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Illaunbaun Wind Farm

Water Framework Directive
Assessment

January 2026

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JC Mont-Fort

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Purpose

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1 Introduction

1.1 WFD Overview

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

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

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

All identified WFD waterbodies in the vicinity of the proposed development have been assigned a status by the EPA.

1.1.1 Scope of the WFD Assessment

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

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

1.1.2 Preventing Deterioration in Status

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

Any activity which has the potential to have an impact on the ecology of a waterbody will need consideration in terms of whether it could cause deterioration in its Ecological Status or Potential. The assessments will provide a detailed appraisal of the potential impacts of the proposed

¹ Government of Ireland (2024) *Water Action Plan 2024: A River Basin Management Plan for Ireland*. Ireland: Department of Housing, Local Government and Heritage. Available from: [www.gov.ie/pdf/?file=https://assets.gov.ie/199144/7f9320daf22e-4a7d-b238-2e179e3bd98a.pdf#page=null](https://assets.gov.ie/199144/7f9320daf22e-4a7d-b238-2e179e3bd98a.pdf#page=null) [Accessed 4 December 2024].

measures on waterbody hydromorphology and status and, where necessary, a detailed appraisal under Article 4(7) of the WFD (derogation related to deterioration caused by new modifications)¹.

For each waterbody, three different status objectives are identified within the RBMP. These are the overall status objective, the ecological status or potential objective and the chemical status objective. A default objective for all WFD waterbodies is to prevent the deterioration in the Ecological Status (or Ecological Potential for Heavily Modified and Artificial Waterbodies) of the waterbody. Note, the Ecological Status applies only to surface water bodies, and not groundwater bodies. A separate assessment may be required to assess the impacts on the chemical and quantitative status of a groundwater body, if the proposed activity is likely to cause impact.

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

The Biological Quality Elements assessed in the WFD include:

- Fish
- Benthic Invertebrates
- Macrophytes
- Phytobenthos
- Phytoplankton

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

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

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

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

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

1.1.3 Artificial or Heavily Modified Waterbodies

Whilst good ecological status is defined as a slight variation from undisturbed natural conditions in natural waterbodies, artificial and heavily modified waterbodies are unable to achieve natural conditions. Instead, artificial and heavily modified waterbodies have a target to achieve Good Ecological Potential, which recognises their important uses, whilst making sure ecology is protected as far as possible. Ecological potential is also measured on the scale high, good, moderate, poor and bad. The chemical status of these waterbodies is measured in the same way as for natural waterbodies.

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

1.1.4 Protected Areas

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

These protected areas under the WFD include:

- Drinking water protected areas (DWPA)
- Nutrient sensitive areas (NSA)
- Salmonid rivers
- Shellfish classified areas
- Bathing water areas.

1.2 Purpose of this WFD Assessment

JBA Consulting Engineers and Scientists Ltd. (hereafter JBA) has been commissioned to prepare a Water Framework Directive (WFD) Assessment Report for a proposed wind farm development approximately 4.2 km northeast of Milltown Malbay in County Clare.

The Proposed Development includes the construction, operation and decommissioning of a wind energy development consisting of six wind turbine generators with foundations and crane pad hardstanding areas an on-site 38kV substation and associated underground cabling. A full description of the proposed Project is provided in Chapter 5: Project Description of the Environmental Impact Assessment Report (EIAR) submitted with the application.

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

The proposed wind farm site is situated within the Mal Bay WFD catchment.

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

2 Assessment Methodology

2.1 Overview

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

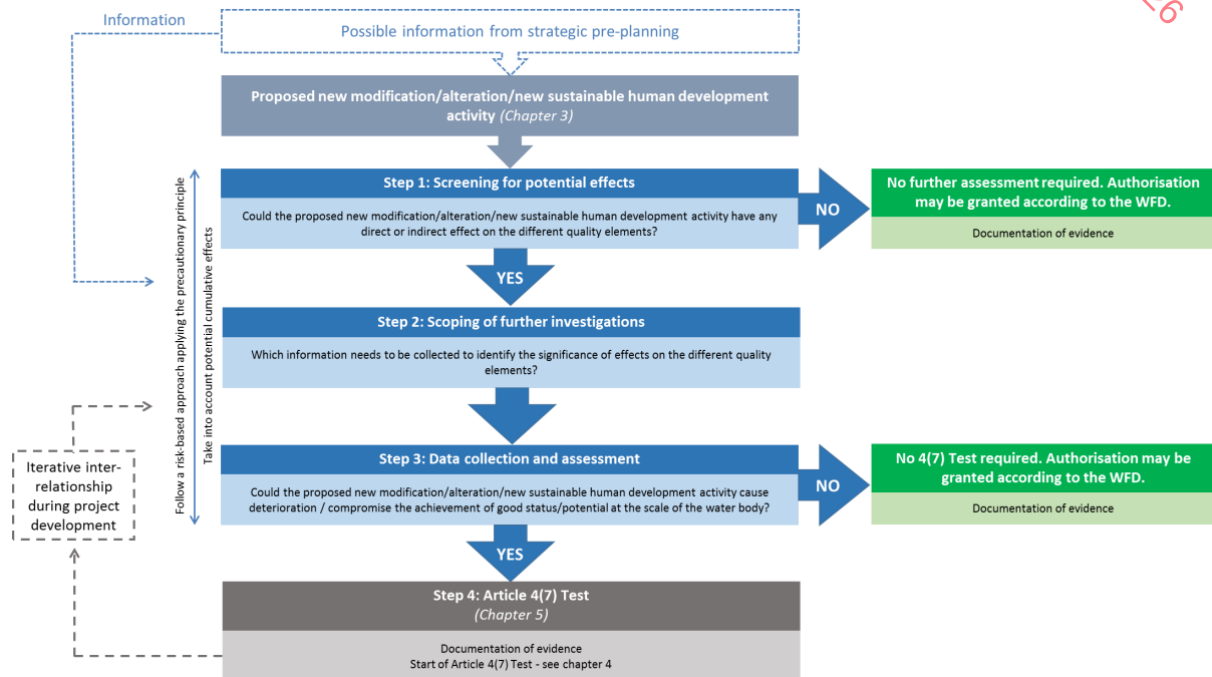


Figure 2.1. WFD assessment process (Source: CIS Guidance Document No. 36)

2.2 Stage 1: Screening Assessment

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

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

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

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

The Source-Pathway-Receptor method is used in the screening assessment. This first considers any potential sources of impacts, i.e., the proposed development and its associated activities.

Pathways from these sources are then considered, such as surface water pathways or groundwater pathways. The receptors are then the sites or waterbodies which could be impacted.

2.3 Stage 2: Scoping Assessment

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

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

Table 2-1: Water quality elements

Quality Element	Sub-category	Individual elements assessed
Biological elements	Aquatic flora (macrophytes and phytobenthos)	Taxonomic composition Abundance
	Benthic invertebrate fauna	Taxonomic composition Abundance Level of diversity Ratio of disturbance sensitive taxa to insensitive taxa
	Fish	Species composition Abundance Type-specific disturbance-sensitive species present Age structure
	Phytoplankton	Taxonomic composition Abundance Planktonic bloom status
Hydromorphological elements	Hydrological regime	Quantity and dynamics of water flow Connection to groundwater bodies
	River continuity	Lateral connectivity Longitudinal connectivity
	Morphological conditions	River depth and width variation Structure and substrate of the riverbed Structure of the riparian zone
Physico-chemical elements	General	Thermal conditions Oxygenation conditions Salinity Acidification status Nutrient conditions
	Specific pollutants	Pollution by all priority substances identified as being discharged into the body of water Pollution by other substances identified as being discharged in significant quantities into the body of water

2.4 Stage 3: WFD Impact Assessment

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

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

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

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

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

The assessment is undertaken in 2 steps:

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

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

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

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

2.5 Stage 4: Article 4(7) Test

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

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

- Test (a) - all practicable steps are taken to mitigate the adverse impact on the status of the body of water;
- Test (b) - the reasons for those modifications or alterations are specifically set out and explained in the river basin management plan required under Article 13 and the objectives are reviewed every six years;
- Test (c) - the reasons for those modifications or alterations are of overriding public interest and/or the benefits to the environment and to society of achieving the objectives set out in paragraph 1 (of Article 4(7)) are outweighed by the benefits of the new modifications or alterations to human health, to the maintenance of human safety or to sustainable development; and
- Test (d) - the beneficial objectives served by those modifications or alterations of the waterbody cannot for reasons of technical feasibility or disproportionate cost be achieved by other means, which are a significantly better environmental option.

3 Stage 1: Screening

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

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

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

3.1 Project overview

This overview of the project is taken from the EIAR Chapter 5: Project Description.

The Proposed Development is comprised of:

- Six, three-blade wind turbines with a tip height of 150m and a hub height of 91.5m. Within this height range, various configurations of rotor diameter, and ground-to-blade-tip height may be utilised. The specific make and model of the turbine will be determined through a competitive tender process, but the tip height will not exceed 150 metres.
- Each turbine will have a reinforced concrete foundation installed below the finished ground level. The size and shape of the foundation will be determined by the turbine manufacturer based on the site's geotechnical conditions, with the final turbine selection being subject to a competitive tender process
- Hard-standing areas, consisting of levelled and compacted hardcore, around each turbine base to support access, turbine assembly and erection. These areas are typically used for crane operations involved in the assembly and erection of the turbine, as well as for the offloading and storage of turbine components, providing a safe and level working environment around each turbine location.
- To provide access within the site of the Proposed Development and to connect the wind turbines and associated infrastructure existing tracks will need to be upgraded and new access roads will need to be constructed. Due to the ground conditions, new access tracks proposed on site are proposed to be founded. The typical make-up of the founded access tracks is a minimum stone thickness of 500mm. The requirement for a layer of geotextile and geogrid and the necessary stone thickness will be confirmed during site engineering.
- Two borrow pits, the first, Borrow Pit 1 (BP1) is located approximately 280 m to the southwest of turbine 3 (T03), measuring approximately 10,263 m² in area and is intended to supply hardcore materials for the construction of access roads, the grid connection, temporary construction compound and the handstand. Borrow Pit 2 (BP2) located approximately 72 metres to the north of T01, measures approximately 7,848 m² in area and is intended to supply hardcore materials for the construction of access roads there, the grid connection, temporary construction compound and the handstand.
- A 38kV substation located adjacent to an existing access road. The substation compound will occupy 1,483 m². The substation will be enclosed by a 2.4-metre-high steel palisade fence, following standard ESB guidelines. Internal fencing will also be used to segregate different areas within the compound.
- A wind farm control building will be situated within the substation compound. The wind farm control building will cover an area of 101m².
- Each turbine will be connected to the on-site electrical substation via underground cables with a voltage level at 38 kV. In addition to these, fibre-optic cables will link each wind turbine to the wind farm control building within the substation compound. These cables will

be installed in ducts approximately 1.3m below the ground surface, running along the edges of the roadways. The cable ducts will follow the access tracks to each turbine location.

- The Proposed Development includes a single temporary construction compound, located south of Turbine 3 (T03). The compound will measure 80 m by 50 m, with a total area of 4,000 m². The compound will include temporary site offices, staff facilities, and car parking areas for staff and visitors.

3.1.1 Tree Felling and Replanting

Felling of commercial forestry will be necessary to facilitate construction of the development. A total of 11.59 hectares of commercial forestry crop will be felled as part of the development. This felling will be subject to a Felling Licence application to the Forestry Service.

In accordance with the Forestry Service's established policy on issuing felling licences for wind farm developments, any areas cleared of forestry for turbine bases, access roads, or other wind farm related purposes must be compensated by replanting at an alternative location.

The estimated 11.59 hectares of forestry that will be permanently felled for the development of turbines and infrastructure will be reforested on a hectare-for-hectare basis, as required by any felling licence issued for the proposed wind farm. Replanting is a statutory requirement under the Forestry Act and is primarily managed through the statutory licensing process overseen by the Forest Service.

3.1.2 Grid Connection

The development includes the construction of a 38 kV on-site substation, which is expected to connect to the 110 kV Slievecallan substation via an underground cable approximately 15.2km in length. The proposed grid connection route will follow existing roads from the wind farm to the Slievecallan substation.

3.1.3 Location

The proposed development is situated in the Mal Bay WFD catchment area. The proposed development boundary sits across two sub-catchments within the Mal Bay catchment, and this WFD assessment will be split across these two areas:

- Annagh[Clare]_SC_010 sub-catchment: the western portion of the proposed wind farm site, the two borrow pits, and turbines T1 and T4.
- Inagh[Ennistymon]_SC_010 sub-catchment: the eastern portion of the proposed wind farm site, including the proposed contractor's compound during construction, the proposed grid connection route, and turbines T2, T3, T5, and T6.

The site and screened WFD surface and groundwater waterbodies are shown in Figure 3.1 and overpage. The following criteria were used in selecting the waterbodies to be assessed:

- The initial selection includes all WFD surface waterbodies within 2km of the proposed development, i.e., the proposed wind farm site itself, and the GCR.
- Other waterbodies which are outside of this selection will be similarly examined if deemed necessary following the Scoping stage, i.e., the next waterbodies downstream will be examined if impacts upstream are identified.
- Groundwater bodies within 2km of works for the proposed development are examined. This is based on IGI guidance² which states that a buffer area of 2km for groundwater bodies should be used.
- Similarly to surface water, if impacts on a groundwater body are anticipated, additional groundwater bodies in the area not currently examined will be added to the assessment, to assess potential for further pathways.

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

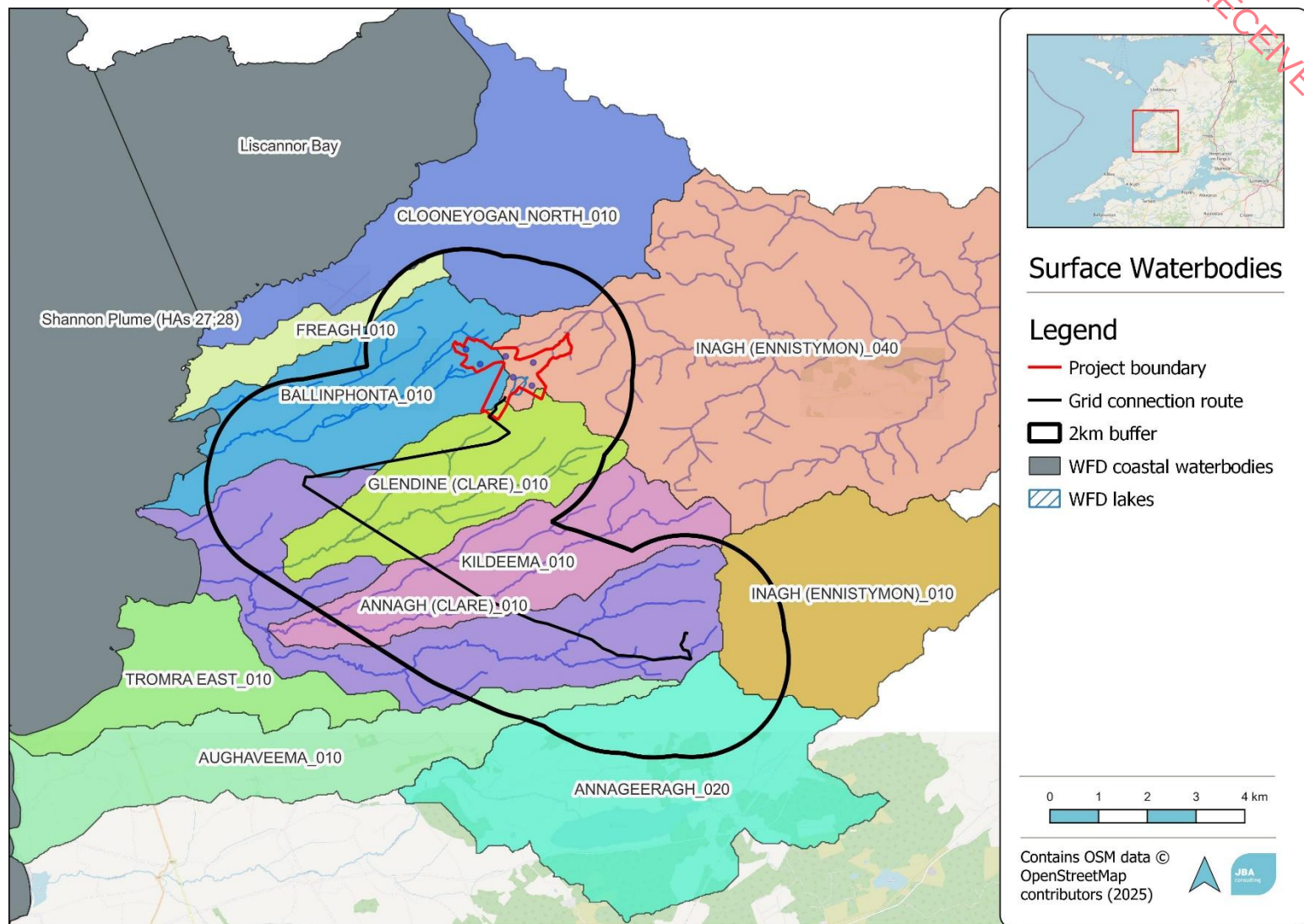


Figure 3.1: WFD surface waterbodies

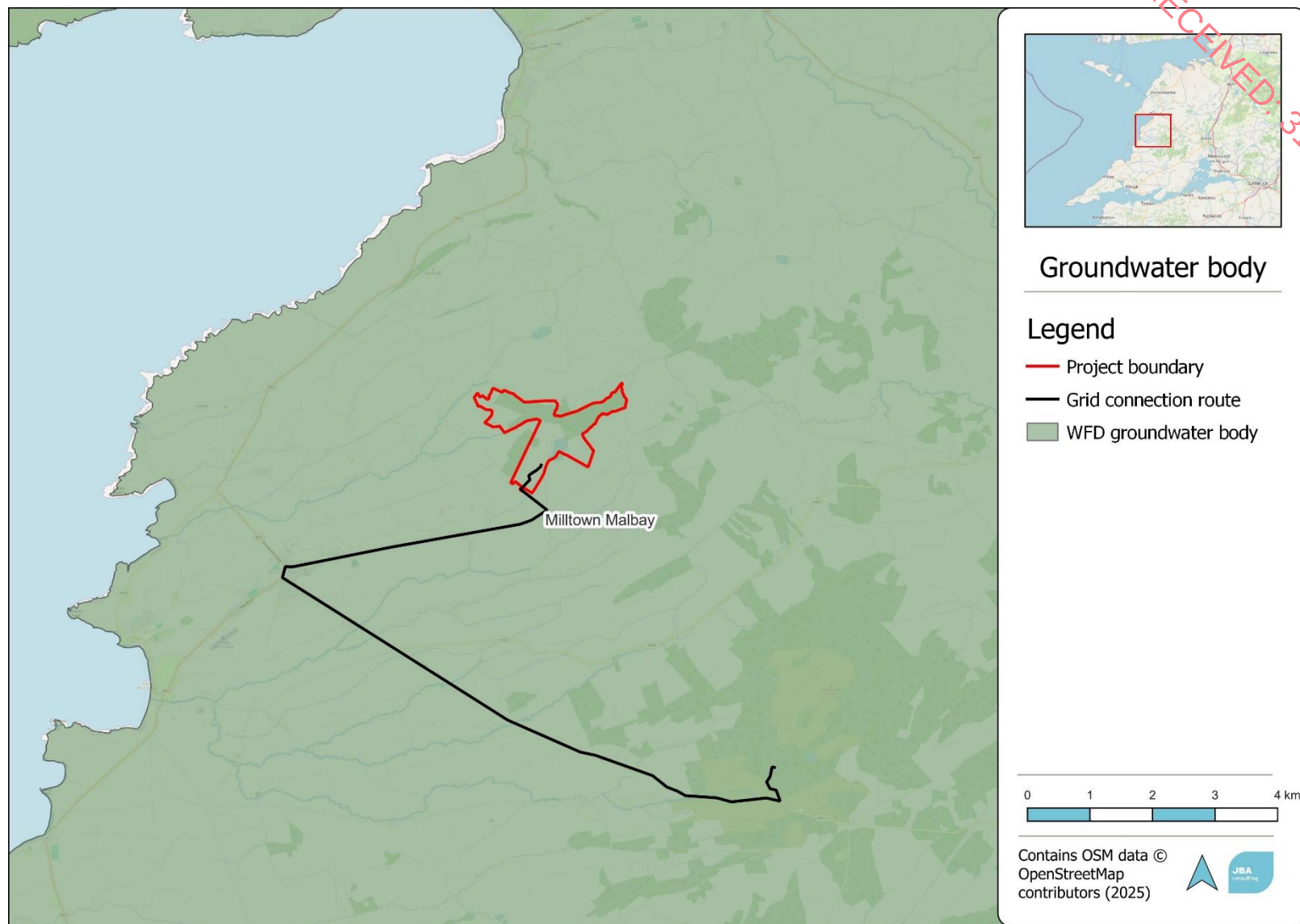


Figure 3.2: WFD groundwater body

3.1.4 Description of proposed works

The characteristics of the proposed development are described in detail in Chapter 5: Project Description of the EIAR. A summary of the activities associated with the construction of the development is described in Table 3.1.

Environmental Impact Assessment Report

An EIAR was prepared for the proposed development. Chapter 10 of the EIAR deals with water. Chapter 10 includes a full assessment of the existing surface and groundwater environments, identification of potential impacts, mitigation measures, and an assessment of residual effects following the implementation of the mitigation measures.

The mitigation measures outlined in the EIAR Chapter 10 include surface water drainage, silt and sediment control, avoidance and management of potential spills and leaks, and specific measures for the protection of groundwater during excavations.

The EIAR concluded that the residual effects during construction will be slight and temporary, and slight during operation. No significant residual effects on the water environment were identified in the EIAR.

Surface Water Management Plan

The proposed development includes site drainage measures and two distinct drainage management methods, as described in the EIAR Chapter 5 and shown on engineering drawings submitted as part of the application. The layout was designed to ensure that natural drainage routes remain unaltered, with turbine locations and infrastructure elements selected to avoid natural watercourses. There will be no direct discharges to natural watercourses, and all discharges from proposed works areas or interceptor drains will be directed over vegetated ground at an appropriate distance from waterbodies. Buffer zones around existing drainage features have been incorporated into the design.

During construction there will be no direct discharge to existing watercourses. Discharge will be by means of level spreaders discharging over vegetated natural surfaces.

On completion of the works, constructed permanent works drainage will be incorporated and discharge into the existing drainage arrangements but will include Attenuation / Settlement Ponds at discharge points to ensure drainage discharges are controlled, inspected and managed throughout the Operation Stage of the project.

Multiple surface water management measures will be used, and are described in detail in the SWMP. The measures that will be implemented include:

- Clean Water cut-off drains;
- Dirty Water ditches;
- Check Dams;
- Outfall spreaders
- Vegetation filters
- Settlement ponds;
- Siltbuster units;
- Silt bags;
- Sedimats; and
- Silt fences.

Construction Environmental Management Plan

A Construction Environmental Management Plan (CEMP) has been prepared by GDG Geosolutions which outlines mitigation measures to be put in place during the construction phase of the proposed development. The CEMP will be kept as a live document during the construction phase and will include the implementation of all mitigation measures outlined in the EIAR.

The CEMP outlines the role of the Environmental Manager, who will be responsible for supervision of all drainage works during construction.

3.2 WFD waterbodies

WFD waterbodies in proximity to the proposed development are summarised in Table 3-1 below and shown in Figure 3.1 and Figure 3.2 above. WFD waterbodies outside of where works are occurring have not been considered at this stage, as outlined in Section 3.1.2 above. Following the Scoping stage, if impacts are considered likely on any waterbodies, then additional waterbodies downstream of these will be considered.

Table 3-1. WFD waterbodies in proximity to the proposed development

Waterbody name	Type	WFD status	High Status Objective
INAGH (ENNISTYMON)_040	River	Moderate	No
BALLINPHONTA_010	River	Moderate	No
GLENDINE (CLARE)_010	River	Moderate	No
KILDEEMA_010	River	Good	No
ANNAGH (CLARE)_010	River	Bad	No
CLOONEYOGAN_NORTH_010	River	Moderate	No
FREAGH_010	River	Poor	No
TROMRA EAST_010	River	Moderate	No
AUGHAVEEMA_010	River	Moderate	No
ANNAGEERAGH_020	River	Good	No
INAGH (ENNISTYMON)_010	River	Good	No
Shannon Plume (HAs 27; 28)	Coastal	High	Yes
Liscannor Bay	Coastal	Good	No
Miltown Malbay	Groundwater	Good	n/a
Keagh	Lake	Moderate	No

3.3 Source-pathway-receptor model

The following table indicates which WFD waterbodies have been screened in or out of the assessment and the reasons for this decision.

Table 3-2. Screening outcome for previously identified WFD waterbodies (bold are screened in)

Waterbody	Waterbody type	Hydraulic linkage	Screening outcome
INAGH (ENNISTYMON)_040	River	Construction works at wind farm site close to waterbody.	Screened in
BALLINPHONTA_010	River	Construction works at wind farm site close to waterbody.	Screened in
GLENDINE (CLARE)_010	River	Construction works at wind farm site close to waterbody.	Screened in
KILDEEMA_010	River	The proposed grid connection route will cross this waterbody at two points.	Screened in
ANNAGH (CLARE)_010	River	The proposed grid connection route will cross this waterbody at four points.	Screened in
CLOONEYOGAN_NORTH_010	River	The proposed development is not located within the catchment of this waterbody, nor is it located downstream of works.	Screened out
FREAGH_010	River	The proposed development is not located within the catchment of this waterbody, nor is it located downstream of works.	Screened out
TROMRA EAST_010	River	The proposed development is not located within the catchment of this waterbody, nor is it located downstream of works.	Screened out
AUGHAVEEMA_010	River	The proposed development is not located within the catchment of this waterbody, nor is it located downstream of works.	Screened out
ANNAGEERAGH_020	River	The proposed development is not located within the catchment of this waterbody, nor is it located downstream of works.	Screened out

Waterbody	Waterbody type	Hydraulic linkage	Screening outcome
INAGH (ENNISTYMON)_010	River	The proposed development is not located within the catchment of this waterbody, nor is it located downstream of works.	Screened out
Shannon Plume (HAs 27; 28)	Coastal	This coastal waterbody is downstream of the proposed development via the BALLINPHONTA_010 and the ANNAGH (CLARE)_010 river waterbodies.	Screened in
Liscannor Bay	Coastal	This coastal waterbody is not directly downstream of the proposed development.	Screened out
Miltown Malbay	Groundwater	Construction works proposed within this groundwater body.	Screened in
Keagh	Lake	Construction works at wind farm site close to waterbody.	Screened in

3.4 Screening statement

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

River waterbodies:

- INAGH (ENNISTYMON)_040
- BALLINPHONTA_010
- GLENDINE (CLARE)_010
- KILDEEMA_010
- ANNAGH (CLARE)_010

Groundwater bodies:

- Miltown Malbay

Lake waterbodies

- Keagh

Coastal Waterbodies

- Shannon Plume (HAs 27; 28)

4 WFD Scoping Assessment

4.1 Overview

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

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

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

4.2 Scoping assessment

For each waterbody screened into the assessment, details on the status of each element, as described by the EPA's interactive GIS data explorer are given below. A summary of the scoping assessment is shown in the following tables. Tables 4.1 to 4.3 below describe the quality elements of the waterbody and potential impacts because of the proposed development, while Table 4-4 below summarises the findings of the scoping assessment for the waterbody.

4.2.1 INAGH (ENNISTYMON)_040 (RWB)

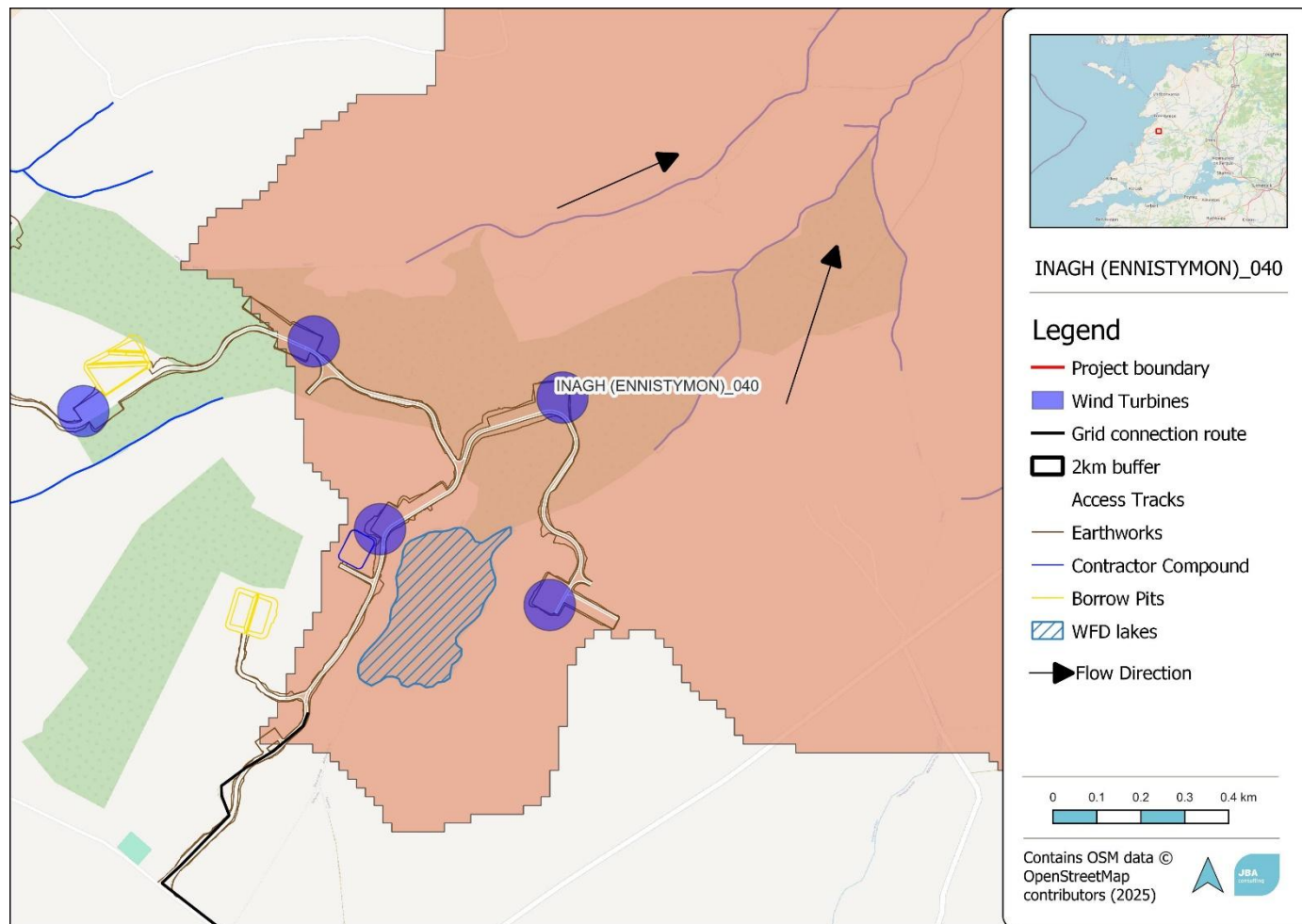


Figure 4.1: INAGH (ENNISTYMON)_040 river waterbody

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Table 4-1: Scoping of biological quality elements for INAGH (ENNISTYMON)_040

Quality element	Assessment criteria	Potential risk to receptor?	Justification
Aquatic flora (macrophytes and phytobenthos)	- Taxonomic composition - Abundance	No	No construction works, including wind turbines or access roads, are proposed adjacent to the INAGH (ENNISTYMON)_040, with the closest point to works being approx. 170m distant, as shown in Figure 4.1. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for aquatic flora (macrophytes and phytobenthos). Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.
Benthic invertebrate fauna	- Taxonomic composition - Abundance - Level of diversity - Ratio of disturbance sensitive taxa to insensitive taxa	No	No construction works, including wind turbines or access roads, are proposed adjacent to the INAGH (ENNISTYMON)_040, with the closest point to works being approx. 170m distant, as shown in Figure 4.1. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for benthic invertebrate fauna. Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.
Fish	- Species composition - Abundance - Type-specific disturbance-sensitive species present - Age structure	No	No construction works, including wind turbines or access roads, are proposed adjacent to the INAGH (ENNISTYMON)_040, with the closest point to works being approx. 170m distant, as shown in Figure 4.1. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for fish. Fish migration will not be at risk as a result of the proposed activities. Construction activities will be temporary and will not impact the waterbody directly, so do not pose a direct risk to fish.

			Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.
Phytoplankton	- Taxonomic composition - Abundance - Planktonic bloom status	No	No construction works, including wind turbines or access roads, are proposed adjacent to the INAGH (ENNISTYMON)_040, with the closest point to works being approx. 170m distant, as shown in Figure 4.1. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for phytoplankton. Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.

Table 4-2: Scoping of hydromorphological quality elements for INAGH (ENNISTYMON)_040

Quality element	Assessment criteria	Potential risk to receptor?	Justification
Hydrological regime	- Quantity and dynamics of water flow - Connection to groundwater bodies	No	No works are proposed in or adjacent to the waterbody or its riverbank. Surface water runoff will not discharge directly to the watercourse at any point, but will instead discharge over vegetated surfaces via buffered outfall and level spreaders. A minor reduction in surface water runoff rates may occur, but this does not represent an impact to the overall hydrological regime given the small volumes of runoff from the site relative to the scale of the waterbody. During construction there will be no discharge of site runoff or water without agreement of the relevant authorities and an appropriate discharge licence, if relevant. As per the drainage management measures outlined in the EIAR, a temporary surface water attenuation tank / settling pond will be installed during construction to collect surface water from all active working areas. Excess stormwater can be conveyed to this holding pond if and when necessary.
River continuity	- Lateral connectivity - Longitudinal connectivity	No	No works are proposed in or adjacent to the waterbody or its riverbank, so there will be no resultant impact on river continuity. Operational phase impacts are not anticipated as the scheme does not require any interventions in the river channel itself or its riparian zone, and so will not affect its connectivity.
Morphological conditions	- River depth and width variation - Structure and substrate	No	No works are proposed in or adjacent to the waterbody or its riverbank. Surface water will not discharge directly to the watercourse at any point, but will instead discharge over vegetated surfaces via buffered outfall and level spreaders, so there will be no resultant impact on morphological conditions as fine sediment will be filtered via

	of riverbed - Structure of the riparian zone		these measures. Operational phase impacts are not anticipated as the scheme does not require any interventions in the river channel itself or its riparian zone.
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Table 4-3: Scoping of physico-chemical quality elements for INAGH (ENNISTYMON)_040

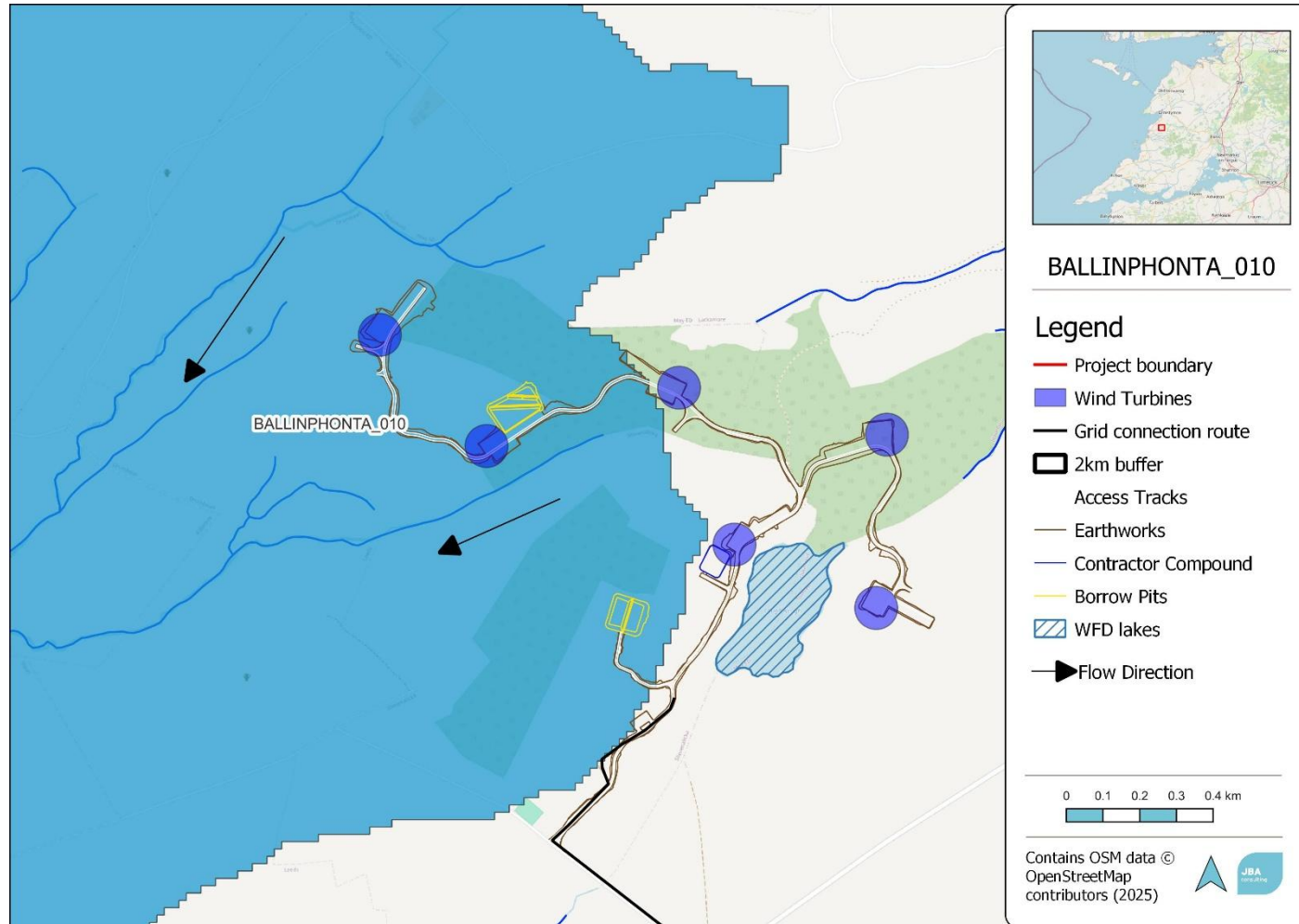
Quality element	Assessment criteria	Potential risk to receptor?	Justification
General	- Thermal conditions - Oxygenation conditions - Salinity - Acidification status - Nutrient conditions	No	Without design measures in place, the construction phase could lead to the mobilisation of fine sediment in surface water, which could lead to a deterioration in status. This is not expected to occur due to the measures included in the EIAR and CEMP. No direct discharges to the watercourse will occur due to the drainage design as outlined in the EIAR. Operational phase impacts are not anticipated due to the design and nature of the scheme, which includes attenuation and hydrocarbon interceptors.
Specific pollutants	- Pollution by all priority substances identified as being discharged into the body of water - Pollution by other substances identified as being discharged in significant quantities into the body of water	No	Without mitigation measures in place, the construction phase could lead to the accidental spills of hydrocarbons (such as from construction vehicles) to surface water draining to the watercourse. This is not expected to occur due to the measures included in the EIAR and CEMP. Without design measures in place, pollutants such as hydrocarbons from cars on-site could discharge to WFD waterbodies via the surface drainage infrastructure from the site. Direct discharge will not occur, with surface water passing through a settlement pond/attenuation tank and hydrocarbon interceptor before discharging via level spreaders to vegetated surfaces.

Table 4-4: Scoping summary assessment for INAGH (ENNISTYMON)_040

Receptor	Potential risk to receptor?	Note the risk issue(s) for impact assessment	Further assessment and/or mitigation required?
Hydromorphology quality	No	No works are proposed in or adjacent to the waterbody or its riverbank, nor will there be direct discharges to the watercourse. No direct morphological impacts are therefore likely. Construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact Hydromorphology quality.	No further assessment required.

Biological quality	No	No in-channel works or works along banks are proposed, so there will be no direct risk to habitats or species. Construction activities could result in suspended solids or pollutants entering the watercourse from the site. However, these construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact Biological quality.	No further assessment required.
Physico-Chemical quality	No	There will be no long-term change to general chemical quality elements as a result of the proposed development. Construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact physico-chemical quality	No further assessment required.

4.2.2 BALLINPHONTA_010 (RWB)



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Figure 4.2: BALLINPHONTA_010 river waterbody

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Table 4-5: Scoping of biological quality elements BALLINPHONTA_010

Quality element	Assessment criteria	Potential risk to receptor?	Justification
Aquatic flora (macrophytes and phytobenthos)	- Taxonomic composition - Abundance	No	No construction works, including wind turbines or access roads, are proposed adjacent to the BALLINPHONTA_010, with the closest point to works being approx. 60m distant, as shown in Figure 4.2. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for aquatic flora (macrophytes and phytobenthos). Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.
Benthic invertebrate fauna	- Taxonomic composition - Abundance - Level of diversity - Ratio of disturbance sensitive taxa to insensitive taxa	No	No construction works, including wind turbines or access roads, are proposed adjacent to the BALLINPHONTA_010, with the closest point to works being approx. 60m distant, as shown in Figure 4.2. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for benthic invertebrate fauna. Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.
Fish	- Species composition - Abundance - Type-specific disturbance-sensitive species present - Age structure	No	No construction works, including wind turbines or access roads, are proposed adjacent to the BALLINPHONTA_010, with the closest point to works being approx. 60m distant, as shown in Figure 4.2. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for fish. Fish migration will not be at risk as a result of the proposed activities. Construction activities will be temporary and will not impact the waterbody directly, so do not pose a direct risk to fish.

			Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.
Phytoplankton	- Taxonomic composition - Abundance - Planktonic bloom status	No	No construction works, including wind turbines or access roads, are proposed adjacent to the BALLINPHONTA_010, with the closest point to works being approx. 60m distant, as shown in Figure 4.2. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for phytoplankton. Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.

Table 4-6: Scoping of hydromorphological quality elements for BALLINPHONTA_010

Quality element	Assessment criteria	Potential risk to receptor?	Justification
Hydrological regime	- Quantity and dynamics of water flow - Connection to groundwater bodies	No	No works are proposed in or adjacent to the waterbody or its riverbank. Surface water runoff will not discharge directly to the watercourse at any point, but will instead discharge over vegetated surfaces via buffered outfall and level spreaders. A minor reduction in surface water runoff rates may occur, but this does not represent an impact to the overall hydrological regime given the small volumes of runoff from the site relative to the scale of the waterbody. During construction there will be no discharge of site runoff or water without agreement of the relevant authorities and an appropriate discharge licence, if relevant. As per the drainage management measures outlined in the EIAR, a temporary surface water attenuation tank / settling pond will be installed during construction to collect surface water from all active working areas. Excess stormwater can be conveyed to this holding pond if and when necessary.
River continuity	- Lateral connectivity - Longitudinal connectivity	No	No works are proposed in or adjacent to the waterbody or its riverbank, so there will be no resultant impact on river continuity. Operational phase impacts are not anticipated as the scheme does not require any interventions in the river channel itself or its riparian zone, and so will not affect its connectivity.
Morphological conditions	- River depth and width variation	No	No works are proposed in or adjacent to the waterbody or its riverbank. Surface water will not discharge directly to the watercourse at any point, but will instead discharge over vegetated surfaces via buffered outfall and level

	- Structure and substrate of riverbed - Structure of the riparian zone	spreaders, so there will be no resultant impact on morphological conditions. Operational phase impacts are not anticipated as the scheme does not require any interventions in the river channel itself or its riparian zone, and so will not affect its connectivity.
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Table 4-7 : Scoping of physico-chemical quality elements for BALLINPHONTA_010 RWB

Quality element	Assessment criteria	Potential risk to receptor?	Justification
General	- Thermal conditions - Oxygenation conditions - Salinity - Acidification status - Nutrient conditions	No	Without design measures in place, the construction phase could lead to the mobilisation of fine sediment in surface water, which could lead to a deterioration in status. This is not expected to occur due to the measures included in the EIAR and CEMP. No direct discharges to the watercourse will occur due to the drainage design as outlined in the EIAR. Operational phase impacts are not anticipated due to the design and nature of the scheme, which includes attenuation and hydrocarbon interceptors.
Specific pollutants	- Pollution by all priority substances identified as being discharged into the body of water - Pollution by other substances identified as being discharged in significant quantities into the body of water	No	Without mitigation measures in place, the construction phase could lead to the accidental spills of hydrocarbons (such as from construction vehicles) to surface water draining to the watercourse. This is not expected to occur due to the measures included in the EIAR and CEMP. Without design measures in place, pollutants such as hydrocarbons from cars on-site could discharge to WFD waterbodies via the surface drainage infrastructure from the site. Direct discharge will not occur, with surface water passing through a settlement pond/attenuation tank and hydrocarbon interceptor before discharging via level spreaders to vegetated surfaces.

Table 4-8: Scoping summary assessment for BALLINPHONTA_010 RWB

Receptor	Potential risk to receptor?	Note the risk issue(s) for impact assessment	Further assessment and/or mitigation required?
Hydromorphology quality	No	No works are proposed in or adjacent to the waterbody or its riverbank, nor will there be direct discharges to the watercourse. No direct morphological impacts are therefore likely. Construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact Hydromorphology quality.	No further assessment required.

Biological quality	No	No in-channel works or works along banks are proposed, so there will be no direct risk to habitats or species. Construction activities could result in suspended solids or pollutants entering the watercourse from the site. However, these construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact Biological quality.	No further assessment required.
Physico-Chemical quality	No	There will be no long-term change to general chemical quality elements as a result of the proposed development. Construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact physico-chemical quality.	No further assessment required.

4.2.3 GLENDINE (CLARE)_010

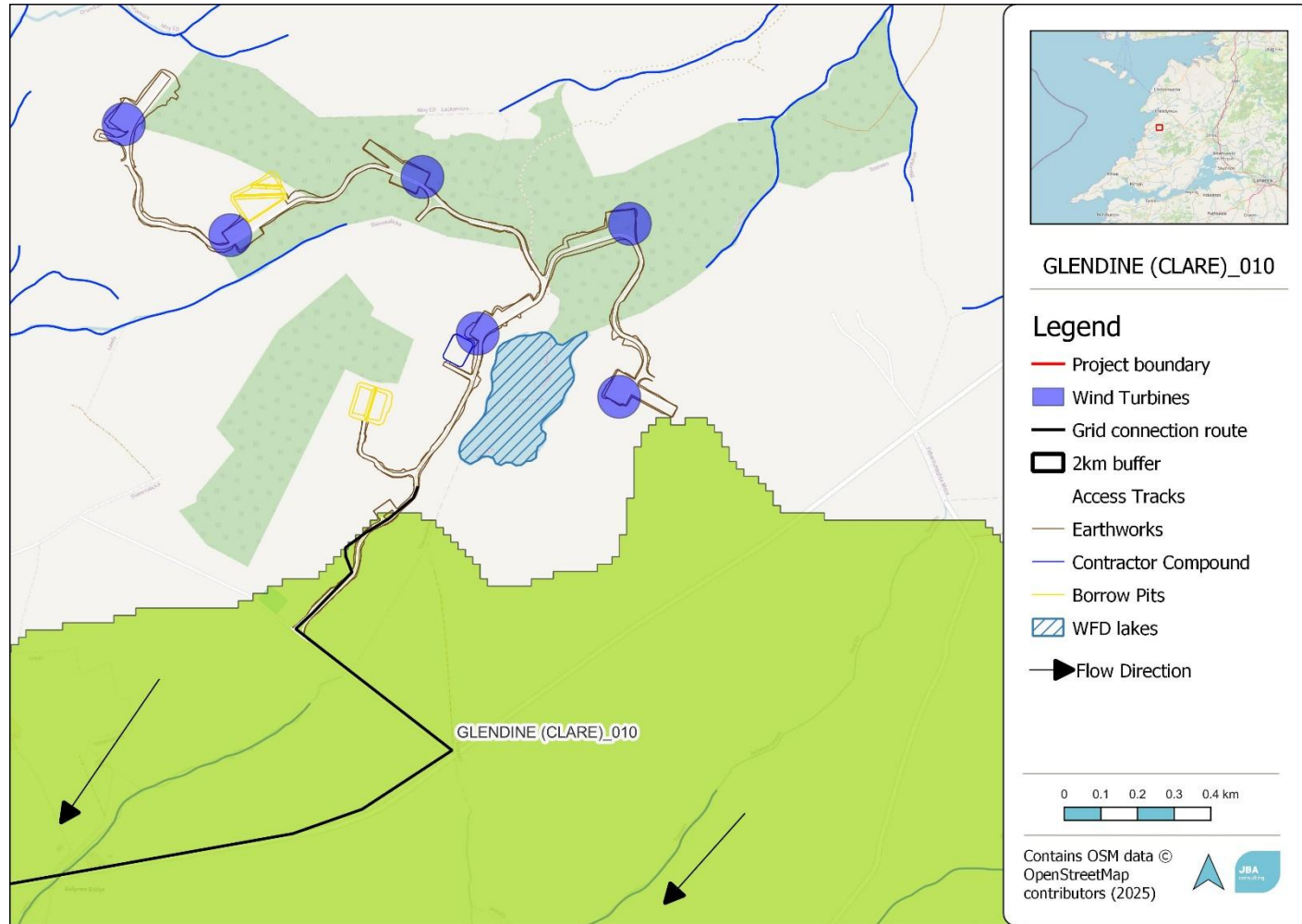


Figure 4.3: GLENDINE (CLARE)_010 river waterbody

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Table 4-8: Scoping of biological quality elements for GLENDINE (CLARE)_010

Quality element	Assessment criteria	Potential risk to receptor?	Justification
Aquatic flora (macrophytes and phytobenthos)	- Taxonomic composition - Abundance	No	No wind turbines or access roads are proposed adjacent to the GLENDINE (CLARE)_010, with the closest point to works being approx. 150m distant, as shown in Figure 4.3. The only direct interaction is the grid connection route, which will cross the watercourse at four points as shown in Figure 4.3. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for aquatic flora (macrophytes and phytobenthos). Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.
Benthic invertebrate fauna	- Taxonomic composition - Abundance - Level of diversity - Ratio of disturbance sensitive taxa to insensitive taxa	No	No wind turbines or access roads are proposed adjacent to the GLENDINE (CLARE)_010, with the closest point to works being approx. 150m distant, as shown in Figure 4.3. The only direct interaction is the grid connection route, which will cross the watercourse at four points as shown in Figure 4.3. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for benthic invertebrate fauna. Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.
Fish	- Species composition - Abundance - Type-specific disturbance-sensitive species present - Age structure	No	No wind turbines or access roads are proposed adjacent to the GLENDINE (CLARE)_010, with the closest point to works being approx. 150m distant, as shown in Figure 4.3. The only direct interaction is the grid connection route, which will cross the watercourse at four points as shown in Figure 4.3. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for fish.

			Fish migration will not be at risk as a result of the proposed activities. Construction activities will be temporary and will not impact the waterbody directly, so do not pose a direct risk to fish. Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.
Phytoplankton	- Taxonomic composition - Abundance - Planktonic bloom status	No	No wind turbines or access roads are proposed adjacent to the GLENDINE (CLARE)_010, with the closest point to works being approx. 150m distant, as shown in Figure 4.3. The only direct interaction is the grid connection route, which will cross the watercourse at four points as shown in Figure 4.3. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for phytoplankton. Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.

Table 4-9: Scoping of hydromorphological quality elements for GLENDINE (CLARE)_010

Quality element	Assessment criteria	Potential risk to receptor?	Justification
Hydrological regime	- Quantity and dynamics of water flow - Connection to groundwater bodies	No	No works are proposed in or adjacent to the waterbody or its riverbank. Surface water runoff will not discharge directly to the watercourse at any point, but will instead discharge over vegetated surfaces via buffered outfall and level spreaders. A minor reduction in surface water runoff rates may occur, but this does not represent an impact to the overall hydrological regime given the small volumes of runoff from the site relative to the scale of the waterbody. During construction there will be no discharge of site runoff or water without agreement of the relevant authorities and an appropriate discharge licence, if relevant. As per the drainage management measures outlined in the EIAR, a temporary surface water attenuation tank / settling pond will be installed during construction to collect surface water from all active working areas. Excess stormwater can be conveyed to this holding pond if and when necessary.
River continuity	- Lateral connectivity - Longitudinal connectivity	No	No works are proposed in or adjacent to the waterbody or its riverbank, so there will be no resultant impact on river continuity. Operational phase impacts are not anticipated as the scheme does not require any interventions in the river

			channel itself or its riparian zone, and so will not affect its connectivity.
Morphological conditions	- River depth and width variation - Structure and substrate of riverbed - Structure of the riparian zone	No	No works are proposed in or adjacent to the waterbody or its riverbank. Surface water will not discharge directly to the watercourse at any point, but will instead discharge over vegetated surfaces via buffered outfall and level spreaders, so there will be no resultant impact on morphological conditions as fine sediment will be filtered via these measures. Operational phase impacts are not anticipated as the scheme does not require any interventions in the river channel itself or its riparian zone.

Table 4-10: Scoping of physico-chemical quality elements for GLENDINE (CLARE)_010

Quality element	Assessment criteria	Potential risk to receptor?	Justification
General	- Thermal conditions - Oxygenation conditions - Salinity - Acidification status - Nutrient conditions	No	Without design measures in place, the construction phase could lead to the mobilisation of fine sediment in surface water, which could lead to a deterioration in status. This is not expected to occur due to the measures included in the EIAR and CEMP. No direct discharges to the watercourse will occur due to the drainage design as outlined in the EIAR. Operational phase impacts are not anticipated due to the design and nature of the scheme, which includes attenuation and hydrocarbon interceptors.
Specific pollutants	- Pollution by all priority substances identified as being discharged into the body of water - Pollution by other substances identified as being discharged in significant quantities into the body of water	Yes	Without mitigation measures in place, the construction phase could lead to the accidental spills of hydrocarbons (such as from construction vehicles) to surface water draining to the watercourse. This is not expected to occur due to the measures included in the EIAR and CEMP. Without design measures in place, pollutants such as hydrocarbons from cars on-site could discharge to WFD waterbodies via the surface drainage infrastructure from the site. Direct discharge will not occur, with surface water passing through a settlement pond/attenuation tank and hydrocarbon interceptor before discharging via level spreaders to vegetated surfaces.

Table 4-11: Scoping summary assessment for GLENDINE (CLARE)_010 RWB

Receptor	Potential risk to receptor?	Note the risk issue(s) for impact assessment	Further assessment and/or mitigation required?
Hydromorphology quality	No	No works are proposed in or adjacent to the waterbody or its riverbank, nor will there be direct discharges to the watercourse. No direct morphological impacts are therefore likely. Construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP	No further assessment required.

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		and EIAR. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact Hydromorphology quality.	
Biological quality	No	No in-channel works or works along banks are proposed, so there will be no direct risk to habitats or species. Construction activities could result in suspended solids or pollutants entering the watercourse from the site. However, these construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact Biological quality.	No further assessment required.
Physico-Chemical quality	No	There will be no long-term change to general chemical quality elements as a result of the proposed development. Construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact physico-chemical quality.	No further assessment required.

4.2.4 KILDEEMA_010

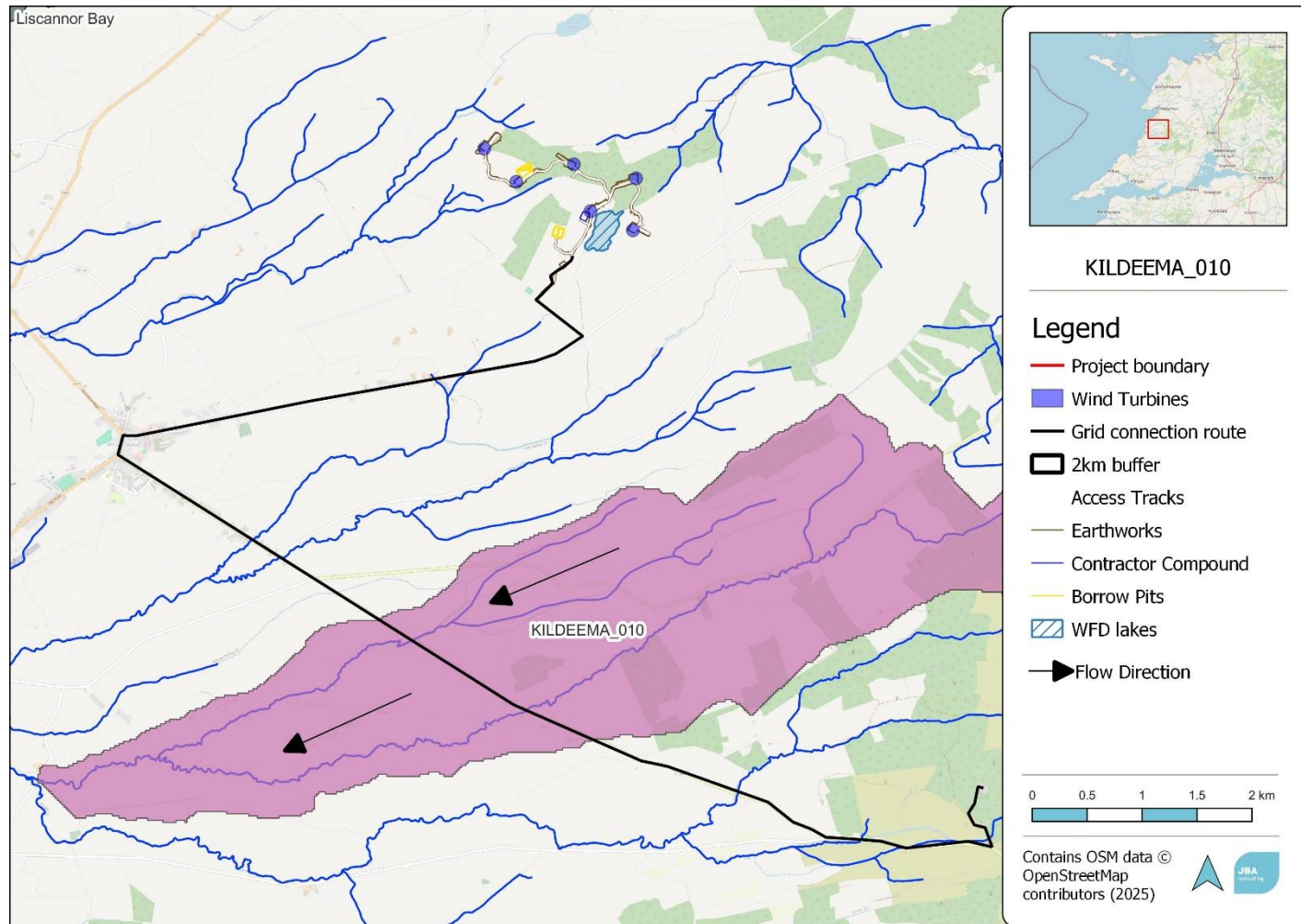


Figure 4.4: KILDEEMA_010 river waterbody

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Table 4-12: Scoping of biological quality elements for KILDEEMA_010

Quality element	Assessment criteria	Potential risk to receptor?	Justification
Aquatic flora (macrophytes and phytobenthos)	- Taxonomic composition - Abundance	No	Apart from the grid connection route, the proposed development site is not within this waterbody sub-basin. The only direct interaction is the grid connection route, which will cross the watercourse at two points as shown in Figure 4.4. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for aquatic flora (macrophytes and phytobenthos). Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.
Benthic invertebrate fauna	- Taxonomic composition - Abundance - Level of diversity - Ratio of disturbance sensitive taxa to insensitive taxa	No	Apart from the grid connection route, the proposed development site is not within this waterbody sub-basin. The only direct interaction is the grid connection route, which will cross the watercourse at two points as shown in Figure 4.4. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for benthic invertebrate fauna. Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.
Fish	- Species composition - Abundance - Type-specific disturbance-sensitive species present - Age structure	No	Apart from the grid connection route, the proposed development site is not within this waterbody sub-basin. The only direct interaction is the grid connection route, which will cross the watercourse at two points as shown in Figure 4.4. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for fish. Fish migration will not be at risk as a result of the proposed activities. Construction activities will be temporary and will not impact the waterbody directly, so do not pose a direct risk to fish.

			Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.
Phytoplankton	- Taxonomic composition - Abundance - Planktonic bloom status	No	Apart from the grid connection route, the proposed development site is not within this waterbody sub-basin. The only direct interaction is the grid connection route, which will cross the watercourse at two points as shown in Figure 4.4. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for phytoplankton. Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.

Table 4-13: Scoping of hydromorphological quality elements for KILDEEMA_010

Quality element	Assessment criteria	Potential risk to receptor?	Justification
Hydrological regime	- Quantity and dynamics of water flow - Connection to groundwater bodies	No	No works are proposed in or adjacent to the waterbody or its riverbank. Surface water runoff will not discharge directly to the watercourse at any point, but will instead discharge over vegetated surfaces via buffered outfall and level spreaders. A minor reduction in surface water runoff rates may occur, but this does not represent an impact to the overall hydrological regime given the small volumes of runoff from the site relative to the scale of the waterbody. During construction there will be no discharge of site runoff or water without agreement of the relevant authorities and an appropriate discharge licence, if relevant. As per the drainage management measures outlined in the EIAR, a temporary surface water attenuation tank / settling pond will be installed during construction to collect surface water from all active working areas. Excess stormwater can be conveyed to this holding pond if and when necessary.
River continuity	- Lateral connectivity - Longitudinal connectivity	No	No works are proposed in or adjacent to the waterbody or its riverbank, so there will be no resultant impact on river continuity. Operational phase impacts are not anticipated as the scheme does not require any interventions in the river channel itself or its riparian zone, and so will not affect its connectivity.
Morphological conditions	- River depth and width variation - Structure and substrate	No	No works are proposed in or adjacent to the waterbody or its riverbank. Surface water will not discharge directly to the watercourse at any point, but will instead discharge over vegetated surfaces via buffered outfall and level spreaders, so there will be no resultant impact on morphological conditions as fine sediment will be

	of riverbed - Structure of the riparian zone		filtered via these measures. Operational phase impacts are not anticipated as the scheme does not require any interventions in the river channel itself or its riparian zone.
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Table 4-14: Scoping of physico-chemical quality elements for KILDEEMA_010

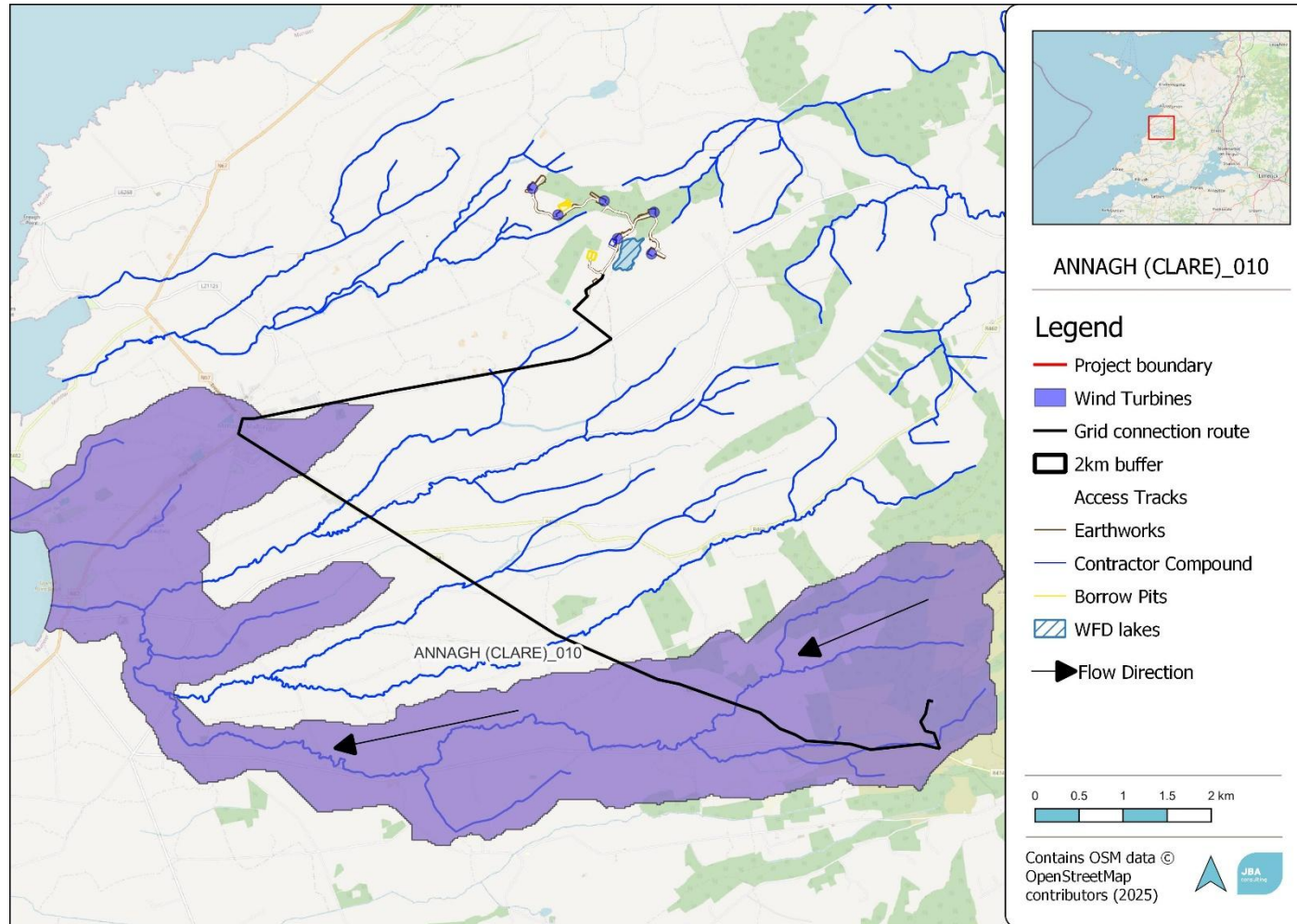
Quality element	Assessment criteria	Potential risk to receptor?	Justification
General	- Thermal conditions - Oxygenation conditions - Salinity - Acidification status - Nutrient conditions	No	Without design measures in place, the construction phase could lead to the mobilisation of fine sediment in surface water, which could lead to a deterioration in status. This is not expected to occur due to the measures included in the EIAR and CEMP. No direct discharges to the watercourse will occur due to the drainage design as outlined in the EIAR. Operational phase impacts are not anticipated due to the design and nature of the scheme, which includes attenuation and hydrocarbon interceptors.
Specific pollutants	- Pollution by all priority substances identified as being discharged into the body of water - Pollution by other substances identified as being discharged in significant quantities into the body of water	Yes	Without mitigation measures in place, the construction phase could lead to the accidental spills of hydrocarbons (such as from construction vehicles) to surface water draining to the watercourse. This is not expected to occur due to the measures included in the EIAR and CEMP. Without design measures in place, pollutants such as hydrocarbons from cars on-site could discharge to WFD waterbodies via the surface drainage infrastructure from the site. Direct discharge will not occur, with surface water passing through a settlement pond/attenuation tank and hydrocarbon interceptor before discharging via level spreaders to vegetated surfaces.

Table 4-15: Scoping summary assessment for KILDEEMA_010 RWB

Receptor	Potential risk to receptor?	Note the risk issue(s) for impact assessment	Further assessment and/or mitigation required?
Hydromorphology quality	No	No works are proposed in or adjacent to the waterbody or its riverbank, nor will there be direct discharges to the watercourse. No direct morphological impacts are therefore likely. Construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact Hydromorphology quality.	No further assessment required.

Biological quality	No	No in-channel works or works along banks are proposed, so there will be no direct risk to habitats or species. Construction activities could result in suspended solids or pollutants entering the watercourse from the site. However, these construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact Biological quality.	No further assessment required.
Physico-Chemical quality	No	There will be no long-term change to general chemical quality elements as a result of the proposed development. Construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact physico-chemical quality.	No further assessment required.

4.2.5 ANNAGH (CLARE)_010



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Figure 4.5: ANNAGH (CLARE)_010 river waterbody

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Table 4-16: Scoping of biological quality elements for ANNAGH (CLARE)_010

Quality element	Assessment criteria	Potential risk to receptor?	Justification
Aquatic flora (macrophytes and phytobenthos)	- Taxonomic composition - Abundance	No	Apart from the grid connection route, the proposed development site is not within this waterbody sub-basin. The only direct interaction is the grid connection route, which will cross the watercourse at two points as shown in Figure 4.5. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for aquatic flora (macrophytes and phytobenthos). Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.
Benthic invertebrate fauna	- Taxonomic composition - Abundance - Level of diversity - Ratio of disturbance sensitive taxa to insensitive taxa	No	Apart from the grid connection route, the proposed development site is not within this waterbody sub-basin. The only direct interaction is the grid connection route, which will cross the watercourse at two points as shown in Figure 4.5. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for benthic invertebrate fauna. Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.
Fish	- Species composition - Abundance - Type-specific disturbance-sensitive species present - Age structure	No	Apart from the grid connection route, the proposed development site is not within this waterbody sub-basin. The only direct interaction is the grid connection route, which will cross the watercourse at two points as shown in Figure 4.5. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for fish. Fish migration will not be at risk as a result of the proposed activities. Construction activities will be temporary and will not impact the waterbody directly, so do not pose a direct risk to fish.

			Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.
Phytoplankton	- Taxonomic composition - Abundance - Planktonic bloom status	No	Apart from the grid connection route, the proposed development site is not within this waterbody sub-basin. The only direct interaction is the grid connection route, which will cross the watercourse at two points as shown in Figure 4.5. Construction phase impacts are not anticipated due to the design of the proposed development which primarily avoids direct impacts with surface waterbodies, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact the habitat available for phytoplankton. Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are adjacent to the watercourse in this sub-basin. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors.

Table 4-17: Scoping of hydromorphological quality elements for ANNAGH (CLARE)_010

Quality element	Assessment criteria	Potential risk to receptor?	Justification
Hydrological regime	- Quantity and dynamics of water flow - Connection to groundwater bodies	No	No works are proposed in or adjacent to the waterbody or its riverbank. Surface water runoff will not discharge directly to the watercourse at any point, but will instead discharge over vegetated surfaces via buffered outfall and level spreaders. A minor reduction in surface water runoff rates may occur, but this does not represent an impact to the overall hydrological regime given the small volumes of runoff from the site relative to the scale of the waterbody. During construction there will be no discharge of site runoff or water without agreement of the relevant authorities and an appropriate discharge licence, if relevant. As per the drainage management measures outlined in the EIAR, a temporary surface water attenuation tank / settling pond will be installed during construction to collect surface water from all active working areas. Excess stormwater can be conveyed to this holding pond if and when necessary.
River continuity	- Lateral connectivity - Longitudinal connectivity	No	No works are proposed in or adjacent to the waterbody or its riverbank, so there will be no resultant impact on river continuity. Operational phase impacts are not anticipated as the scheme does not require any interventions in the river channel itself or its riparian zone, and so will not affect its connectivity.
Morphological conditions	- River depth and width variation - Structure and substrate	No	No works are proposed in or adjacent to the waterbody or its riverbank. Surface water will not discharge directly to the watercourse at any point, but will instead discharge over vegetated surfaces via buffered outfall and level spreaders, so there will be no resultant impact on morphological conditions as fine sediment will be

	of riverbed - Structure of the riparian zone		filtered via these measures. Operational phase impacts are not anticipated as the scheme does not require any interventions in the river channel itself or its riparian zone.
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Table 4-18: Scoping of physico-chemical quality elements for ANNAGH (CLARE)_010

Quality element	Assessment criteria	Potential risk to receptor?	Justification
General	- Thermal conditions - Oxygenation conditions - Salinity - Acidification status - Nutrient conditions	No	Without design measures in place, the construction phase could lead to the mobilisation of fine sediment in surface water, which could lead to a deterioration in status. This is not expected to occur due to the measures included in the EIAR and CEMP. No direct discharges to the watercourse will occur due to the drainage design as outlined in the EIAR. Operational phase impacts are not anticipated due to the design and nature of the scheme, which includes attenuation and hydrocarbon interceptors.
Specific pollutants	- Pollution by all priority substances identified as being discharged into the body of water - Pollution by other substances identified as being discharged in significant quantities into the body of water	Yes	Without mitigation measures in place, the construction phase could lead to the accidental spills of hydrocarbons (such as from construction vehicles) to surface water draining to the watercourse. This is not expected to occur due to the measures included in the EIAR and CEMP. Without design measures in place, pollutants such as hydrocarbons from cars on-site could discharge to WFD waterbodies via the surface drainage infrastructure from the site. Direct discharge will not occur, with surface water passing through a settlement pond/attenuation tank and hydrocarbon interceptor before discharging via level spreaders to vegetated surfaces.

Table 4-19: Scoping summary assessment for ANNAGH (CLARE)_010 RWB

Receptor	Potential risk to receptor?	Note the risk issue(s) for impact assessment	Further assessment and/or mitigation required?
Hydromorphology quality	No	No works are proposed in or adjacent to the waterbody or its riverbank, nor will there be direct discharges to the watercourse. No direct morphological impacts are therefore likely. Construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants during construction. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact Hydromorphology quality.	No further assessment required.

Biological quality	No	No in-channel works or works along banks are proposed, so there will be no direct risk to habitats or species. Construction activities could result in suspended solids or pollutants entering the watercourse from the site. However, these construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact Biological quality.	No further assessment required.
Physico-Chemical quality	No	There will be no long-term change to general chemical quality elements as a result of the proposed development. Construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact physico-chemical quality.	No further assessment required.

4.2.6 Miltown Malbay groundwater body (GWB)

Table 4-20 below describes the quality elements of the waterbody and potential impacts as a result of the proposed development.

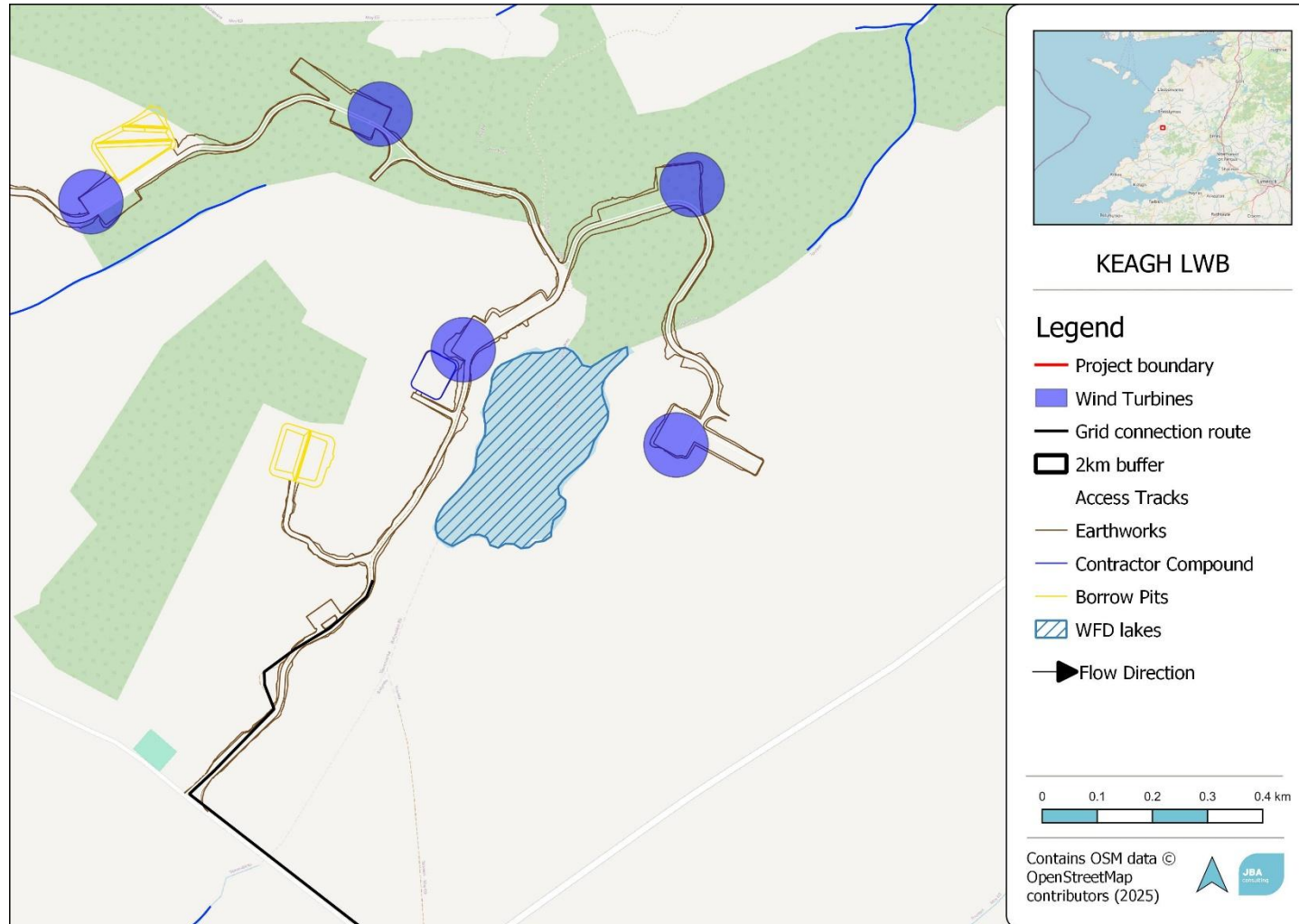
Table 4-20: Scoping of physico-chemical quality elements for Miltown Malbay GWB

Quality element	Assessment criteria	Potential risk to receptor?	Justification	Further assessment and/or mitigation required?
Quantitative status	- Groundwater level regime	No	During construction, temporary dewatering of excavations may be required. The area to be dewatered (i.e., turbine foundations) is a small part of the overall site area and forms a small portion of the larger surrounding groundwater body. Considering the characteristics of the groundwater body and the location of the proposed wind farm on slightly elevated ground relative to the immediately surrounding areas, dewatering requirements are likely to be slight. No significant quantitative effects are likely on the GWB. Mitigation measures for the protection of groundwater are contained in the EIAR Chapter 9 (Land, Soil, Geology and Hydrogeology) and in the CEMP. Once operational, no impacts on groundwater level are anticipated. Any temporary dewatering which occurred during construction will reverse as natural recharge occurs. The proposed wind turbines have been designed to minimise changes to natural flow pathways.	No further assessment required.
Chemical status	- Conductivity - Concentrations of pollutants	No	The construction phase could lead to the mobilisation of sediment in surface water or accidental release of pollutants, which could intercept to ground and to the groundwater body. However, mitigation measures outlined in the EIAR and CEMP will ensure that these impacts are limited and not significant.	No further assessment required.

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			The operational drainage design of the proposed development includes SuDS measures, hydrocarbon interceptors, and attenuation storage areas which will ensure that surface water discharging from the site is of good quality.	
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4.2.7 Keagh lake waterbody (LWB)



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Figure 4.6: Lough Keagh LWB

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Table 4-21: Scoping of biological quality elements Keagh LWB

Quality element	Assessment criteria	Potential risk to receptor?	Justification
Aquatic flora	- Taxonomic composition - Abundance	No	No works are taking place in or immediately adjacent to Lough Keagh. Turbines 3 and 6 are the closest to the lake waterbody, approx. 60 and 120m distant respectively. The existing access track also passes within approx. 30m of the lake's western side. Construction phase impacts are not anticipated due to the design of the proposed development which avoids direct impacts with the lake, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the lake, and/or remove the potential source of contaminants that would impact the habitat available for aquatic flora. Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are in or immediately adjacent to the lake. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors, which will ensure that there will be no direct discharges of water to the lake from the adjacent access track or other infrastructure elements.
Benthic invertebrate fauna	- Taxonomic composition - Abundance	No	No works are taking place in or immediately adjacent to Lough Keagh. Turbines 3 and 6 are the closest to the lake waterbody, approx. 60 and 120m distant respectively. The existing access track also passes within approx. 30m of the lake's western side. Construction phase impacts are not anticipated due to the design of the proposed development which avoids direct impacts with the lake, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the lake, and/or remove the potential source of contaminants that would impact the habitat available for benthic invertebrate fauna. Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are in or immediately adjacent to the lake. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors, which will ensure that there will be no direct discharges of water to the lake from the adjacent access track or other infrastructure elements.
Fish	- Species composition - Abundance - Age structure	No	No works are taking place in or immediately adjacent to Lough Keagh. Turbines 3 and 6 are the closest to the lake waterbody, approx. 60 and 120m distant respectively. The existing access track also passes within approx. 30m of the lake's western side. Construction phase impacts are not anticipated due to the design of the proposed development which avoids direct

			impacts with the lake, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the lake, and/or remove the potential source of contaminants that would impact the habitat available for fish. Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are in or immediately adjacent to the lake. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors, which will ensure that there will be no direct discharges of water to the lake from the adjacent access track or other infrastructure elements.
Phytoplankton	- Taxonomic composition - Abundance - Biomass	No	No works are taking place in or immediately adjacent to Lough Keagh. Turbines 3 and 6 are the closest to the lake waterbody, approx. 60 and 120m distant respectively. The existing access track also passes within approx. 30m of the lake's western side. Construction phase impacts are not anticipated due to the design of the proposed development which avoids direct impacts with the lake, and the surface water management measures included in the design as part of the EIAR and CEMP. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants discharging from site to the watercourse during construction. The design measures will effectively break any pathway from the site to the lake, and/or remove the potential source of contaminants that would impact the habitat available for phytoplankton. Operational phase impacts are not anticipated due to the design of the scheme. No parts of the proposed wind farm layout are in or immediately adjacent to the lake. The operational drainage design along access tracks includes settlement ponds and hydrocarbon interceptors, which will ensure that there will be no direct discharges of water to the lake from the adjacent access track or other infrastructure elements.

Table 4-22: Scoping of hydromorphological quality elements for Keagh LWB

Quality element	Assessment criteria	Potential risk to receptor?	Justification
Hydrological regime	- Quantity and dynamics of water flow - Residence time - Connection to the groundwater body	No	No works are proposed in or immediately adjacent to the waterbody or its lakeshore. Surface water will not discharge directly to the waterbody at any point or the river waterbody feeding it, but will instead discharge over vegetated surfaces via buffered outfall and level spreaders, through the surface water management train as outlined in the EIAR Chapter 5. There will therefore be no significant volumetric change to total lake inflows. Also, no quantitative changes are expected on the underlying groundwater body, as outlined previously in this report.
Morphological conditions	- Lake depth variation - Quantity, structure and substrate of lakebed - Structure of the lake shore	No	No works are proposed in or immediately adjacent to the waterbody or its lakeshore, so there will be no resultant impact on morphological conditions.

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Table 4-23 : Scoping of physico-chemical quality elements for Keagh LWB

Quality element	Assessment criteria	Potential risk to receptor?	Justification
General	- Transparency - Thermal conditions - Oxygenation conditions - Salinity - Acidification status - Nutrient conditions	No	Without design measures in place, the construction phase could lead to the mobilisation of fine sediment in surface water feeding the lake waterbody, which could lead to a deterioration in status. This is not expected to occur due to the measures included in the EIAR and CEMP. No direct discharges to the lake will occur due to the drainage design as outlined in the EIAR Chapter 5. Operational phase impacts are not anticipated due to the design and nature of the scheme, which includes attenuation and hydrocarbon interceptors.
Specific pollutants	- Pollution by all priority substances identified as being discharged into the body of water - Pollution by other substances identified as being discharged in significant quantities into the body of water	No	Without mitigation measures in place, the construction phase could lead to the accidental spills of hydrocarbons (such as from construction vehicles) to surface water draining to the watercourse feeding the lake. This is not expected to occur due to the measures included in the EIAR and CEMP. Without design measures in place, pollutants such as hydrocarbons from cars on-site could discharge to WFD waterbodies via the surface drainage infrastructure from the site. Direct discharge will not occur, with surface water passing through a settlement pond/attenuation tank and hydrocarbon interceptor before discharging via level spreaders to vegetated surfaces.

Table 4-8: Scoping summary assessment for Keagh LWB

Receptor	Potential risk to receptor?	Note the risk issue(s) for impact assessment	Further assessment and/or mitigation required?
Hydromorphology quality	No	No works are proposed in or adjacent to the waterbody or its lakeshore, nor will there be direct discharges to the water feeding it. No direct morphological impacts are therefore likely. Construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants during construction. The design measures will effectively break any pathway from the site to the lake, and/or remove the potential source of contaminants that would impact Hydromorphology quality.	No further assessment required.
Biological quality	No	No in-channel works or works along the shore are proposed, so there will be no direct risk to habitats or species. Fish migration will not be at risk as a result of the proposed activities.	No further assessment required.

		Construction activities could result in suspended solids or pollutants entering the waterbody from the site. However, these construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. The design measures will effectively break any pathway from the site to the river, and/or remove the potential source of contaminants that would impact Biological quality.	
Physico-Chemical quality	No	There will be no long-term change to general chemical quality elements as a result of the proposed development. Construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. The design measures will effectively break any pathway from the site to the lake, and/or remove the potential source of contaminants that would impact physico-chemical quality	No further assessment required.

4.2.8 Shannon Plume (CWB)

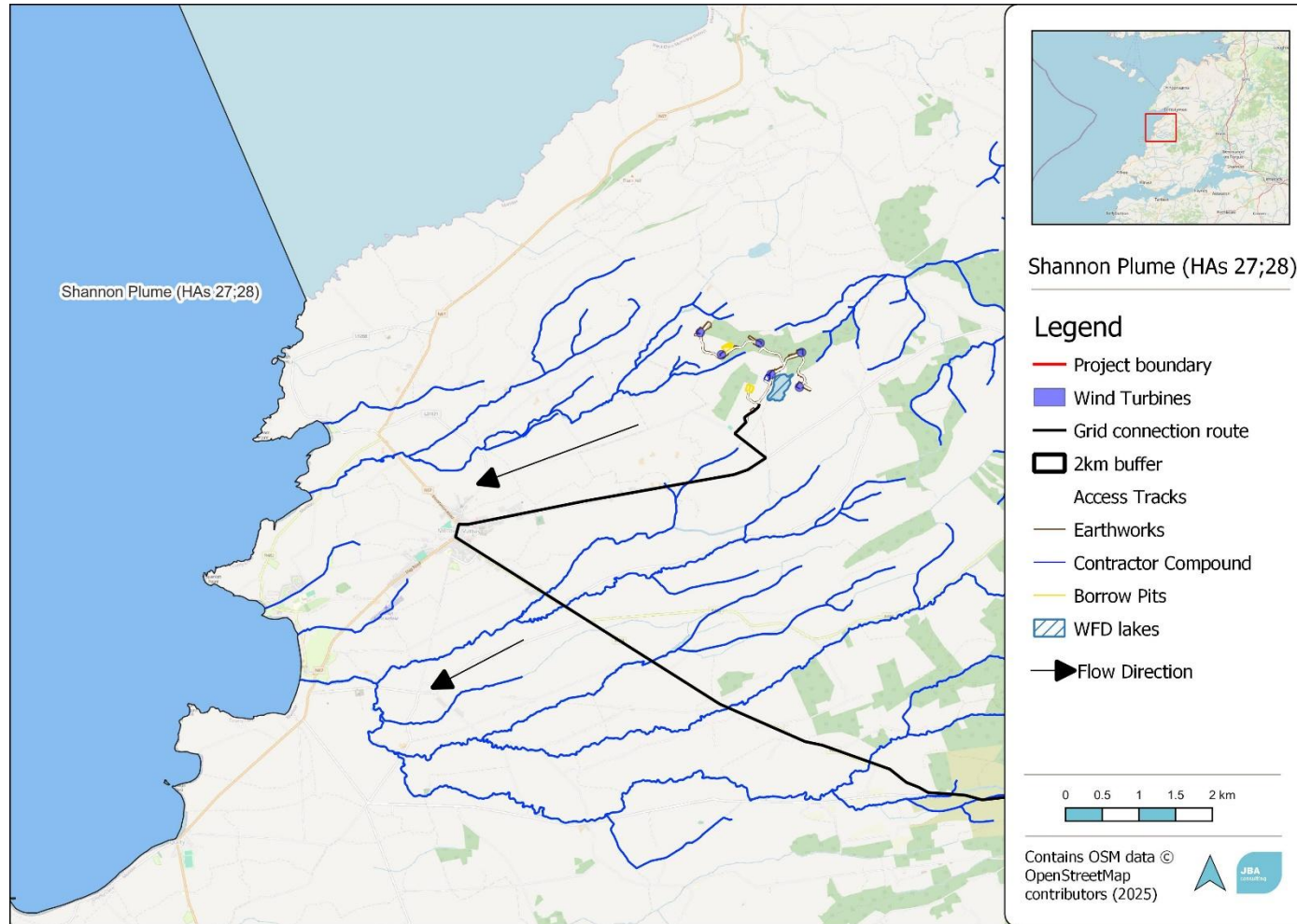


Figure 4.7: Shannon Plume CWB

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Table 4.24: Scoping of biological quality elements for Shannon Plume CWB

Quality element	Assessment criteria	Potential risk to receptor?	Justification
Aquatic flora (macrophytes and phytobenthos)	- Taxonomic composition - Abundance	No	The works will not directly impact the waterbody. Neither construction nor operational phase indirect impacts are anticipated due to the distance downstream to the waterbody, and the nature and design of the proposed development and the inclusion of mitigation measures in the EIAR and CEMP which will break any pathway for potential pollutants from the site to the waterbody via the preceding river waterbodies.
Benthic invertebrate fauna	- Taxonomic composition - Abundance - Level of diversity - Ratio of disturbance sensitive taxa to insensitive taxa	No	The works will not directly impact the waterbody. Neither construction nor operational phase indirect impacts are anticipated due to the distance downstream to the waterbody, and the nature and design of the proposed development and the inclusion of mitigation measures in the EIAR and CEMP which will break any pathway for potential pollutants from the site to the waterbody via the preceding river waterbodies.
Phytoplankton	- Taxonomic composition - Abundance - Biomass	No	The works will not directly impact the waterbody. Neither construction nor operational phase indirect impacts are anticipated due to the distance downstream to the waterbody, and the nature and design of the proposed development and the inclusion of mitigation measures in the EIAR and CEMP which will break any pathway for potential pollutants from the site to the waterbody via the preceding river waterbodies.

Table 4.25: Scoping of hydromorphological quality elements for Shannon Plume CWB

Quality element	Assessment criteria	Potential risk to receptor?	Justification
Tidal regime	- Direction of dominant currents - Wave exposure	No	No works are proposed in or adjacent to the waterbody which would impact on direction of currents or wave exposure. There will be no resultant impact on tidal regime. Operational phase impacts are not anticipated due to the design and nature of the scheme. The development is not in or adjacent to the waterbody and requires no instream works.
Morphological conditions	- Depth variation - Quantity, structure and substrate of coastal bed - Structure of the intertidal zone	No	No works are proposed in or adjacent to the waterbody which would alter the depth, structure, or substrate of the coastal or intertidal zones. Operational phase impacts are not anticipated due to the design and nature of the scheme. The development is not in or adjacent to the waterbody and requires no instream works.

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Table 4.26: Scoping of physico-chemical quality elements for Shannon Plume CWB

Quality element	Assessment criteria	Potential risk to receptor	Justification
General	- Thermal conditions - Oxygenation conditions - Salinity - Transparency - Nutrient conditions	No	The works will not directly impact the waterbody. Neither construction nor operational phase indirect impacts are anticipated due to the distance downstream to the waterbody, and the nature and design of the proposed development and the inclusion of mitigation measures in the EIAR and CEMP which will break any pathway for potential pollutants from the site to the waterbody via the preceding river waterbodies.
Specific pollutants	- Pollution by all priority substances identified as being discharged into the body of water - Pollution by other substances identified as being discharged in significant quantities into the body of water	No	The works will not directly impact the waterbody. Neither construction nor operational phase indirect impacts are anticipated due to the distance downstream to the waterbody, and the nature and design of the proposed development and the inclusion of mitigation measures in the EIAR and CEMP which will break any pathway for potential pollutants from the site to the waterbody via the preceding river waterbodies.

Table 4.27: Scoping summary assessment for Shannon Plume CWB

Receptor	Potential risk to receptor?	Note the risk issue(s) for impact assessment	Further assessment and/or mitigation required?
Hydromorphology quality	No	No works are proposed in or adjacent to the waterbody or its lakeshore, nor will there be direct discharges to the water feeding it. No direct morphological impacts are therefore likely. Construction phase impacts are not anticipated due to the inclusion of design measures in the CEMP and EIAR. These measures will help to capture, control and reduce surface water run-off, suspended solids and pollutants during construction. The design measures will effectively break any pathway from the site to the waterbody, and/or remove the potential source of contaminants that would impact Hydromorphology quality.	No further assessment.
Biological quality	No	No works in or adjacent to the waterbody are proposed, so there will be no direct risk to habitats or species. Neither construction nor operational phase indirect impacts are anticipated due to the distance downstream to the waterbody, the nature and design of the proposed development, and the mitigation measures included in the EIAR and CEMP.	No further assessment.
Chemical quality	No	No works in or adjacent to the waterbody are proposed, so there will be no direct risk to habitats or species. Neither construction nor operational phase indirect impacts are anticipated due to the distance downstream to the waterbody, the nature and design of the proposed development, and the mitigation measures included in the EIAR and CEMP.	No further assessment.

4.3 Scoping Summary

Table 4-28 below summarises the scoping assessment for all screened in WFD waterbodies.

As all waterbodies are scoped out, this assessment does not need to continue to the next stage.

Table 4-28: Scoping assessment summary for all WFD waterbodies

Waterbody	Scoping assessment	Scoping result
INAGH (ENNISTYMON)_040 RWB	The design of the proposed development, and the mitigation measures included in the EIAR and CEMP, are sufficient to ensure that no impact on this waterbody is likely to occur.	Waterbody scoped out
BALLINPHONTA_010 RWB	The design of the proposed development, and the mitigation measures included in the EIAR and CEMP, are sufficient to ensure that no impact on this waterbody is likely to occur.	Waterbody scoped out
GLENDINE (CLARE)_010 RWB	The design of the proposed development, and the mitigation measures included in the EIAR and CEMP, are sufficient to ensure that no impact on this waterbody is likely to occur.	Waterbody scoped out
KILDEEMA_010 RWB	The design of the proposed development, and the mitigation measures included in the EIAR and CEMP, are sufficient to ensure that no impact on this waterbody is likely to occur.	Waterbody scoped out
ANNAGH (CLARE)_010 RWB	The design of the proposed development, and the mitigation measures included in the EIAR and CEMP, are sufficient to ensure that no impact on this waterbody is likely to occur.	Waterbody scoped out
Miltown Malbay GWB	The design of the proposed development, and the mitigation measures included in the EIAR and CEMP, are sufficient to ensure that no impact on this waterbody is likely to occur.	Waterbody scoped out
Keagh LWB	The design of the proposed development, and the mitigation measures included in the EIAR and CEMP, are sufficient to ensure that no impact on this waterbody is likely to occur.	Waterbody scoped out
Shannon Plume (HAS 27;28) CWB	The design of the proposed development, and the mitigation measures included in the EIAR and CEMP, are sufficient to ensure that no impact on this waterbody is likely to occur.	Waterbody scoped out

5 Conclusions

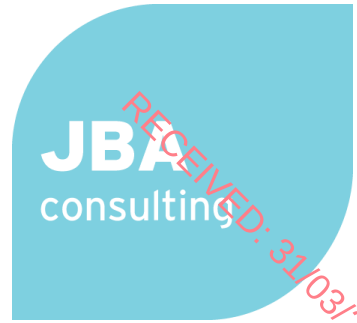
Following the completion of the WFD impact assessment, it is concluded that the proposed development will not impact on the quality elements of the screened in WFD waterbodies when mitigation measures described in Section 4 of this Report are applied.

The Screening Assessment found eight WFD waterbodies with potential pathways from the proposed development. These WFD waterbodies were carried forward to the Scoping stage.

The Scoping Assessment found that the proposed development activities could pose a risk to the status or quality elements of all eight of those WFD waterbodies, either during construction or operation, with no mitigation measures in place.

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

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