Marina Quarter Ltd

Marine Environmental Surveys for Haggardstown and Marshes Upper Large-scale Residential Development

Attachment 3.1 Description of Proposed Maritime Usage

Anastasiia Khokhlova

AQUAFACT Ref: (P21372)

2026

Client: **Marina Quarter Ltd**

Address: **Block C, Maynooth Business Campus,**

Straffan Road,

Maynooth,

Co. Kildare

_____

AQUAFACT contact: **Aidan Long**

Position: **Principal Consultant**

E-mail: **a.long@aquafact.ie**

Telephone: **+353 (0) 91 756812**

Website: **www.aquafact.ie**

_____

Address: **AQUAFACT International Services Ltd,**

9A Liosban Business Park,

Tuam Road,

Galway,

Ireland.

H91 K120

Registered in Ireland: **No. 493496**

Tax Reference Number: **9773384O**

Tax Clearance Number: **936172**

Report Approval Sheet

Client	Marina Quarter Ltd
Report Title	Marine Environmental Surveys for Haggardstown and Marshes Upper Large-scale Residential Development Attachment 3.1 Description of Proposed Maritime Usage
Job Number	P21372
Report Status	Final
Issue Date	03/09/2026

Rev	Status	Issue Date	Document File Name	Author (s)	Edits	Approved by:
1	Draft v1	18/08/2026	Attachment 3.1 Description of Maritime Usage_Draftv1_P21372	AK	AH	AL
2	Draft v2	26/08/2026	Attachment 3.1 Description of Maritime Usage_Draftv2_P21372	AK	AH	AL
3	Final	03/09/2026	Attachment 3.1 Description of Maritime Usage_Final_MUL260056	AK	AH	AL

Table of Contents

1. Project Background **1**

2. Description of the Proposed Maritime Usage **2**

2.1 Subtidal survey 2

2.2 Intertidal Survey – Phase I Walkover Survey 3

2.3 Phase II Quantitative Intertidal Survey 3

Table of Figures

Figure 1: Proposed marine survey sampling locations and intertidal survey transect locations. 5

List of Tables

Table 2.1: Total sample requirements for the marine surveys in Inner Dundalk Bay. 5

List of Acronyms/Glossary

Abbreviation	Definition
AA	Appropriate Assessment
EIAR	Environmental Impact Assessment Report
MNCR	Marine Nature Conservation Review
MLWS	Mean Low Water Springs
dGPS	Differential Global Positioning System
ITM	Irish Transverse Mercator
GIS	Geographic Information System
SPA	Special Protection Area
SAC	Special Area of Conservation
TOC	Total Organic Carbon
PSA	Particle Size Analysis
RFQ	Request for Quotation
NPWS	National Parks and Wildlife Service
NBDC	National Biodiversity Data Centre
H&S	Health and Safety
HIRA	Hazard Identification and Risk Assessment
RIB	Rigid Inflatable Boat
pNHA	proposed Natural Heritage Area
LOI	Loss on Ignition

1. Project Background

AQUAFACT has been appointed by Marina Quarter Ltd. to undertake intertidal and subtidal marine ecological surveys in the Castletown Estuary and Inner Dundalk Bay. The surveys are being undertaken to inform environmental assessments associated with the proposed Large-scale Residential Development at Haggardstown and Marshes Upper, Dundalk, Co. Louth, and will focus on the receiving environment of the existing Dundalk Wastewater Treatment Plant (WWTP) treated-effluent outfall at Soldier's Point.

The proposed development will comprise 502 residential units; a two-storey crèche facility with an associated play area and parking; new vehicular, pedestrian and cycle access infrastructure; surface water and wastewater services; public lighting; roads, footpaths and cycleways; car and cycle parking; and associated landscaping and amenity areas. Wastewater generated by the development will be pumped via a new rising main along Blackrock Road (R172) and Hardy's Lane to Finnabair Crescent, where it will discharge to the existing wastewater drainage network.

The purpose of the surveys is to characterise current intertidal and subtidal ecological conditions in the receiving environment before wastewater flows from the Proposed Development become operational. The surveys will establish a robust and repeatable environmental baseline against which potential future changes in benthic communities, sediment conditions and the relevant attributes of the Qualifying Interests of Dundalk Bay Special Area of Conservation may be assessed. The resulting data will also provide objective ecological evidence for wider environmental assessment and for separate consideration of WWTP performance and compliance alongside operational, effluent and water-quality information.

The proposed maritime usage is strictly limited to marine ecological survey activities, including vessel-based benthic sampling and intertidal habitat assessment and sampling. The survey area lies within a sensitive receiving environment that includes Dundalk Bay Special Area of Conservation, Special Protection Area, Ramsar site and proposed Natural Heritage Area. The SAC Qualifying Interests of particular relevance to the surveys are Estuaries [1130] and Mudflats and sandflats not covered by seawater at low tide [1140]. These habitats support benthic communities that contribute to the ecological functioning of Dundalk Bay and provide important feeding resources for protected waterbird populations.

2. Description of the Proposed Maritime Usage

2.1 Subtidal survey

A subtidal benthic survey, comprising non-intrusive seabed imagery, faunal grab sampling, Particle Size Analysis (PSA), and organic carbon content analysis, will be undertaken to characterise the sedimentary habitats and associated benthic communities within the subtidal zone. This survey will establish a robust ecological baseline, against which direct, indirect, and cumulative impacts can be assessed.

Initial habitat characterisation will be undertaken at five pre-agreed stations using a compact observation-class Remotely Operated Vehicle (ROV) and/or drop-down video (DDV) system deployed from a suitably equipped survey vessel. The ROV will be operated at a controlled altitude of approximately 0.5–2.0 m above the seabed and at a slow forward speed (typically 0.2–0.5 m s^{-1}) to maximise image quality while minimising disturbance of bottom sediments. The imagery will be used to identify seabed habitats, substrate conditions and notable ecological features, including sensitive habitats such as maërl, and to determine the suitability of each station for subsequent grab sampling.

At high water, a 0.025 m^2 grab sampler will be deployed at each station. Two replicate faunal samples will be collected for benthic community analysis, together with one additional sediment sample for PSA and organic carbon analysis. Sampling locations may be adjusted to avoid sensitive or unsuitable habitats identified during the DDV/ROV survey. Where grab sampling is not appropriate, the imagery will be used to characterise the seabed habitat.

Each grab sample will be sieved over 1 mm sieve, preserved in 4% buffered formalin, and sealed in labelled containers for laboratory processing and benthic faunal identification. One additional sample will be taken at each of the five benthic survey stations for sediment characterisation including Particle Size Analysis and Total Organic Carbon.

The NMBAQC 'Guidelines for processing marine microbenthic invertebrate samples' (Worsfold, T. and Hall, D., 2010) will be adhered to. In addition, all staff will be certified in personal sea survival techniques issued by BIM and First Aid Responder issued by PHECC. All survey staff will also have ENG11 seafarer's medicals prior to surveys.

The proposed intertidal and subtidal survey stations/transect locations are provided in Figure 1. The proposed survey footprint extends from the foreshore adjacent to Soldiers Point into the nearshore marine environment of Inner Dundalk Bay and the Castletown Estuary, covering both transitional and coastal water habitats within Inner Dundalk Bay. Further drawings are provided in this application as Attachment 3.4 and Attachment 3.5.

2.2 Intertidal Survey – Phase I Walkover Survey

An intertidal walkover survey will be carried out along an approximately 500-metre stretch of coastline at four separate locations (Figure 1). The survey will follow the Marine Nature Conservation Review (MNCR) Phase I methodology and will be undertaken during mean low water spring (MLWS) tidal conditions to ensure optimal exposure of the lower shore and full coverage of intertidal habitats. The survey will be guided by established best practice, including the Common Standards Monitoring Guidance for Intertidal Habitats (JNCC, 2004), Littoral Sediments Habitats Procedural Guidance (Version 4, August 2004), the CCW Handbook for Marine Intertidal Phase I Survey and Mapping (Wyn *et al.*, 2000), and the Guidelines for the Conduct of Benthic Studies at Marine Aggregate Extraction Sites (Ware and Kenny, 2011).

Field teams will identify and classify intertidal biotopes in accordance with the EUNIS and JNCC Marine Habitat Classification systems, recording key attributes such as dominant species, substrate type, exposure, sediment characteristics, and anthropogenic influences.

Survey locations will be recorded using differential Global Positioning System (dGPS), with coordinates recorded in latitude/longitude and Irish National Grid. Observations will be georeferenced using handheld GPS and supported by high-resolution photographs and field notes. Biotopes and habitat boundaries will be mapped in the field and subsequently digitised using GIS to produce detailed habitat maps. Particular attention will be paid to identifying any features of conservation interest (e.g., eelgrass beds, blue mussel beds, *Sabellaria* spp. reefs), with any such features mapped and documented in detail. The output will include a comprehensive report describing the survey methods, biotope classifications, ecological observations, and mapped outputs, along with GIS files and metadata. All work will be undertaken by experienced marine ecologists, with internal quality assurance to ensure data integrity and alignment with relevant statutory guidance.

2.3 Phase II Quantitative Intertidal Survey

A Phase II quantitative intertidal survey will be conducted within the survey area along four transects **(Figure 1)** with sampling undertaken at the upper, middle and lower shore levels of each transect. The methodology will follow that set out within the Marine Monitoring Handbook Procedural Guidance No's 3-1 (Intertidal Biotope Recording) (Wyn & Brazier, 2001) and 3-6 (Intertidal Core Sampling) (Dalkin and Barnett, 2001). Photographic records during surveying will be taken as appropriate for recording and reporting purposes.

Salient ecological features will be recorded as encountered along each transect, with additional notes, photographs and shore-level readings taken where appropriate. Rocks and stones will be overturned and the algal canopy, where present, will be partially removed at sampling stations, where applicable, to investigate

the presence of associated fauna. Quadrats will also be used to calculate the abundance of lugworms (Arenicola marina), and in situ dig-overs will be undertaken in areas where habitat variation occurs.

Where the substrate comprises fine soft mudflat and shore-based sampling cannot be undertaken safely, sampling will instead be carried out from a vessel at high water. A 0.025 m^2 Van Veen grab will be deployed from a RIB in the Upper Shore, Middle Shore and Lower Shore of each transect. Two replicate grab samples will be collected at each station for macrofaunal analysis, and one additional grab sample will be collected for Particle Size Analysis and organic carbon analysis. This approach will ensure that the required sediment and faunal samples can be obtained safely and in accordance with health and safety protocols. The vessel will be operated by qualified personnel and will comply with all relevant marine safety requirements.

Faunal samples will be preserved in 4% buffered formalin in separate containers labelled internally and externally. The depth of the anoxic layer will also be recorded for each sample. Sampling locations will be recorded using dGPS in latitude/longitude and Irish National Grid coordinates to maintain alignment with the planned survey design. A photograph will be taken at each sampling station to assist in visually characterising the sediment, and relevant field observations will be recorded. Any evidence of anthropogenic disturbance or damage, including bait digging, fishing activity and coastal defence works, will be logged, measured where relevant, and photographed.

Where any features of conservation interest are identified (for example seagrass, mussel beds or geogenic reef), the boundaries of these will be mapped using GPS in order to provide information on their spatial extent.

In summary, four transects will be surveyed, with sampling undertaken at the upper, middle and lower shore levels of each transect. Two faunal grab samples and one sediment sample will be collected at each shore level, resulting in a total of 24 faunal samples and 12 sediment samples for Particle Size Analysis and organic carbon analysis.

Table 2.1 Summarises the total sample requirements for the Proposed Maritime Usage.

Table 2.1: Total sample requirements for the marine surveys in Inner Dundalk Bay.

Survey Element	**No. Shorelines / Transects / Stations**	**Sample Replicates**	**Total Samples**	**Faunal Analysis Samples**	**PSA/TOC Samples**
Intertidal Phase I (Qualitative)	4 shorelines (~500 m each)	N/A	N/A	N/A	N/A
Intertidal Phase II (Boat, Van Veen)	4 transects	2 faunal grabs + 1 PSA/TOC grab per shore level	36	24	12
Subtidal Benthic (Boat, Van Veen)	5 stations	2 faunal grabs + 1 PSA/TOC grab per station	15	10	5

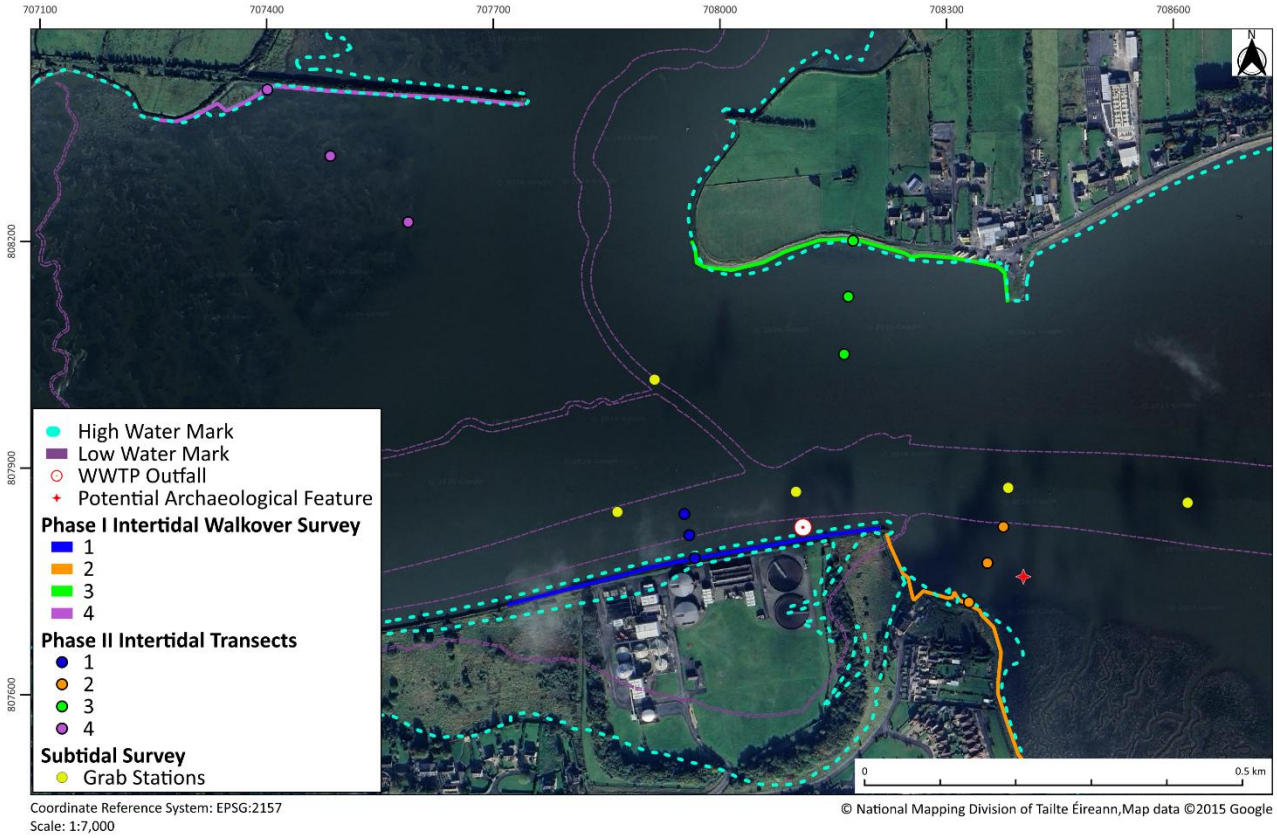

Figure 1: Proposed marine survey sampling locations and intertidal survey transect locations.