Barnesmore Gap Greenway

Appendix 9.1: Water Framework Directive Assessment

Donegal County Council

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1. Introduction

This report presents the Water Framework Directive (WFD) Compliance Assessment for the Barnesmore Gap Greenway, undertaken in accordance with Transport Infrastructure Ireland (TII) Standard PE-ENV-01201. The Standard requires that, where a project has the potential to impact a WFD water body, a proportionate WFD Compliance Assessment is undertaken as part of the environmental evaluation. The Compliance Assessment demonstrates that the Proposed Development will not result in deterioration of the status of water bodies or prevent the achievement of their environmental objectives.

1.1 Project Description

The Barnesmore Gap Greenway project aims to provide an attractive route between the towns of Donegal Town and Ballybofey/Stranorlar in County Donegal, to be used both for recreational purposes and for utility trips by pedestrians, cyclists and people with impaired water dependent mobility across the wider region, enticing users to explore its surrounding towns and villages and further develop the untapped tourism potential within the region. The project also provides the opportunity to highlight the historical and educational significance of such places, whilst promoting the scenic nature of the surrounding area. At Donegal Town the proposed greenway will connect with the international EuroVelo Route 1 which follows the northern, western and southern coastlines around Ireland, and the route also forms part of the proposed National Cycle Network across Ireland. Furthermore, the scheme provides connectivity to schools, urban centres, healthcare facilities, community centres and places of employment, facilitating day to day utility trips for local residents and the wider area.

The proposed route of the greenway mainline is approximately 31km in length and will be a bi-directional shared walking, wheeling, and cycling route. There is a further 6.5km of links which provide additional connectivity and integration to surrounding amenities and active travel routes, which gives a total length of 37.5km for the proposed development. Refer to General Arrangement Drawings (60701883-ACM-HGN-SW_ZZ_ZZ_ZZ-DR-HG-0096-0125) in Volume 3 of the Environmental Impact Assessment Report (EIAR), and **Error! Reference source not found.** to **Error! Reference source not found.** below.

1.2 The Water Framework Directive

The Water Framework Directive (2000/60/EC) establishes a framework for the protection and management of surface water and groundwater bodies. The WFD adopts a holistic approach to the water environment, recognising the interactions between surface water, groundwater and water-dependent ecosystems.

Under the WFD, water bodies are the basic management units and are assigned a status based on their current condition. Environmental objectives for each water body are defined within River Basin Management Plans (RBMPs) and require the achievement or maintenance of Good Status or Good Ecological Potential.

Environmental conditions are assessed using a range of biological, chemical, physico-chemical and hydromorphological Quality Elements. For surface water bodies, overall WFD Status is determined by Ecological Status and Chemical Status. Ecological Status reflects the health of the aquatic ecosystem and is assessed using biological, physico-chemical and hydromorphological elements, while Chemical Status relates to the presence of priority substances and compliance with environmental quality standards. Priority substances are a defined list of pollutants of EU-wide concern, such as metals, pesticides and industrial chemicals, for which environmental quality standards are set to protect aquatic ecosystems and human health.

The overall WFD Status assigned to a surface water body is based on Ecological Status and Chemical Status, with the final classification determined by the lower of the two. Good Status

applies to natural water bodies and reflects near-natural ecological conditions, whereas Good Ecological Potential (GEP) applies to heavily modified or artificial water bodies and represents the best achievable ecological condition given their physical alterations.

Groundwater status is assessed based on both quantitative and chemical conditions. Quantitative status relates to the balance between groundwater recharge and abstraction, ensuring that water levels are sustained and that there are no adverse effects on dependent ecosystems or surface waters. Chemical Status relates to groundwater quality, ensuring that concentrations of pollutants do not exceed environmental standards and do not give rise to impacts on drinking water supplies or associated surface waters. Both elements must be maintained at Good Status to ensure compliance with WFD objectives.

1.3 WFD Compliance Assessment

The TII Standard PE-ENV-01201 Water Impact Assessment of Proposed National Roads-Standard requires that where a TII project has the potential to impact a WFD waterbody, a proportionate WFD Compliance Assessment shall be included within the environmental evaluation reporting. The Compliance Assessment shall demonstrate that for all WFD water bodies where there is a potential for Impact, a WFD Compliance Assessment is undertaken to demonstrate that the project will not result in:

1. changes affecting High Status sites;
2. a failure to achieve Good WFD groundwater Status, Good Ecological Status (GES) or, where relevant, GEP; and
3. the deterioration in the status of a body of surface water or groundwater. Deterioration of status occurs if the status of one (or more) of the quality elements falls by one class, even if there is no fall in the classification of the water body as a whole (EUECJ, 2015).

The WFD also require compliance with relevant legislation protecting other areas including:

- Shellfish waters;
- Salmonid;
- Recreational waters (bathing water)
- Drinking water (groundwater and surface water);
- Nutrient sensitive areas.

The WFD Compliance Assessment must also demonstrate that, for all protected areas where there is the potential for impacts, the project will not result in significant effects.

The WFD Compliance Assessment screening focuses on identifying any potential for permanent or long-term impacts on water body status, with particular emphasis on the operational phase of the Proposed Development. Temporary construction-phase effects, which are short-term and reversible in nature, are not considered to give rise to deterioration under the Directive.

1.4 Methodology

Guidance on the format of a WFD Compliance Assessment in Ireland is not prescriptive, the nature of the water environment and the breadth of the legislation mean that assessments are tailored to proposals on a case-by-case basis. The methodology applied in this assessment is informed by the general guidance on WFD Compliance Assessment provided by TII Standard PE ENV 01201 and the associated Overarching Technical Document PE ENV 01202. The Compliance Assessment has been undertaken using information compiled from the Hydrology and Hydrogeology Assessments for the Proposed Development. The Assessments completed comprehensive reviews of WFD surface and groundwater potentially

impacted by the Proposed Development in determining appropriate study areas and Zone of Influence (ZoI) as a basis for the impact assessments.

1.5 Water Framework Directive Baseline

1.5.1 Surface Water

The Proposed Development has been assessed in the context of the WFD using aZone of Influence (ZoI). The ZoI was defined having regard to the principles set out in TII Standard PE-ENV-01201. An initial 250m buffer was applied for scoping purposes, following which, the study area was refined based on hydrological pathways and receptor sensitivity. This pathway-led approach incorporates surface waters that are hydraulically connected to the Proposed Development, including downstream receptors where a plausible pathway for effect exists.

The WFD surface water bodies identified within the ZoI, (see Table 1) comprise a range of rivers and lakes of varying Ecological Status and overall WFD status that may potentially be affected by the Proposed Development. The ZoI has been refined from a wider surface water dataset compiled during the EIAR receiving environment characterisation, with more distant water bodies excluded based on the absence of hydrological connectivity or plausible impact pathways.

Table 1 - Surface Waterbody WFD Status

Water Body	Waterbody Type	Current Status	Environmental Objective	Risk Status
Burn DaurnettNETT_010	River	Moderate	Good	At risk
FINN (DONEGAL)_060	River	Poor	Good	At risk
FINN (DONEGAL)_070	River	Moderate	Good	At risk
MOURNE BEG_010	River	Poor	Good	At risk
CLOGHER (DONEGAL)_010	River	Good	Good	At risk
ESKE_010	River	Good	Good	Not at risk
ESKE_020	River	Good	Good	Not at risk
DRUMROOSK EAST	River	Good	Good	Not at risk
LOWERYMORE_010	River	Moderate	Good	At risk
LOWERYMORE_020	River	High	High	Not at risk
LOWERYMORE_030	River	High	Good	Not at risk
LOUGH ESKEough Eske	Lake	Good	Good	Not at risk
LOUGH MOURNE dl	Lake	Good	Good	Not at risk

Chemical Status

A review of the Environmental Protection Agency (EPA) WFD datasets, including Catchments.ie, indicates no evidence of significant pollution pressures or exceedances of environmental quality standards; accordingly, Chemical Status is inferred to be Good.

Ecological Status

Within the ZoI, current Ecological Status ranges from Poor to High, with BURN DAURNETT_010, FINN (DONEGAL)_060, FINN (DONEGAL)_070, MOURNE BEG_010, CLOGHER (DONEGAL)_010 and LOWERYMORE_010 classified as Moderate or Poor, while ESKE_010, ESKE_020, Lough Eske and Lough Mourne are classified as Good, and LOWERYMORE_020 and LOWERYMORE_030 are classified as High.

Protected Areas

The ZoI includes a number of protected areas and water bodies of regulatory significance. The River Finn Special Areas of Conservation (SAC) is located within the wider hydrological

network and supports qualifying interests dependent on appropriate water quality and hydrological conditions. The River Finn is also designated as a Salmonid Water, reflecting its importance for salmonid species and the requirement to maintain suitable water quality standards.

The ESKE_020 river water body and the Drumroosk_East are identified as Drinking Water Protected Areas under Article 7 of the WFD and are associated with the Donegal (River Eske) Water Treatment Plant. Lough Mourne is also designated as a Drinking Water Protected Area and is associated with the Meencrumlin Water Treatment Plant.

No bathing water protected areas or nutrient sensitive areas have been identified within the ZoI.

Water-dependent conservation sites that are hydrologically connected to the Proposed Development include the Lough Eske and Ardnamona Wood SAC, the River Finn SAC and the Croaghonagh Bog SAC. These sites support qualifying interests dependent on appropriate water quality and hydrological conditions. A hydrological connection to the Donegal Bay (Murvagh) SAC is also identified via downstream pathways; however, no plausible impact pathway exists between the Proposed Development and the qualifying interests of this site, it is therefore excluded from further consideration in this assessment.

1.5.2 Groundwater

The hydrogeology study area comprises the footprint of the Proposed Development, including all permanent and temporary works, and water features within a 1km radius. This has been defined based on professional judgement, taking account of groundwater bodies, hydraulically connected surface waters, and water-dependent receptors within and adjacent to the Proposed Development and their associated catchments. The study area also includes downstream receptors where hydraulic connectivity exists and a plausible pathway for effect on groundwater conditions or WFD status is identified.

Table 2 - Groundwater body WFD Status

Water Body	Waterbody Type	Current Status	Environmental Objective	Risk Status
Ballybofey	Groundwater	Good	Good	Not at risk
Castlederg	Groundwater	Good	Good	Not at risk
Donegal South	Groundwater	Good	Good	Not at risk
Donegal-Ballintra	Groundwater	Good	Good	Not at risk
Doorin Point	Groundwater	Good	Good	Not at risk
Inver-Banagher Hill	Groundwater	Good	Good	Not at risk

Chemical Status

Groundwater bodies within the study area are classified as having Good Status and are identified as Not at Risk based on available WFD datasets, including EPA data and the Catchments.ie database, with no identified groundwater quality pressures. Accordingly, groundwater Chemical Status is inferred to be Good.

Protected Areas

The Hydrogeological Assessment identifies several protected areas and groundwater-dependent receptors within and hydrologically connected to the study area. Water-dependent conservation sites include the Lough Eske and Ardnamona Wood SAC, the River Finn SAC and the Croaghonagh Bog SAC, all of which support qualifying interests dependent on appropriate groundwater levels and groundwater-supported surface water interactions. A downstream hydrological connection to the Donegal Bay (Murvagh) SAC is also identified.

No Source Protection Areas, Drinking Water Protected Areas or mapped Zones of Contribution are identified within the study area. Groundwater abstractions comprise private

domestic and agricultural wells and springs, with no public water supplies or group water schemes identified.

1.6 WFD Compliance Assessment

The assessment of potential impacts on water bodies has been informed by the findings of the Hydrology, Hydrogeology and Biodiversity Assessments presented in the EIAR. These Assessments identify no potential for permanent or long-term impacts on surface water or groundwater receptors during the operational phase of the Proposed Development.

The Hydrology Assessment concludes that the Proposed Development will not result in impacts on surface water quality or hydromorphological conditions. Accordingly, no changes to the physico-chemical or hydromorphological elements that underpin Ecological Status are predicted. The hydrogeology assessment similarly concludes that there will be no impacts on groundwater levels or groundwater quality, and therefore no effects on groundwater quantitative or Chemical Status.

The Biodiversity Assessment identifies no impacts on aquatic habitats or water-dependent ecological receptors, and therefore no effects on the biological quality elements that contribute to Ecological Status.

On this basis, there is no mechanism by which the Proposed Development could result in a deterioration in the status of any surface water body or groundwater body. Furthermore, the absence of any long-term impacts on water quality, hydromorphology or ecological receptors indicates that the Proposed Development will not prevent any water body from achieving its environmental objectives.

In addition, no impacts on High Ecological Status water bodies are predicted, and therefore no changes affecting High Status sites will occur.

The Proposed Development is therefore compliant with the requirements of the WFD.