Cork City Council

Cork Docklands North and South Quays Maritime Usage Licence Application

Attachment 4.6 Consistency of the Proposed Maritime Usage with the Objectives of the Marine Strategy Framework Directive

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List of Acronyms/ Glossary

GES	Good Environmental Status
MARA	Maritime Area Regulatory Authority
MSFD	Marine Strategy Framework Directive
MUL	Maritime Usage Licence
NIS	Non-Indigenous Species
WFD	Water Framework Directive
ZoI	Zone of Influence

1. Introduction

The assessment below demonstrates how the proposed Maritime Usage is consistent with the objectives and targets of the Marine Strategy Framework Directive (MSFD) and Ireland's Marine Strategy, ensuring no risk to the achievement of Good Environmental Status (GES) within the Zone of Influence. Full details of the Proposed Maritime Usage are described in Attachment 3.1.

Before determining a MUL, MARA is required to have regard to Directive 2008/56/EC as amended by Directive (EU) 2017/845, the Marine Strategy Framework Directive, and the associated implementing national legislation, European Communities (Marine Strategy Framework) Regulations, 2011. The Marine Strategy Framework Directive establishes a framework within which Member States must take the measures necessary to achieve or maintain good environmental status in the marine environment by the year 2020 at the latest. The objective of the Directive is to protect and prevent deterioration of the marine environment and, where practical, restore marine ecosystems. Member States must prevent and reduce inputs in the marine environment, with a view to phasing out pollution, to ensure that there are no significant impacts on or risks to marine biodiversity, marine ecosystems, human health or legitimate uses of the sea. The Directive applies to waters, the seabed and subsoil on the seaward side of the baseline from which the extent of territorial waters is measured extending to the outmost reach of the area where a Member State has and/or exercises jurisdictional rights.

There are eleven categories by which good environmental status is measured and monitored. These are:

- D1 Biological diversity
- D2 Non-indigenous species
- D3 Population of commercial fish / shellfish
- D4 Elements of marine food webs
- D5 Eutrophication
- D6 Sea floor integrity
- D7 Alteration of hydrographical conditions
- D8 Concentration of contaminations
- D9 Contaminants in fish / seafood for human consumption
- D10 Marine Litter
- D11 Introduction of energy including underwater noise.

Ireland has developed targets and indicators with respect to measuring and monitoring these 11 descriptors, to ensure good environmental status. These are set out in Ireland's Marine Strategy Framework Directive Marine Strategy.

2. MSFD Methodology

For the Zone of Influence (the area over which the proposed Maritime Usage could have had an ecological or other relevant impact), the current status of the 11 MSFD descriptors was assessed with reference to the indicators and targets set out in Ireland's Marine Strategy. The potential effects of the proposed Maritime Usage on the achievement of these targets were then evaluated for each of the 11 descriptors.

3. Zone of Influence

The Zone of Influence (ZoI) for the proposed marine environmental surveys encompasses two transitional waterbodies; Lee (Cork) Estuary Lower (IE_SW_060_0900), and Lough Mahon (IE_SW_060_0705). Under Irish MSFD implementation, transitional and coastal waters are assessed using existing WFD monitoring programmes, in line with MSFD Article 11 requirements to build on established monitoring networks. Accordingly, the ecological and chemical status of the River Lee (Cork) Estuary Lower and Lough Mahon as reported under the WFD provides an important baseline for assessing the achievement of GES under relevant MSFD descriptors (See Attachment 4.5 Consistency with Objectives of the WFD for more information).

4. MSFD Status

The 2025 assessment of Ireland's Marine Strategy Framework Directive (MSFD) status indicated variable progress across the descriptors, with several achieving Good Environmental Status (GES) while others remained only partially achieved or unknown. Biodiversity (D1) and commercial fish and shellfish (D3) continued to present challenges, as biodiversity was constrained by uncertainties in marine mammal status and by the poor condition of many fish populations, while less than half of assessed commercial fish stocks attained GES. In contrast, non-indigenous species (D2), eutrophication (D5), hydrographical conditions (D7), contaminants in the environment (D8), contaminants in seafood (D9), and underwater noise (D11) had achieved GES, reflecting effective management of these pressures. Seafloor integrity (D6) was found to be largely in good condition, with 74% of the assessed areas achieving GES, although gaps in assessment remained and 11% of the seabed did not meet the required thresholds. Marine litter (D10) represented the most prominent area of concern, as beach litter exceeded acceptable levels and knowledge gaps persisted for seafloor litter and microplastics. The status of food webs (D4) remained unknown, highlighting a significant knowledge gap. Four MSFD descriptors were deemed relevant to the proposed Maritime Usage (D1 –

Biological Diversity, D6 – Seafloor Integrity, D8 – Contaminants in Environment, and D11 – Underwater Noise) which is described in **Table 1** below.

Table 1: MSFD Cycle 3 status of Descriptors and relevance to Proposed Maritime Usage.

MSFD Descriptor	MSFD Status in Ireland (2025)	Relevance to Proposed Maritime Usage
D1 – Biological Diversity	GES partially achieved. Most marine bird species achieved GES. Most marine mammal GES unknown. GES Not Achieved for most fish species. Incidental bycatch remains a major issue.	Relevant — Minor impact anticipated. Proposed maritime usage, comprising marine environmental surveys at the South Quays and structural and underwater surveys at the North Quays is temporary, local in scale, non-polluting, and does not generate bycatch or long-term disturbance. Diver operations, vessel movements, and material testing are tightly controlled and short term, with no pathway to population-scale effects on bird, mammal or fish species. No deterioration in ecological status or potential is expected within the River Lee Estuary Lower.
D2 – Non-Indigenous Species	GES achieved.	Not relevant to the proposed maritime usage. Surveys do not introduce NIS vectors, translocations, or biofouling risk pathways beyond standard, well-managed vessel operations.
D3 – Commercial Fish & Shellfish	GES partially achieved. 29 stocks achieved GES. 46 stocks not at GES. 99 stocks unknown.	Not relevant to the proposed maritime usage. Survey footprint does not overlap with a modelled ZOI for shellfish waters, involves only discrete, short-term seabed interaction, and will not constrain stock-scale status objectives or cause deterioration.
D4 – Food Webs	GES status is unknown.	Not relevant to the proposed maritime usage. No alteration to trophic interactions, productivity, or energy pathways will occur from the survey work.
D5 – Eutrophication	GES achieved.	Not relevant to the proposed maritime usage. Surveys do not introduce nutrients, emissions, or discharges that could alter water chemistry or eutrophication status.
D6 – Seafloor Integrity	74% of seafloor achieved GES. 15% not assessed or unknown. 11% not good status.	Relevant – The proposed Maritime Usage involves limited, temporary sediment disturbance and seabed interaction associated with riverbed and intertidal grab samples at the South Quays, and with diver-led inspection of the quay wall toe, scour assessment, and sonar or echo sounding surveys at the North Quays. Disturbed areas are very small in extent relative to the habitat area and full physical and chemical recovery is expected within months in the dynamic estuarine environment. The combined surveys directly support D6 targets by establishing baseline seabed condition and benthic habitat information at the survey sites.
D7 – Hydrographical Conditions	GES achieved.	Not relevant to the proposed maritime usage. Surveys are short-term with no alteration to currents, tidal regime, or hydrographical structure.

MSFD Descriptor	MSFD Status in Ireland (2025)	Relevance to Proposed Maritime Usage
D8 – Contaminants in Environment	GES achieved (most contaminants below thresholds).	All works at the South and North Quays will employ containment measures such as tarpaulins, casings and controlled collection to prevent debris or residue entering the river, ensuring that contaminant concentrations within the ZOI remain below WFD threshold values and do not show any increasing trend. Any waste produced including arisings, concrete debris, core spoil, and cutting water generated during intrusive investigation works will be contained and disposed of in accordance with applicable waste management regulations.
D9 – Contaminants in Seafood	GES achieved (levels below EU food safety standards).	Not relevant to the proposed maritime usage. No discharges or emissions from survey work which could pose a risk to seafood chemistry status when managed under MARPOL Annex I compliance.
D10 – Marine Litter	GES not achieved (beach litter). Microplastics unassessed.	Not relevant to the proposed maritime usage. No materials are left in situ. Dust and cuttings assessed under Contaminants. Standard vessel waste and spillage controls ensure no contribution to marine litter pressures. Any marine litter encountered will be removed and disposed of appropriately on land.
D11 – Underwater Noise	GES achieved.	Relevant - Minor short-term impacts are anticipated. Operation of survey vessels, the underwater ROV for camera and geophysical surveys at the South Quays, and sonar or echo sounding equipment and diver-support vessels at the North Quays will generate low-level continuous underwater noise. Survey works will be undertaken over a short time, with no impulsive sources (such as piling) and no long-term impacts or deterioration is anticipated.

5. MSFD Indicators

Forty indicators were used for the third cycle of the MSFD assessment to evaluating progress towards Good Environmental Status across all 11 MSFD descriptors. These indicators allow complex ecological processes and pressures to be measured effectively, allowing comparability across regions and reporting cycles, enabling the identification of trends, and helps distinguish between natural variability and human-induced change. Indicators also serve a practical management function, providing policymakers with clear benchmarks against which the effectiveness of measures can be judged (**Table 2**).

Table 2: Indicators used to assess criteria for each MSFD descriptor for the 3rd MSFD cycle.

Descriptor	Criterion	Indicator(s)
D1 Biodiversity	D1C1 Mortality from incidental bycatch	Bycatch Mortality Indicator (ACS-IE-BycatchMortality2024)
	D1C2 Population abundance	Abundance of Marine Bird Species (ACS-IE-BirdAbundance2024); Seal Abundance Indicator (ACS-IE-SealAbundance2024); Cetacean Abundance Indicator (ACS-IE-CetaceanAbundance2024); Turtle Abundance Indicator (ACS-IE-TurtleAbundance2024); Fish Abundance Indicator (ACS-IE-FishAbundance2024)
	D1C3 Population demographic characteristics	Population Demographics Indicator (ACS-IE-PopDemographics2024)
	D1C4 Distributional range	Distributional Range Indicator (ACS-IE-Distribution2024)
	D1C5 Habitat for species	Habitat Extent and Condition Indicator (ACS-IE-Habitat2024)
D2 non-indigenous species	D2C1 Newly introduced NIS	Newly Introduced NIS Indicator (ACS-IE-NewNIS2024)
	D2C2 Established NIS	Established NIS Abundance Indicator (ACS-IE-EstablishedNIS2024)
D3 Commercial fish & shellfish	D3C1 Fishing mortality (F)	Fishing Mortality Indicator (ACS-IE-F2024)
	D3C2 Spawning Stock Biomass (SSB)	SSB Indicator (ACS-IE-SSB2024)
	D3C3 Population age/size distribution	Age/Size Distribution Indicator (ACS-IE-AgeSize2024)
D4 Food webs	D4C1 Diversity of trophic guilds	Diversity of the Trophic Guild Indicator (ACS-IE-TrophicGuildDiversity2024)
	D4C2 Balance of abundance among trophic guilds	Abundance Balance Indicator (ACS-IE-TrophicGuildAbundance2024)
	D4C3 Size distribution within trophic guilds	Size Distribution Indicator (ACS-IE-TrophicGuildSize2024)
	D4C4 Productivity of trophic guilds	Productivity Indicator (ACS-IE-TrophicGuildProductivity2024)
D5 Eutrophication	D5C1 Nutrient concentrations	Nutrient Concentrations Indicator (ACS-IE-Nutrients2024)
	D5C2 Chlorophyll-a concentrations	Chlorophyll-a Indicator (ACS-IE-Chlorophyll2024)
	D5C5 Dissolved oxygen	Dissolved Oxygen Indicator (ACS-IE-DO2024)
D6 Sea-floor integrity	D6C1 Physical loss of seabed	Seabed Loss Indicator (ACS-IE-SeabedLoss2024)
	D6C2 Physical disturbance of seabed	Seabed Disturbance Indicator (ACS-IE-SeabedDisturbance2024)
	D6C3 Adverse effects from disturbance	Benthic Community Condition Indicator (ACS-IE-BenthicCondition2024)
	D6C4 Benthic habitat extent	Habitat Extent Indicator (ACS-IE-BenthicExtent2024)

	D6C5 Benthic habitat condition	Habitat Condition Indicator (ACS-IE-BenthicCondition2024)
D7 Hydrographical changes	D7C1 Permanent alteration of hydrographical conditions	Hydrographical Alteration Indicator (ACS-IE-HydroAlteration2024)
	D7C2 Adverse effects from alteration	Hydrographical Effects Indicator (ACS-IE-HydroEffects2024)
D8 Contaminants	D8C1 Concentrations of contaminants	Contaminant Concentrations Indicator (ACS-IE-Contaminants2024)
	D8C2 Adverse effects of contaminants	Biological Effects of Contaminants Indicator (ACS-IE-ContamEffects2024)
	D8C3 Acute pollution events	Acute Pollution Events Indicator (ACS-IE-AcutePollution2024)
D9 Contaminants in seafood	D9C1 Levels of contaminants in seafood	Contaminants in Seafood Indicator (ACS-IE-SeafoodContam2024)
D10 Marine litter	D10C1 Litter on coast & seafloor	Coastal Litter Indicator (ACS-IE-CoastalLitter2024); Seafloor Litter Indicator (ACS-IE-SeafloorLitter2024)
	D10C2 Micro-litter	Micro-litter Indicator (ACS-IE-MicroLitter2024)
D11 Underwater noise	D11C1 Impulsive noise	Impulsive Noise Indicator (ACS-IE-ImpulsiveNoise2024)
	D11C2 Continuous low-frequency sound	Continuous Noise Indicator (ACS-IE-ContinuousNoise2024)

6. Impact of Proposed Maritime Usage on relevant MSFD targets within ZoI

Table 3 demonstrates that that the proposed marine environmental surveys are consistent with the objectives of the Marine Strategy Framework Directive and Ireland's Marine Strategy. All survey activities are designed to reduce adverse effects on the marine environment. No measurable effect on Ireland's achievement of Good Environmental Status under any of the 11 MSFD descriptors are anticipated.

Table 3: Assessment of relevant MSFD Targets in the context of the Proposed Maritime Usage.

Descriptor	Target Code	Description	Assessment
D1	D1T1	The mortality rate per species from incidental by-catch is below levels which threaten the species, such that its long-term viability is ensured.	No impact anticipated. Proposed maritime usage generates no incidental by-catch, ensuring mortality rates remain below levels threatening long-term species viability.
D1	D1T1-1	By 2028, aim to ensure that the mortality rate per seal and small toothed cetacean species from incidental by-catch is below levels which threaten the species, in accordance with current conservation objectives and numerical mortality/removal limits established through coordinated regional indicator assessments (i.e. OSPAR common indicator M6 – marine mammal by-catch).	No impact anticipated. Proposed maritime usage generates no by-catch or mortality for seals or small toothed cetaceans, aligning with OSPAR M6 indicator limits and conservation objectives.
D1	D1T1-3	By 2026, ensure that Ireland participates in the establishment of an internationally coordinated risk-based monitoring and assessment regime that is focused on incidental mortality of non-target species in commercial fisheries and informing the development of appropriate management measures.	No impact anticipated. Proposed maritime usage involves no fisheries interaction or by-catch generation, supporting Ireland's participation in coordinated risk-based monitoring regimes.
D1	D1T2	The population abundance of the species is not adversely affected due to anthropogenic pressures.	No deterioration anticipated. Sampling footprint is highly localised to the North and South Quay locations specified. Impacts are temporary, and generate no population-

Descriptor	Target Code	Description	Assessment
			scale pressures, ensuring species abundance is not adversely affected (See attachment 4.3 for Supporting Information for Screening for Appropriate Assessment).
D1	D1T4	The species distributional range and, where relevant, pattern is in line with prevailing physiographic, geographic and climatic conditions.	No alteration anticipated. Proposed maritime usage exerts no influence on physiographic, geographic, or climatic conditions affecting species distributional range or patterns.
D1	D1T5	The habitat for the species has the necessary extent and condition to support the different stages in the life history of the species.	No deterioration anticipated. Grab sampling is spatially discrete to the South Quays, and is over a short-term period, preserving habitat extent and condition to support species life history stages. No grab sampling is proposed for the North Quays elements of this proposed maritime usage.
D1	D1T5-1	By 2030, ensure that Ireland's network of marine protected areas achieves 30% coverage of the maritime area, is ecological coherent and representative and contributes to sustaining ecosystem services, including climate change resilience and mitigation.	No impact anticipated. Proposed maritime usage does not constrain MPA network expansion, ecological coherence, coverage targets, or ecosystem service delivery.
D1	D1T5-3	By 2030, ensure that Ireland's marine Natura 2000 sites designated for listed species under the EU Birds and Habitats Directives have a system of management	No impact anticipated. Survey work avoids pathways impacting Natura 2000 habitat management, extent, condition, or favourable status objectives (see Attachment 4.3 for Supporting Information for Screening for Appropriate Assessment).

Descriptor	Target Code	Description	Assessment
		measures developed and in place, in order to ensure that the species' habitat extent and condition at all sites achieve and maintain a favourable status.	
D6	D6T1	The structure and functions of the ecosystems, and benthic ecosystems, in particular, are not adversely affected due to the spatial extent and distribution of physical disturbance or physical loss on the seabed	No impact anticipated. Surveys cause negligible physical disturbance or loss (1.2 m² intertidal, 0.75 m² subtidal across 78 samples at the South Quays proposed survey sites), preserving benthic ecosystem structure and functions. North Quay seabed interaction is limited to observational diver-led inspections at the wall toe, with no proposed grab sampling or excavation. Vessels will use dynamic positioning to reduce the use of anchors which could disturb the seabed. Physical disturbance is therefore considered to be negligible for this proposed maritime usage.
D6	D6T1-1	Continue to maintain existing low levels of sealed physical loss at less than 2% of the seabed in each benthic broad habitat type.	No impact anticipated. Short-term surveys over small spatial extent do not contribute meaningfully to sealed physical loss exceeding 2% thresholds. 0.1 m^2 grab sample locations at the South Quays will recover quickly (within weeks) in the dynamic estuarine environment. No seabed disturbance currently proposed from the North Quays surveys. Dynamic vessel positioning will be used to maintain station, thereby avoiding the need for seabed anchoring under normal operating conditions and minimising any physical interaction between the vessel and the seabed.

Descriptor	Target Code	Description	Assessment
D6	D6T2	The extent of adverse effects from anthropogenic pressures on the condition of the habitat type, including alteration to its biotic and abiotic structure and its functions, does not exceed a specified proportion of the natural extent of the habitat type in the assessment area.	No impact anticipated. Minimal, short-term benthic grab sampling at the South Quays will not cause adverse alterations to habitat condition, biotic/abiotic structure, or functions. No seabed disturbance is proposed for the surveys being undertaken at the North Quays.
D6	D6T2-1	By 2030, maintain or reduce the extent of adverse effects on the seabed in each benthic broad habitat type to less than 25% of the habitat extent.	No impact anticipated. No sample methods are of the type or scale spatially or temporally to have adverse effects on the seabed at either the North or South Quays.
D6	D6T2-3	By 2040, determine the condition of 50% of benthic broad habitat types based on the best available knowledge and techniques.	Positive contribution to the understanding of the benthic broad habitat types is anticipated from the South Quays ecological surveys. Surveys provide baseline data on benthic habitat condition in the South Quays.
D6	D6T2-4	By 2030, determine the condition of 50% of other benthic broad habitat types based on the best available knowledge and techniques.	Positive contribution anticipated. Surveys deliver baseline receiving environment data, supporting condition assessment. No ecological or archaeological surveys are proposed as part of the North Quays structural survey scope.
D6	D6T2-6	By 2028, commence implementation of nature-based solutions for marine habitats in order to restore biodiversity, reduce eutrophication impacts and support	Positive contribution anticipated. Surveys inform repair/implementation of flood defences at quays/jetty walls, enhancing climate resilience and ecosystem services via nature-based solutions at both the North and South Quays.

Descriptor	Target Code	Description	Assessment
		the delivery of ecosystem services, including resilience to climate change and restoration of carbon sinks.	
D8	D8T1a	Within coastal and territorial waters, continue to ensure the concentrations of contaminants do not exceed the threshold values set in accordance with Directive 2000/60/EC.	No impact anticipated. Handheld drills/grinders with mitigation such as tarpaulins to prevent drill debris/residue entry into the river, maintaining concentrations below Directive 2000/60/EC thresholds (See attachment 4.5 WFD Assessment). Underwater concrete sampling at the North Quays will only be undertaken where the above-water and underwater visual/physical inspection findings indicate a specific need such as evidence of deterioration, exposed reinforcement, or uncertainty regarding construction material and properties. All waste disposal for the proposed surveys at the North and South Quays will be subject to stringent containment and waste management protocols.
D8	D8T1a-1	Maintain or reduce the inputs of contaminants within coastal and territorial waters to a level that concentrations do not exceed the threshold values set in accordance with Directive 2000/60/EC or the OSPAR Environmental Assessment Criteria (EAC) and ensure that concentrations are not increasing.	No impact anticipated. Mitigations (tarpaulins, casings) ensure no contaminant inputs from coring/grinding, keeping concentrations below Directive 2000/60/EC and OSPAR EAC thresholds (See attachment 4.5 WFD Assessment).

Descriptor	Target Code	Description	Assessment
D8	D8T1b	Concentration of contaminants in marine matrices assessed in accordance with OSPAR Coordinated Environmental Monitoring Programme (CEMP) do not exceed OSPAR Environmental Assessment Criteria (EAC) and concentrations are not increasing.	No impact anticipated. Containment mitigations prevent debris release, ensuring CEMP-assessed concentrations remain below OSPAR EAC without increases.
D8	D8T2	The degree of biological or ecological effects that can be specifically attributed to contaminants continues to be below the agreed OSPAR criteria. At present, this is limited to evaluation of reproductive impairment in marine gastropods associated with tributyltin (TBT).	No impact anticipated. Proposed surveys use no TBT, avoiding any attributed biological/ecological effects per OSPAR criteria.
D8	D8T3	Spatial extent and duration of significant acute pollution events are minimised.	No impact anticipated. Short-term, localised surveys preclude significant acute pollution events, minimising their spatial extent and duration.
D11	D11T1	The spatial distribution, temporal extent, and levels of anthropogenic impulsive sound sources do not exceed levels that adversely affect populations of marine animals.	No impact anticipated. No impulsive sources (e.g., piledriving, seismic); continuous geophysical noise is low-level, short-term, and non-adverse to marine animal populations (see Attachment 4.4 Annex IV Risk Assessment).
D11	D11T1-a	By 2026, ensure guidance to regulate both continuous and impulsive noise from anthropogenic activities is developed	No impact anticipated. Surveys introduce no high-energy noise; vessels/ROVs follow standard noise-management practices, supporting low noise level maintenance (see Attachment 4.4 Annex IV Risk Assessment).

Descriptor	Target Code	Description	Assessment
		and implemented in order to maintain low levels of noise in Irelands marine environment.	

7. Statement of Authority

This report has been produced by Brendan Dickerson (B.Sc., M.Sc., LL.M., Qualifying CIEEM), a senior consultant with AQUAFACT – APEM Group, specialising in environmental and ecological assessment for marine projects in Ireland. Brendan holds a B.Sc. (Hons) in Marine Science from the University of Galway, an M.Sc. in Marine Biology, and an LL.M. in Environmental Law from University College Cork. He has extensive expertise in EU and Irish environmental legislation, including the Habitats Directive, Birds Directive, the Marine Strategy Framework Directive, and Ireland's National Marine Planning Framework. Brendan's experience includes Environmental Impact Assessment Reports (EIARs), leading Appropriate Assessment (AA) and Natura Impact Statement (NIS) evaluations for Irish marine SACs and SPAs, addressing conservation objectives, habitat connectivity, and significant effects. Brendan is also knowledgeable in marine survey design, habitat and species assessments, and the analysis and reporting required to support robust regulatory submissions for both public and private sector clients.

This report has been reviewed by Dr. A. Long. He is a Principal Marine Consultant with over a decade of experience across consultancy, government, and academia, with a PhD in marine ecology from the University of Galway. His career has focused on the assessment and management of environmental impacts in the marine environment. He has successfully managed and delivered complex multidisciplinary projects for high-profile clients in Ireland, Australia, and Brazil in sectors including fisheries, aquaculture, offshore renewables, ports, and wastewater, authoring over 40 major technical reports. His background includes detailed ecological and environmental impact assessments, monitoring programme design, and statistical analysis, supported by peer-reviewed publications and international research collaborations. Drawing on this expertise and his in-depth knowledge of EU and Irish environmental legislation, Dr. Long is suitably qualified to provide a robust consideration of the project's consistency with the objectives of the Marine Strategy Framework Directive.