Project:	Donegal County Council Dredging Permits						
Client	Donegal County Council						
Subject	Maritime Usage Licence Application – Water Framework Directive						
Appendix	4.5						
Orig. by	DM	**Appr. by**	AA	**Date**	12/02/2026	**Doc. Ref:**	C1087-AYE-ZZ-XX-TN-MA-0003

4.5 Water Framework Directive

4.5.1 Legislation Context

The Water Framework Directive (WFD) (2000/60/EC) is a substantial piece of water legislation with the main purpose being to establish a framework for the protection and sustainable use of the water environment. The Directive sets Environmental Objectives for all surface waters (rivers, transitional lakes and coastal waters) at the water body scale, the effective unit of management and monitoring defined under the WFD. The Objectives, set out in Article 4 of the Directive, include the prevention of deterioration of Ecological Status within the water body.

Article 4(7) outlines exemptions from these objectives including an exemption for: *"Deterioration or failure to achieve good status/potential as a result of new modifications to the physical characteristics of a surface water body or alterations to the level of bodies of groundwater, or status deterioration of a body of surface water from high status to good status as a result of new sustainable human development activities*". These exemptions would require an Article 4(7) Test to be done, in accordance with the Common Implementation Strategy Document No. 35 of 2017.

WFD requires regular examination of the biological, chemical and hydromorphological status of all waterbodies in the European Union. Under the WFD, a waterbody must receive high status in biology, chemistry and hydromorphology is it is to be considered a of High Ecological Status. If all other quality elements are at high status, but hydromorphological status is not high, then a waterbody is classified as Good Ecological Status (GES), rather than High.

In heavily modified water bodies (HMWB) the hydromorphological or physical character of the water body cannot be restored sufficiently to support Ecological Status, without impacting on the specified use. As a result, these water bodies are set an alternative environmental objective of '*Good Ecological Potential'*, this is the best ecological condition they can achieve allowing for the fact that their hydromorphology has been modified to facilitate the specified use.

However, heavily modified water bodies are still expected to meet the required standards for all the other water quality elements, such as physicochemical conditions, nutrients, specified pollutants and chemicals. Typically, the ecology of a HMWB is altered because the physical habitat has changed significantly. For example, where a significant impoundment is constructed on a river the habitat upstream can be more similar to a lake or a pond. Therefore, the ecology changes in response. Measures are also required to mitigate the impacts on hydromorphology to the greatest extent possible given the specified use.

The objectives of the WFD are:

- To prevent deterioration in the ecological status/potential of the waterbody
- To prevent the introduction of impediments to the attainment of Good WFD status for the waterbody
- To ensure that the attainment of the WFD objectives for the waterbody are not compromised
- To ensure the achievement of the WFD objectives in other waterbodies within the same catchment are not permanently excluded or compromised.

4.5.1 Waterbodies of Concern

The proposed maintenance dredging works will be occurring within the coastal waterbody IE_NW_220_0000 (Lough Swilly), and in the transitional waterbody IE_NW_220_0100 (Crana Estuary). Lough Swilly has a risk projection of 'at risk' and Crana Estuary is 'review'.

The waterbodies are associated to two main Natura 2000 Sites, the Lough Swilly SAC and SPA.

Reporting Period	Waterbody	Ecological Status or Potential	Phosphorus Conditions	Orthophosphate
2007-2009	Lough Swilly	Good	High	High
	Crana Estuary	Unassigned		
2010-2012	Lough Swilly	Good	High	High
	Crana Estuary	Unassigned		
2010-2015	Lough Swilly	High	High	High
	Crana Estuary	Unassigned		
2013-2018	Lough Swilly	Good		
	Crana Estuary	Moderate		
2016-2021	Lough Swilly	Good		
	Crana Estuary	Moderate		
2019-2024	Lough Swilly	Good		
	Crana Estuary	Moderate		

Both waterbodies have a risk projection of 'at risk'.

4.5.1 Compliance Assessment

The potential risks of the proposed works have been considered in relation to each of the following supporting elements for coastal waters:

Biological Quality Elements	Hydromorphological Quality Elements	Physico-chemical and Chemical Quality Elements
Phytoplankton status	Depth variation	Transparency
Invertebrate status	Structure and substrate of the coastal bed	Thermal conditions
	Structure of the intertidal zone	Oxygenation conditions
	Direction of dominant currents	Salinity
	Wave exposure	Nutrient condition
		Specific Pollutants
		Priority Substances and Hazardous Priority Substances

WFD Biological Quality Elements:

- Phytoplankton: Although there would be some significant temporary increases in suspended sediment levels, they would not be expected to have any permanent effect on phytoplankton assemblages present. Phytoplankton are transported with tidal currents and would only be expected to be subject to elevated levels of suspended sediments for relatively short periods (less than 6-weeks). Any effects of the works on phytoplankton would not be expected to affect medium-term WFD status.
- Invertebrates: The risk of sedimentation associated with dredging is considered to be significant but short-term. Overall, the surrounding biota will experience some degree of stress and temporary and localised community disruption associated with elevated turbidity levels, however the programme and mitigation measures will limit this exposure. Therefore, the works will not impact significantly on the biological elements or prevent the achievement of good ecological status/potential of the biological elements in the waterbody in the medium to long-term.
- Fish: As above.

WFD Hydromorphological Quality Elements:

- Depth Variation: The investigation works would not have effect on depth.
- Structure and Substrate of the Coastal Bed: The investigation works would have significant but localised effects on benthic substrates at the dredging sites. It is anticipated the deposition of dredge material would likely affect the structure and substrate of the coastal bed at the scale of the WFD waterbody. The potential impact of this effect on the structure and substrate of the coastal bed is considered to be neutral over time, as the material to be deposited is equivalent to the substrate of the existing coastal bed.

- Structure of the Intertidal Zone: As above.
- Direction of Dominant Currents: Current flow patterns and the direction of dominant currents will not be affected by the investigation works.
- Wave Exposure: Characteristic wave exposure of the area will not be affected by the investigation works.

WFD Physico-chemical and Chemical Quality Elements:

- Transparency: The investigation works would have localised and temporary effects (6 weeks approx.) on transparency, but it would not prevent the overall achievement of good physico-chemical and chemical quality status.
- Thermal Conditions: The investigation works would not have any effects on thermal conditions.
- Oxygenation Conditions: The investigation works are unlikely to cause effect to oxygen levels in the water column.
- Salinity: The investigation works will not cause fluctuations in the salinity levels of the water.
- Nutrient Condition: The works are likely to cause minor effect to nutrient levels in the water column as a result of the movement of dredge materials.
- Specific Pollutants (ecological status): The works are unlikely to have localised and temporary effects on concentrations of specific pollutants in the water column, given that all contaminant levels are within recommended guideline levels. Therefore, the amount of potential pollutant to be released from the sediment will be small in scale and will be rapidly diluted in the water column. Therefore, it would be unlikely to cause affect to the WFD status.
- Priority substances and Priority hazardous substances (chemical status): As above.

Environmental mitigation has been incorporated into the investigation works design, which follow generic best practice to mitigate the impacts of the proposed works on the ecological environment. Namely, adherence to CIRIA (2015) Environmental Good Practice on Site, adherence to a Construction Environmental Management Plan (CEMP) and appropriate use of equipment. The Natura Impact Statement (NIS) prepared for these proposed works, sets out specific mitigation for the protection of surface water.

Taking into consideration the impact of the investigation works on hydromorphology, biology and water quality elements, and following the implementation of design and mitigation measures, it can be concluded that it will not compromise progress towards achieving Good Ecological Potential (GEP) or cause a deterioration of the overall status of Crana Estuary or Lough Swilly. It also will not compromise the qualifying features of protected areas. It can therefore be concluded that the investigation works are fully compliant with WFD.