay (adjacent to the Capital Dock Building) to the R131 adjacent to the Tom Clarke East Link Bridge. It will accommodate pedestrians, cyclists, public buses and taxis, providing a gateway between Dublin City's south quays and Ringsend as well as the Poolbeg Peninsula beyond. The Proposed Scheme continues from this point as a cycling route towards the Poolbeg Peninsula and onward to Dublin Bay South at Sandymount. It will commence from the southern end of the Tom Clarke East Link Bridge, with two branches, one in an eastern direction (along York Road and Pigeon House Road), and the other in a south-eastern direction (along Pembroke Cottages, Cambridge Park, Ringsend Park, Strand Street and Pembroke Street) and will then conclude at the junction of the R131 Sean Moore Road and the R802 Beach Road.

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

- Section 1 – Talbot Memorial Bridge to Tom Clarke East Link Bridge;
- Section 2 – Dodder Public Transport Opening Bridge (DPTOB); and
- Section 3 – Tom Clarke East Link Bridge to Sean Moore Road.

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

### 1.2.1 Overview of the Proposed Scheme and Scope of this Assessment

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

There are a number of locations along the route of the Proposed Scheme where new infrastructure is proposed and is of relevance to this assessment:

- Deconstruction, relocation and reassembly of the existing Scherzer Bridges (and construction of replacement carriageway bridges (and associated works));
- Construction of new pedestrian boardwalks along Custom House Quay and North Wall Quay;
- Construction of the DPTOB and associated works;
- Construction of low-level retaining wall adjacent to Samuel Beckett Bridge; and
- Four Construction Compounds will also be required for site offices and material storage.

This WFD assessment covers only those components of the Proposed Scheme that could affect the water body features. These were primarily identified as sections of the Proposed Scheme which cross or are immediately adjacent to surface and groundwater waterbodies. The assessment looks at the effect of new modifications to the water bodies and any changes to existing modifications.

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;
  - Deconstruction, relocation and reassembly of the existing Scherzer Bridges (and construction of associated works);
  - Construction of new boardwalks along Custom House Quay and North Wall Quay;
  - Construction of the DPTOB and associated works;
  - Construction of low-level retaining wall adjacent to Samuel Beckett Bridge; and

- Property boundary reinstatement.
- Operational Phase of the Proposed Scheme:
  - Impermeable areas; and
  - Changes in pollutant loads.

## **1.3 Methodology**

### **1.3.1 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 waterbodies (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.

### **1.3.2 Relevant Guidelines, Policy and Legislation**

#### **1.3.2.1 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 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 original (2009) 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 waterbodies 'At Risk' of failing to meet the objectives of 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, published the draft River Basin Management Plan for Ireland 2022-2027 for public consultation. The consultation period closed 31<sup>st</sup> 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 A0.1 presents the ecological status of waterbodies 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 waterbodies achieving high status and increased percentage achieving bad status. The reductions in water quality are especially notable for rivers; for other waterbodies the changes are more mixed; some reductions, 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.

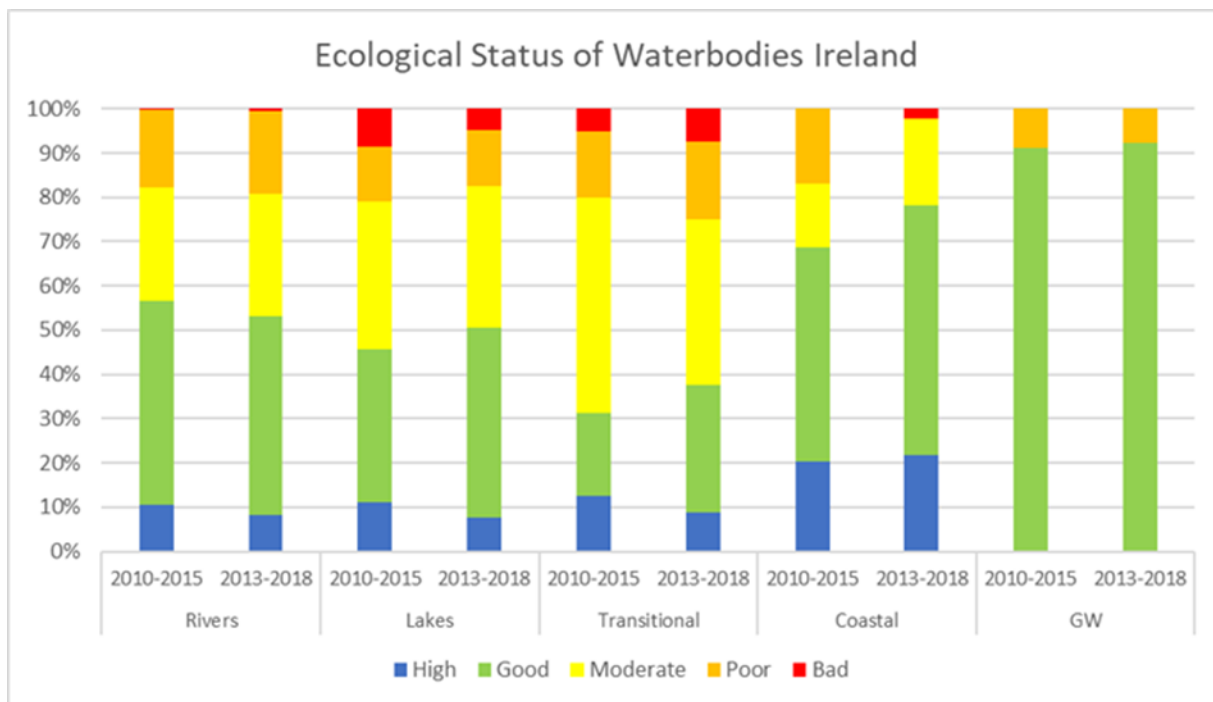


Image A0.1 Ecological Status of Waterbodies in Ireland

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 waterbodies impacted by agriculture since the 2<sup>nd</sup> 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 waterbodies' 'At Risk' status has already been updated by the EPA online for the third cycle RBMP, this has been used in the assessment.

### 1.3.3 Data Collection and Collation

The EPA's Data Explorer EPA 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.

### 1.3.4 Appraisal Method

In the absence of WFD assessment guidance in Ireland, the assessment has been carried out using the United Kingdom (UK) Environment Agency's 'Water Framework Directive assessment: Estuarine and Coastal waters (Clearing the Waters for All) 2016 (updated 2017) (Environment Agency 2017). No specific guidance exists for freshwater waterbodies, however this guidance was used as the basis of the UK's Planning Inspectorate (PINS) Advisory Note 18 'Water Framework Directive' June 2017 (PINS 2017) in which it sets out the stages of an assessment. On this basis it was considered appropriate to use for the assessment of the Proposed Scheme. In line with this guidance a 2km buffer zone 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 waterbodies, 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 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 Scheme against mitigation measures and a cumulative assessment against other proposed schemes (Section 1.6 and 1.7); and
- Assessment against other EU Directives (Section 1.8).

## 1.4 Baseline Scoping

### 1.4.1 Water Body Scoping

Table A0.2 lists the WFD water bodies within the Study Area (see Section 13.3 of Chapter 13 (Water) in Volume 2 of this EIAR for more detail of these WFD surface water bodies) which have been scoped into the assessment.

**Table A0.2: Water body status**

Water body ID	Name of water body in RBMP	Hydro-morphological designation	Current Status/ Potential (2016-2021)	Objective status/potential
<b>Transitional</b>				
IE_EA_090_0400	Liffey Estuary Upper	-	Good	At Risk
IE_EA_090_0300	Liffey Estuary Lower	HMWB	Moderate	At Risk
<b>Coastal</b>				
Dublin Bay	Dublin Bay	-	Good	Not At Risk
<b>Groundwater</b>				
IE_EA_G_008	Dublin	-	Good	Not At Risk
<b>Surface water</b>				
IE_EA_09D010900	Dodder_050 (River Dodder)	-	Moderate	At Risk
IE_09_AWB_RCMLE	Royal Canal Main Line (Liffey and Dublin Bay)	AWB	Good	Review

Note: Grand Canal Basin is within the Study Area but has been scoped out of the assessment as there is no potential for a hydrological connection to the Proposed Scheme.

### 1.4.2 Assessment Scoping

#### 1.4.2.1 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.



#### **1.4.2.1.1 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 the Birds Directive (79/409/EEC) and Special Areas of Conservation (SACs) designated under the Habitats Directive (92/43/EEC).

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; in the UK, Ramsar sites are afforded the same status as SPAs and SACs.

The EPA data (<https://gis.epa.ie/EPAMaps/>) was used to find out the nature conservation designations within 2 km of the Scheme. The following were considered:

- Sandymount Strand / Tolka Estuary Ramsar Site (site code: 832);
- North Dublin Bay SAC (site code: 000206);
- South Dublin Bay SAC (site code: 000210); and
- South Dublin Bay and River Tolka Estuary SPA (site code: 004024).

The cycleway on Pigeon House Road is within 2km of South Dublin Bay and Tolka Estuary SPA but it has an infiltration trench and so no discharges to the water body will occur. South Dublin Bay SAC is physically within 2km of the Proposed Scheme but the hydrological connection is via the Liffey Estuary Lower and the south quay wall extends out into Dublin Bay for approximately 1.5km making the connection to South Dublin Bay SAC >6km.

#### **1.4.2.1.2 Bathing waters**

Bathing waters are those designated under the Bathing Water Directive (76/160/EEC) or the later revised Bathing Water Directive (2006/7/EC). Bathing Water Quality Regulations were adopted in March 2008 (following a public consultation) transposing the EU Bathing Water Directive of 2006 into Irish law.

Sandymount Strand designated bathing water is approximately 0.5km of the Scheme. However, as with the South Dublin Bay SAC, the hydrological connection is >6km from the Proposed Scheme. There are no other bathing water sites within 2km of the Proposed Scheme.

#### **1.4.2.1.3 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 Waste Water 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 waste water. 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 areas and is directly impacted by the Proposed Scheme. There are no other designated nutrient sensitive areas 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 Upper or 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.

#### **1.4.2.1.4 Shellfish waters**

The Shellfish Waters Directive (2006/113/EC) 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 Directive requires Member States to designate waters that need protection in order to support shellfish life and growth. It is implemented in Ireland by the European Communities (Quality of Shellfish Waters) Regulations 2006 (SI No 268 of 2006). The Directive also provides for

the establishment of pollution reduction programmes for the designated waters. There are no shellfish waters within 2km of the Proposed Scheme.

## 1.5 Waterbody 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 transitional waterbodies following the Environment Agency’s Water Framework Directive assessment: Estuarine and Coastal waters (Clearing the Waters for All) 2016 (updated 2017) (Environmental Agency 2016).

### 1.5.1 Hydromorphology

This section provides a summary of the known existing hydromorphology risk issues for the transitional water bodies (Table A0.3).

**Table A0.3: Hydromorphology scoping summary**

WFD Assessment Questions	Liffey Estuary Upper	Liffey Estuary Lower	Dublin Bay	Dublin Groundwater	Dodder_050	Royal Canal Main Line
Consider if your activity could impact on the hydromorphology (for example morphology or water flow) of a water body at high status?	No. Not High status.	No. Not High status.	No. Not High status.	N/A	No. Not High status.	No. Not High status.
Consider if your activity could significantly impact the hydromorphology of any water body?	No. Surface water drainage flow and volume will not significantly change.	Yes. DPTOB potential hydromorphological impacts. Surface water drainage flow and volume will not significantly change.	No. Surface water drainage flow and volume will not significantly change.	No, it is not considered that any element of the Scheme will result in a possible exposure route to groundwater.	No. Surface water drainage flow and volume will not significantly change.	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?	No. Not a HMWB.	No. Yes a HMWB, but modifications proposed (DPTOB) is not for the same use.	N/A	N/A	No. Not a HMWB.	No. Yes a AWB, but current modifications not changed and no new modifications

Given that this section of the coast is already defended with a suite of coastal structures already in place, little change to the water body status is predicted. As there are already sea defences/flood defences in this area, impacts are likely to be limited, localised and temporary. The DPTOB is the only part of the Proposed Scheme that could permanently impact hydromorphological elements of the status of Liffey Estuary Lower.

A computational model was undertaken to assess the hydrodynamics of the Dodder\_050 and Liffey Estuary Lower and to assess the effects of the proposed bridge on the circulation patterns of the estuary (See Appendix A13.2 (Hydrodynamic Modelling of the Dodder Estuary) in Volume 4 of this EIAR). The hydrodynamic model was run to simulate the effect of the proposed construction works. The construction scenario simulated cofferdams in place around all the bridge piles and also the fender piles in place. This scenario significantly contracts flow through the bridge resulting in significantly increased velocity and shear stress over the existing scenario and thus giving rise to accelerated and deep scouring locally. The predicted scour depth in the channel between the cofferdams is 4 to 4.5m after a 24-day simulation with the sediment deposited locally in the channel within 150m upstream and 300m downstream. This would result in a short-term, adverse impact of small magnitude resulting in impacts of Significant to Moderate significance.

The hydrodynamic model of the potential impacts of the DPTOB on the hydrodynamics and morphology of the Liffey Estuary Lower (See Appendix A13.2 (Hydrodynamic Modelling of the Dodder Estuary) in Volume 4 of this EIAR) during operation concludes that:

*‘Under normal tide and fluvial flow conditions the impact of the Proposed Scheme at both the bridge crossing and Rowing Club facility (reclaimed land) will not result in any significant effect either on the hydrodynamics or the morphology of the Liffey and Dodder channels. A localised effect on hydrodynamics will occur at the proposed bridge crossing site adjacent to the proposed piers during flood events. This is likely to give rise to some potential local scouring along the eastern bank of the [Dodder]\* as a result of deflection of flow by the proposed Bascule pier. The effect of this is localised to the immediate vicinity of the proposed bridge and western and northern side of the Rowing Club Site. These flood events are rare and short lived and will result in only localised changes to the potential scouring pattern with no significant morphological impacts identified downstream.’*

As a result, it is not anticipated there would be significant impacts on the hydromorphology of the waterbodies directly impacted.

## 1.5.2 Biology

### 1.5.2.1 Habitats

Table A0.4 presents a summary of biology (habitat) considerations and associated risk issues for the works for the transitional water body.

**Table A0.4: Biology (habitat) scoping summary**

WFD Assessment Questions	Liffey Estuary Upper	Liffey Estuary Lower	Dublin Bay	Dublin Groundwater	Dodder_050	Royal Canal Main Line
Is the footprint of the activity 0.5 km <sup>2</sup> or larger?	No.					
Is the footprint of the activity 1% or more of the water body's area?	No.	No.	No.	No.	No. Dodder_050 is 29.62km.	No. Royal Canal Main Line is 39.41km.
Is the footprint of the activity within 500m of any higher sensitivity habitat?	No. The Proposed Scheme is primarily contained within the current road boundary, amenity grassland and hardstanding areas (see Chapter 12 Biodiversity of the EIAR for further detail on habitats).					
Is the footprint of the activity 1% or more of any lower sensitivity habitat?	No. The Proposed Scheme is primarily contained within the current road boundary, amenity grassland and hardstanding areas (see Chapter 12 (Biodiversity) of the EIAR for further detail on habitats).					

Risks to water bodies under WFD include loss of habitat, loss of protected species and prey species. The potential for these impacts is not considered to be significant. The 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) (Appendix A5.1 in Volume 4 of this EIAR) and Surface Water Management Plan (SWMP) (Appendix A5.1 Appendix D in Volume 4 of this EIAR) will be implemented for construction management and sediment control measures respectively. Therefore this element has been scoped out of further assessment.

### 1.5.2.2 Fish

Activities occurring within an estuary or inshore environment could impact on normal fish behaviour such as movement, migration or spawning. Table A0.5 presents a summary of biology (fish) considerations and associated risk issues for the works. As at least one biology (fish) consideration indicates that a risk could be associated with the works, this receptor has been scoped into the impact assessment for the transitional waterbody.

**Table A0.5: Biology (fish) scoping summary**

WFD Assessment Questions	Liffey Estuary Upper	Liffey Estuary Lower	Dublin Bay	Dodder_050	Royal Canal Main Line
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?	Yes. Proposed Scheme is on banks of Liffey Estuary Lower but potential for tidal impacts.	Yes	N/A	No	No
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)?	Yes – potential for increased sediment from DPTOB during construction only. Temporary.	Yes. potential for increased sediment from DPTOB during construction only. Temporary	No. >2km from DPTOB	Yes. potential for increased sediment from DPTOB during construction only. Temporary	Yes. Potential for increased sediment and concrete washings during construction works on Scherzer Bridges.
Consider if your activity could cause entrainment or impingement of fish?	No	No	No	No	No

The risks to the receptor are due to noise from construction of the revetments, and also potential release of suspended sediment concentrations and the creation of plumes as a result. These are likely to be temporary and localised and during the period of construction. Suspended sediment concentrations released as a result of works, and due to disturbance of the seabed from construction barges, are likely to be very temporary and very localised, and not significantly greater than background conditions. Most will be dispersed by wave processes. Cofferdams will be used to minimise the release of sediment during the construction of the DPTOB. Residual impacts are predicted to be Imperceptible. (See Chapter 13 (Water) in Volume 2 of this EIAR). Generic mitigation measures are outlined in the Surface Water Management plan (SWMP), which is Appendix D of the Construction Environmental Management Plan (CEMP) (Appendix 5.1 in Volume 4 of this EIAR).

### 1.5.3 Water quality

Consideration is also given as to 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 A0.6 presents a summary of water quality considerations and associated risk issues of the works for the transitional water body.

**Table A0.6: Water Quality scoping summary**

WFD Assessment Questions	Liffey Estuary Upper	Liffey Estuary Lower	Dublin Bay	Dublin Groundwater	Dodder_050	Royal Canal Main Line
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)?	Yes – potential for increased sediment from DPTOB during construction only. Temporary. Cofferdams will be installed to reduce potential impacts to Imperceptible.	No. >2km from DPTOB	No. No discharge to Groundwater	Yes. potential for increased sediment from DPTOB during construction only. Temporary Cofferdams will be installed to reduce potential impacts to Imperceptible.	Yes. Potential for increased sediment and concrete washings during construction works on Scherzer Bridges.	
Consider if your activity is in a water body with a phytoplankton status of moderate, poor or bad?	No. Phytoplankton status or potential is good.	No. Phytoplankton status or potential is good.	N/A			
Consider if your activity is in a water body with a history of harmful algae?	No information available					

WFD Assessment Questions	Liffey Estuary Upper	Liffey Estuary Lower	Dublin Bay	Dublin Groundwater	Dodder_050	Royal Canal Main Line
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?	Sediment disturbance will occur in the construction of DPTOB. Potential for release of contaminate sediment at Sir Roger Johnson's Quay. Arsenic and hydrocarbons, on the EQSD list of substances.  Coffer dams will reduce sediment releases to Imperceptible; hazardous sediment will be disposed of off site.		No. >2km from DPTOB	No. No discharge to Groundwater.	Sediment disturbance will occur in the construction of DPTOB. Potential for release of contaminate sediment at Sir Roger Johnson's Quay. Arsenic and hydrocarbons, on the EQSD list of substances.  Coffer dams will reduce sediment releases to Imperceptible; hazardous sediment will be disposed of off site.	Yes. Potential for increased sediment and concrete washings during construction works on Scherzer Bridges.  Not on EQSD list.
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	No	No	No. No discharge to groundwater.	No	No
Consider if ancillary sources of discharge contribute to water quality status (e.g. UWWTP SWO, CSO etc.)	Yes. The study area is known to contain sources of known pressures including UWWTP SWOs and CSOs and a number of Industrial Licensed Emissions. See 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.					

As at least one water quality consideration indicates that a risk could be associated with the works, this receptor has been scoped into the impact assessment. Specific mitigation measures are outlined in Chapter 13 (Water) in Volume 2 of this EIAR and generic measures are described in the SWMP (see Appendix D of the Construction Environmental Management Plan (CEMP) (Appendix 5.1 in Volume 4 of this EIAR).

### 1.5.4 Protected areas

Consideration should be made regarding whether WFD protected areas are at risk from a proposed activity. Table A0.7 presents a summary of protected area considerations and associated risk issues of the works. As the protected areas considerations indicate that a risk could be associated with the works, this receptor has been scoped into the impact assessment.

**Table A0.7: Protected Areas**

WFD Assessment Questions	Nature Conservation Designations	Bathing Waters	Nutrient Sensitive Areas	Shellfish Waters
Consider if your activity is within 2km of any WFD protected area?	There are no designated sites within 2km of the Proposed Scheme	There are no bathing water sites within 2km of the Scheme.	The Liffey Estuary is designated a nutrient sensitive area and it is directly impacted by the Proposed Scheme. There are no other designated nutrient sensitive areas within 2km of the Scheme.	There are no shellfish waters within 2km of the Scheme.

There is only one WFD protected area within 2km of the Proposed Scheme; the Liffey Estuary Lower which is a Nutrient Sensitive Area. There are no aspects of the Proposed Scheme which could increase (or decrease) nutrient levels in the waterbody and so this has been scoped out of the assessment.

### 1.5.5 Invasive Species (IS)

Consideration should be made regarding whether there is a risk 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 A0.8 presents a summary of IS considerations and associated risk issues of the works.

**Table A0.8: INNS considerations**

WFD Assessment Questions	Liffey Estuary Upper	Liffey Estuary Lower	Dublin Bay	Dublin Groundwater	Dodder_050	Royal Canal Main Line	Grand Canal Main Line
Introduction or spread of IS	No. An Invasive Species Management Plan (ISMP) (Appendix 5.1 Appendix C) has been prepared and appended to the CEMP. It will be implemented for the Proposed Scheme.						

The 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.

### 1.5.6 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 A0.9.

**Table A0.9: Scoping summary**

Receptor	Potential risk to receptor?	Note the risk issue(s) for impact assessment
Hydromorphology	Yes. Reduced to No following mitigation.	DPTOB New Instream structure and potential for scour and flow alteration. Hydrodynamic study concluded no significant impacts. See Section 1.5.1
Biology: habitats	No	N/A. See Section 1.5.2.1
Biology: fish	Yes. Reduced to No following mitigation.	Construction works and sedimentation. See Section 1.5.2.2
Water quality	Yes. Reduced to No following mitigation.	Construction works and sedimentation, release of contaminated sediments. N/A. See Section 1.5.3
Protected areas	No	N/A. See Section 1.5.4
Invasive species	No	N/A. See Section. 1.5.5

## 1.6 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 compliance assessment is to consider these PoMs and assess whether the Proposed Scheme can contribute to them or might prevent any of them from being delivered.

Table A0.10 provides a list of all PoMs applicable to the water bodies, and an explanation of why the Proposed Scheme may or may not be able to achieve or contribute to mitigation measures.

**Table A0.10: Mitigation measures and assessment of whether the Scheme will help to contribute to these (management plan)**

Mitigation Measure	Will the Scheme help to achieve or contribute to mitigation measure?
Dodder_050 - IA2 Point Source Desk Based Assessment	N/A



Mitigation Measure	Will the Scheme help to achieve or contribute to mitigation measure?
Dodder_050 - IA6 Multiple Sources in Large Urban Area	No. The Proposed Scheme aims to promote a modal shift but will not significantly reduce the multiple source pressures in the large urban area. The Proposed Scheme does not increase the current flow or sediment load to surface water bodies.

There is minimal change in the impermeable area of the Proposed Scheme compared to the existing; where there is a change, SuDS will be implemented but it is not anticipated their impact would be significant.

## 1.7 Cumulative Assessment

The Proposed Scheme has been assessed for the potential for cumulative impacts with other Proposed Developments within 1km of the Study Area (see 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.

## 1.8 Assessment of the Proposed Scheme against WFD objectives, Article 4.8, 4.9 and other EU legislation

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 A0.11).

**Table A0.11: Compliance of the Scheme with the environmental objectives of the WFD**

Environmental Objective	Proposed Scheme	Compliance with the WFD Directive
No changes affecting high status sites	There are no waterbodies with high status in the study area.	Yes
No changes that will cause failure to meet surface water good ecological status or potential or result in a deterioration of surface water ecological status or potential	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 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. The Proposed Scheme will not compromise the achievement of the objectives of the WFD for any water body in the Study Area. In addition, the Proposed Scheme has been assessed for the potential for cumulative impacts with other Proposed Developments within 1km 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 (1992) 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 Scheme which have been assessed and are presented in the Natura Impact Statement (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 (1991) 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 Bathing Water Directive (rBWD) (2006/7/EC) 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 Proposed Scheme will not impact any designated bathing waters as there is none <2km from the Proposed Scheme. It is therefore compliant with the Bathing Water Directive.

## **1.9 Conclusions**

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 is concluded that 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 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 compliant with WFD and therefore does not require assessment under Article 4.7 of the WFD (see Section 1.1.2).

## 1.10 References

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

EPA (2023). [Online] Available at <https://gis.epa.ie/EPAMaps/>

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

Water Dependent Habitats and Species and High Status Sites <https://www.catchments.ie/download/water-dependent-species-habitats-guidance/>

### 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