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environmental and conservation services

Natura Impact Statement (NIS)

Uisce Éireann - Rosie Hackett Bridge - Liffey Siphon Project

Proposed Maritime Site Investigations (SI)

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Document control			
Document reference: NIS ROSIE HACKETT BRIDGE - LIFFEY SIPHON PROJECT SURVEY			
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0.2	16/10/2026		Louise Scally

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1. Introduction

Uisce Éireann wishes to develop the Rosie Hackett Bridge - Liffey Siphon Project in Dublin City. The existing single-barrel inverted wastewater siphon beneath the River Liffey was constructed circa 1900 and represents a critical single point of failure in the wastewater network. The proposed permanent development would provide a new twin-barrel siphon between Eden Quay and Burgh Quay, together with shafts, connecting gravity pipelines, headworks and associated infrastructure.

The proposed development is a network upgrade of the critical infrastructure known as the "Liffey Siphon," (hereafter referred to as the “existing siphon”) crossing beneath the River Liffey at Rosie Hackett Bridge in Dublin City Centre. The existing siphon was constructed as a single-barrel inverted siphon circa 1900 as part of the original Dublin City Drainage Scheme, which was aimed at removing untreated wastewater discharges from the River Liffey. The existing siphon is 64 m long, comprising a brick-lined cast-iron pipe with a diameter of 910 mm. Located beneath the Rosie Hackett Bridge at a depth of circa 13 m below ground level (mbgl), it conveys flows from the city centre’s North catchment area, serving an estimated 117,000 population equivalent (PE) to the 8ft-Hawkins sewer on the South side of the River Liffey, and ultimately to the Ringsend (Water water treatment plant) (WwTP). This asset has exceeded its designed operational lifespan, resulting in it being a critical single point of failure within the wastewater network. Currently, there is no system resilience, and a failure could result in an estimated discharge of 30,000 m^3 of untreated wastewater into the River Liffey in a 24-hour period, having significant environmental consequences.

The main objective of the proposed development is to provide network resilience in case of asset failure or operational failure. To achieve the project objective, it is proposed that a new twin barrel siphon is constructed under the River Liffey in close proximity to the existing siphon. The proposed scope of work includes (i) constructing drive and reception shafts on Eden Quay and Burgh Quay respectively which will be converted into the ascending and descending legs for the proposed siphon. The descending leg in Eden Quay will also become the headworks for the siphon; (ii) constructing a new twin-barrel siphon beneath the Liffey River adjacent to the existing siphon, linking the two shafts; (iii) constructing a gravity sewer line on Eden Quay to intercept flows from the existing siphon and direct them to the new siphon, with another gravity sewer conveying flows from the new siphon to the existing 8ft sewer on Hawkins Street. Additionally, the project will involve (iv) decommissioning the existing siphon once the new infrastructure is operational.

Key Benefits of Proposed Development

The benefits of the Rosie Hackett Bridge–Liffey Siphon Project can be summarised as follows:

- **Improved Infrastructure Reliability:** Construction of a modern twin-barrel pipeline introduces resilience to the wastewater system, addressing the current single point of failure and enhancing long-term operational reliability.
- **Enhanced Maintainability through Headworks:** The inclusion of Headworks containing the MEICA equipment enables active maintenance of the system, reducing the risk of blockages and ensuring sustained network performance.
- **Future-Proofed Infrastructure:** Provision of a second barrel allows for increased flow capacity in the future, should the downstream network have sufficient capacity, ensuring the system can accommodate growth and future demands.

Temporary marine site investigations (SI) are required to characterise subsurface, riverbed and environmental conditions and to inform detailed design of the proposed siphon crossing. The Marine Usage Licence (MUL) scope comprises a geophysical survey, two marine boreholes, benthic/ecological sampling, an archaeological survey, and ancillary water/CTD observations (Figure 1). This Supporting Information for Screening for Appropriate Assessment (SISAA) addresses only temporary site-investigation (SI) activities, not construction of the permanent siphon or associated land-based works.

A report containing Supporting Information for Screening for Appropriate Assessment (SISAA) was prepared (MERC, 2026) to assist the Competent Authority, in undertaking Screening for Appropriate Assessment (AA). The SISAA concluded that the proposed project, without mitigation, may give rise to significant effects on the conservation objectives of a number of European sites. Accordingly, it concluded that Appropriate Assessment of the proposed project was required.

Based on that conclusion, this report represents a Natura Impact Statement (NIS) for the proposed project.

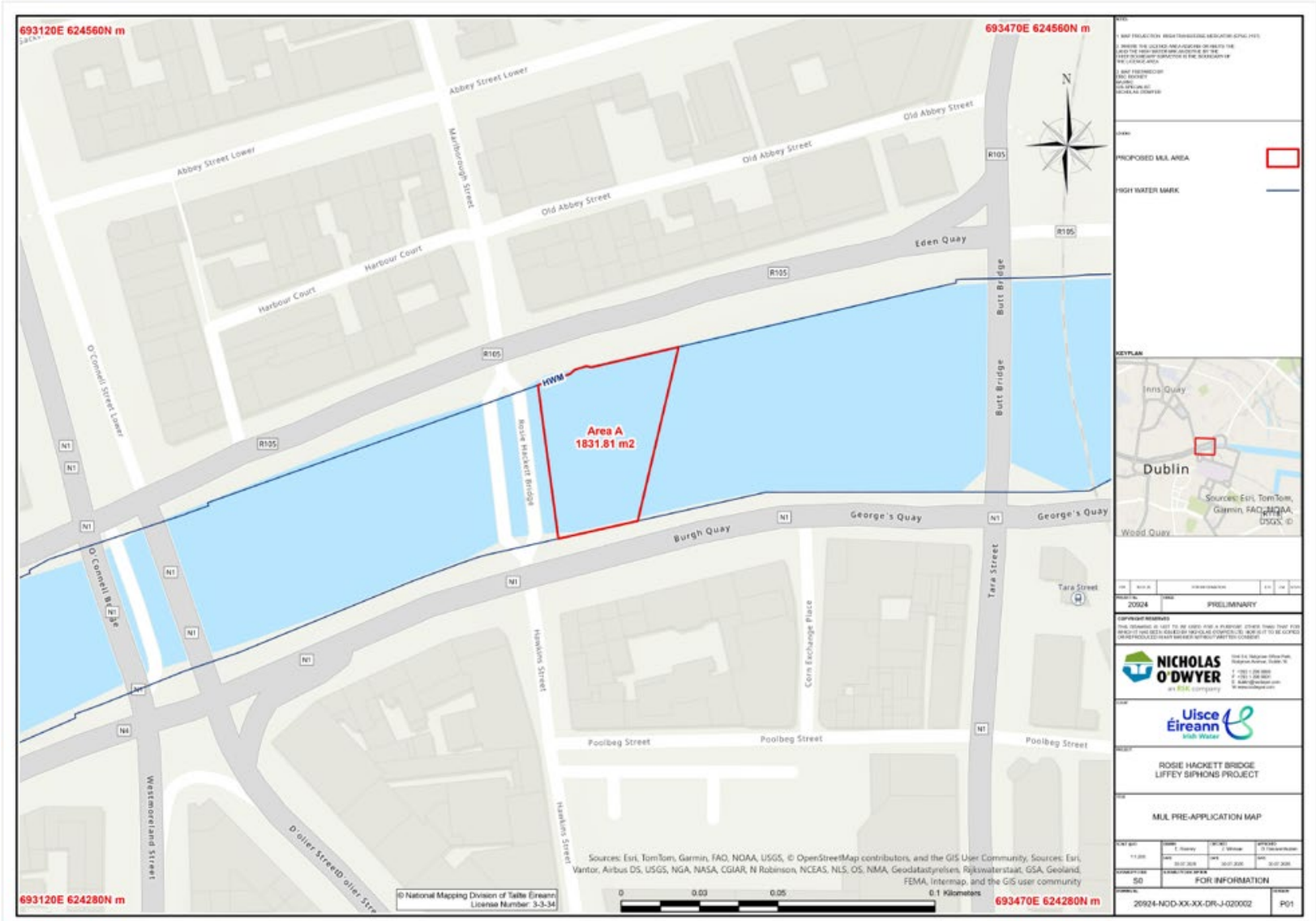


Figure 1. Proposed MUL project site.

2. Statement of authority

This report was prepared by Louise Scally of MERC Consultants. MERC are a specialist marine ecological survey and consultancy firm. Core staff have more than 60 years of combined experience and specialist knowledge in relation to Irish marine habitats and species in addition to the assessment and management of conservation interests. MERC have been responsible for conducting national surveillance monitoring of EU Annex I marine habitats for compliance under Article 17 of the EU Habitats Directive since 2015. In this context MERC have been responsible for surveillance monitoring, under Article 11, and reporting under Article 17 of the EU Habitats directive for the 2019 and 2025 reporting cycles. Between 2005 and 2010 MERC conducted the survey, monitoring and assessment of sensitive subtidal habitats in Ireland to inform the conservation objective setting for Irish marine SACs.

Louise Scally MCIEEM is a professional marine ecologist with a wide range of experience in the field of conservation biology, marine habitat mapping and ecology. She completed a M.Sc. in ecology and taxonomy at Trinity College Dublin in 1989 and a Ph.D. in taxonomy also at Trinity College Dublin in 2001. She is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). For the last 20 years she has specialised in the ecology of marine ecosystems. She has specialised in the assessment of benthic habitats with a focus on intertidal and subtidal reef habitats and sensitive seabed species and habitats. Over the last 20 years she has conducted extensive marine monitoring surveys and assessments of EU Habitats Directive marine Annex I habitats and their associated species within European sites in Ireland to assist Ireland in complying with monitoring obligations under the EU Habitats Directive.

3. Assessment Methodology

3.1 Guidelines and legislation

This report has been prepared, *inter alia*, with reference to the following European Directives, national legislation and guidance on the appropriate assessment of projects and plans with regard to the implementation of the provisions of Article 6(3) and (4) of the EU Habitats Directive 92/43/EEC.

- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild flora and fauna. Official Journal of the European Communities.
- Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (codified version).
- European Communities (Birds and Natural Habitats) Regulations 2011. SI No. 477 of 2011.
- Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. European Commission 2018. 7621 final. Office for Official Publications of the European Communities, Luxembourg.
- Assessment of plans and projects significantly affecting Natura 2000 sites; Methodological Guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC. European Commission, 2002.
- Appropriate Assessment Screening for Development Management. OPR Practice Note PN01. Office of the Planning Regulator. March 2021.
- Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters. Department of Arts, Heritage and the Gaeltacht, 2014.
- JNCC. 2023. JNCC guidance for the use of Passive Acoustic Monitoring in UK waters for minimising the risk of injury to marine mammals from offshore activities. JNCC, Peterborough.

- MARA (2025). Guidance for Applicants: Marine Usage Licence (MUL) Applications. Version 7, updated 5 November 2025.
- MARA (n.d.). Marine Usage Licence (MUL) – Application Form. Accessed December 2025.
- MARA (n.d.). Technical Mapping Guidance Notes for MAC/MUL Applications under the Maritime Area Planning Act 2021 (MAPA). Accessed December 2025.

3.2 Impact assessment approach

The following steps were carried out in the preparation of the SISAA to determine the Zone of Influence (ZoI) of the proposed project and determine the potential for Likely Significant effects (LSEs) on the conservation objectives of all European Sites within that ZoI. The assessment methodology is detailed in the SISAA (MERC, 2026) and summarised below.

- A description of the proposed project was compiled.
- A source-path receptor (SPR) model and used to determine the ZoI of the individual elements of the project.
- Once the ZoI of the proposed project was determined, European sites within this ZoI were documented, and an analysis of the sensitivity of ecological receptors therein was conducted. In determining the sensitivity of ecological receptors, consideration was given, *inter alia*, to the scale, scope and location of the proposed project relative to the aforementioned receptors.
- An assessment of likely significant adverse effects on the conservation objectives of European sites within the ZoI was compiled.
- A review of relevant publicly available data bases was conducted to determine the potential for in-combination effects of the proposed project in-combination with other projects and plans.

4. Proposed survey activities

4.1 Overview

The proposed maritime usage is in the tidal River Liffey in Dublin City, between Rosie Hackett Bridge and Butt Bridge, extending between Eden Quay on the northern bank and Burgh Quay on the southern bank. The proposed MUL area (Area A) is 1,831.81 m² (0.183 ha) and is shown in Figure 1 in relation to the Tailte Éireann High Water Mark.

The site investigations are intended to determine physical, geotechnical, archaeological and environmental conditions required to design and assess the new siphon crossing. The current controlled scope comprises MBES bathymetry, sub-bottom profiling, marine refraction seismic, marine electrical resistivity tomography (ERT), two marine boreholes, benthic ecology sampling, archaeological inspection, and ancillary water/CTD observations.

The modular jack-up barge for borehole drilling is indicatively 12 m wide x 14 m long. It is proposed to be craned into/out of the River Liffey from Eden Quay or Burgh Quay and manoeuvred to the two indicative borehole locations using a supporting vessel. Small survey vessels may access the MUL area from downstream. Table 1 summarises the proposed site investigation activities.

Table 1. Proposed Site Investigations (SI)

Activity	Purpose
Bathymetric survey (MBES)	Teledyne SeaBat T20-P multibeam survey of the proposed MUL area; indicative line spacing 5-20 m.
Marine refraction seismic	Controlled seismic source with HYD-360/08 (50 m) 8-element streamer hydrophone array (passive receiver); three 65 m lines; up to one day.
Sub-bottom profiling	Parametric SBP and/or AA301 boomer to map shallow stratigraphy and buried interfaces; up to one day.
Marine electrical resistivity tomography (ERT)	MAPPEM S Geophysics electromagnetic/resistivity survey along seabed/towed lines; survey extent up to approximately 300 m maximum total traverse length, aligned with the tunnelled marine extent and traverse direction; up to one daylight day.
Geotechnical boreholes	Two boreholes from a four-legged jack-up barge to a maximum 20 m below bed level; roto-sonic drilling with continuous casing through riverbed sediment/overburden and rotary coring in rock.
Benthic ecology sampling	Up to 30 locations within the MUL area, with up to four grab samples per location; drop-down video may precede sampling.
Ancillary water / CTD observations	Water samples and temperature/conductivity/salinity/depth observations may be collected using a small overboard CTD.
Archaeological survey	Non-disturbance dive/quayside inspection, probe and metal-detector survey, with recording of riverbed and quay features.

The proposed MUL duration is one year. The SI works are expected to require approximately 14-21 days in total and are currently programmed for Q1 2027, subject to consent, weather, tide and vessel availability.

Indicative activity durations are: MBES/SBP up to two days in total; marine refraction seismic up to one day; ERT up to one day; and drilling at two boreholes up to 14 days. Mobilisation/demobilisation is included within the overall 14–21-day programme.

Working hours are proposed to be up to 12 hours/day, seven days/week and predominantly during daylight. Jack-up mobilisation/demobilisation may occur at night, indicatively over up to four nights; 24-hour drilling is not proposed in the current MUL inputs.

The permanent siphon, permanent shafts and headworks, gravity pipelines, utility diversions, over-pumping, decommissioning of the existing siphon and permanent construction activities are outside the project assessed in this SISAA. Land-based utility, structural and geotechnical investigations are also outside the MUL.

4.1 Survey and site-investigation equipment

The proposed site-investigation equipment and indicative operating parameters are summarised in Table 1 and detailed below. The equipment associated sound levels are given in Table 2. Final contractor-specific plant and equipment may vary, but the assessment uses the maximum SI activity envelope.

- Indicative modular jack-up barge: approximately 12 m x 14 m; four legs; two borehole positions.
- Each jack-up leg has an indicative footprint of <1 m²; eight leg placements are anticipated across the two borehole locations.
- Boreholes: maximum 20 m below bed level; 200 mm diameter in overburden and 100 mm in rock; roto-sonic drilling with continuous casing through riverbed sediment/overburden and rotary coring in bedrock.
- Acoustic equipment parameters are provided in Table 2; final contractor settings will not exceed the assessed envelope.
- Programme: approximately 14-21 days overall; up to 12 hours/day; predominantly daylight, with night-time barge mobilisation/demobilisation possible.
- The assessed drilling method comprises roto-sonic drilling with continuous casing through riverbed sediment/overburden, with rotary coring used to advance through bedrock. Continuous casing will assist borehole stability and controlled recovery of drilled material. Minor, localised suspension of fine sediments may occur during penetration of soft riverbed material or tool insertion/removal; such disturbance is expected to be extremely limited in both extent and duration. The appointed survey contractor will provide site- and activity-specific Method Statements for the marine operations within its scope.
- Lighting is relevant principally to night-time mobilisation/demobilisation and must be considered for birds, otters and bats.
- Benthic sampling: up to 30 locations and up to four grabs per location; 0.1 m² per sample.
- Small survey vessels will approach from downstream. Navigation between Rosie Hackett Bridge and Butt Bridge is currently very limited due to bridge-height restrictions. Uisce Éireann is arranging a meeting with Dublin Port to establish its requirements for the proposed works. The appointed Contractor will liaise with the Harbour Master throughout the works, and marine operators and the public will be informed in advance of potential disruptions where works affect the navigational channel. The appointed survey contractors shall comply with the following as a minimum: Quality and Environmental Management Systems based on ISO9001:2015 and ISO14001; provision of site- and activity-specific Method Statements for all marine operations within their scope; provision of Quality Management Plans for all marine operations. All vessels will be fit for purpose, certified and capable of safely undertaking all required survey work. Marine vessels will be governed by the provisions of the Sea Pollution Act 1991, as amended. In addition, all vessels will adhere to published guidelines and best working practices such as the National Maritime Oil/HNS Spill Contingency Plan (NMOSCP), Marine Pollution Contingency Plan (MPCP), Chemicals Act 2008 (No. 13 of 2008), Chemicals

(Amendment) Act 2010 (No. 32 of 2010) and associated regulations. Vessels shall have a Health, Safety and Environmental Management system which should conform to the requirements of the latest International Maritime Organisation (IMO), Safety of Life at Sea (SOLAS) and environmental requirements for their classification and with any national requirement of the territorial or continental / EEZ waters to be operated in. The SI works will be undertaken from vessels in accordance with the relevant guidelines required to manage the risk to marine mammals from man-made sound sources in Irish waters (DAHG, 2014).

- Small survey/support vessels will approach the MUL area from downstream; vessel dimensions and navigation/safety-zone arrangements will be finalised with the appointed contractor and relevant navigation authority but must remain within the assessed activity envelope.
- Two indicative borehole locations are shown in Figure 2.

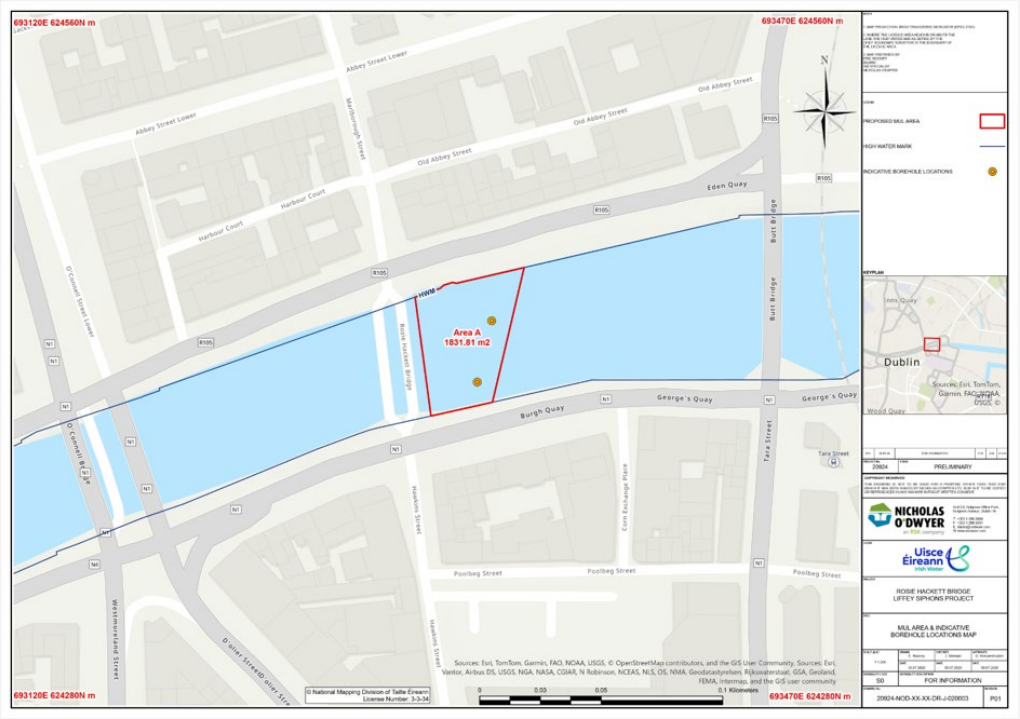


Figure 2. MUL Area A and indicative borehole locations.

Table 2. Equipment specification and sound pressure levels

Equipment	Model	Deployment	Company	Sound Pressure Level / Source Level (dB re 1 µPa)
MBES	Teledyne SeaBat T20-P	Vessel-mounted / towed survey platform	Teledyne	190-420 kHz; proposed operation at 420 kHz. Source level estimated at 225 dB re 1 µPa at 1 m (peak)
Parametric SBP	Innomar "standard" (indicative)	Towed	Innomar	Primary 85-115 kHz; secondary 2-22 kHz; up to 232 dB re 1 µPa @ 1 m, typically <200 dB.
Boomer SBP	Applied Acoustics AA301	Surface-towed catamaran	Applied Acoustics	0.5-5 kHz; 205-211 dB re 1 µPa @ 1 m.
Marine refraction seismic	Small airgun typical of similar marine SI projects as the reference source; final source selected by the specialist supplier based on site conditions. Weight-drop/impact source remains open for consideration.	HYD-360/08 (50 m) 8-element streamer hydrophone array (passive receiver)	GI/geophysical contractor (TBC)	Low-frequency airgun impulse energy; peak frequencies 5-90 kHz; source level 186-220 dB re 1 µPa @ 1 m; three 65 m lines (195 m total), daylight, up to 1 day. Source active only for testing/line acquisition.
Marine ERT	MAPPEM S Geophysics	Towed/fixed electromagnetic array	S Geophysics	Non-seismic; no significant underwater acoustic source identified. Survey extent up to approx. 300 m maximum total traverse length, aligned with the tunnelled marine extent and traverse direction, within one working day.
Geotechnical drilling	Roto-sonic drilling with continuous casing / rotary coring in rock	Four-legged jack-up barge	GI Contractor (TBC)	Rotary drilling: 0.001-0.120 kHz; approximately 145 dB re 1 µPa @ 1 m (MUL input). Roto-sonic drilling is assessed as local mechanical/vibratory noise.
Survey vessel/ support vessel	TBC	River surface	TBC	Vessel/mechanical noise.

Jack-up barge

The works will use a modular jack-up barge. Indicatively 12 m wide x 14 m long, assembled in the River Liffey and manoeuvred to the borehole positions by a support vessel. Four legs will penetrate the

riverbed for stability. Final contractor vessel/barge details and navigation arrangements remain subject to appointment.

Table 3. Jack-up barge

Item	MUL input	Assessment
Working platform	Modular jack-up barge, indicatively 12 m wide x 14 m long.	Supports the two marine boreholes within the MUL area.
Riverbed contact	Four legs; each leg typically <1 m² footprint. Eight leg placements across the two borehole positions.	Temporary, localised physical disturbance to the riverbed.
Mobilisation	Craned into/out of the River Liffey from Eden Quay or Burgh Quay and manoeuvred by a support vessel.	Mobilisation/demobilisation may occur at night, indicatively over up to four nights.
Working period	Drilling up to 14 days; overall SI programme approximately 14-21 days; up to 12 hours/day, predominantly daylight.	Defines duration of disturbance and temporary channel occupation.
Support vessels	Small survey/support vessels may access from downstream; final contractor vessel details are not yet fixed. The appointed survey contractors shall comply with the following as a minimum: Quality and Environmental Management Systems based on ISO9001:2015 and ISO14001 Provision of site and activity specific Method Statements for all the marine operations within their scope Provision of Quality Management Plans for all the marine operations.	Vessel noise is secondary to active geophysical sources for AA screening; final navigation arrangements are contractor dependent.

Bathymetric survey

A Teledyne SeaBat T20-P MBES is proposed. It operates within 190-420 kHz and is intended to run at 420 kHz for high-resolution bathymetry. Indicative line spacing is 5-20 m. The activity is expected to be completed within daylight over up to one day.

Marine refraction seismic

Marine refraction surveys use controlled seismic sources to generate seismic waves through sediment and rock. A small airgun, as typically used on similar marine SI projects, is the reference source; the specialist geophysical supplier will make the final source selection based on site conditions, with a weight-drop/impact source remaining open for consideration. Refracted signals will be recorded using a HYD-360/08 (50 m) eight-element fluid-filled streamer hydrophone array (50 m tow leader; 4.5 m array tube; 360 mm element spacing; array sensitivity -169 dB re 1 V/µPa; frequency response 300 Hz-

4 kHz (-3 dB)). The hydrophone array is a passive receiver. Three 65 m survey lines (195 m total) are assessed within the MUL area and can be completed in up to one day.

Marine electrical resistivity tomography (ERT)

A MAPPEM S Geophysics marine ERT/electromagnetic array is proposed to map subsurface resistivity contrasts. It is a non-seismic technique and is not expected to generate significant underwater acoustic emissions. This SISAA assesses a maximum of three 65 m lines (195 m total line length), undertaken within one working day.

Geotechnical boreholes

Two marine boreholes are proposed at the indicative locations shown in Figure 2. Boreholes may extend to a maximum of 20 m below bed level, with 200 mm diameter through overburden and 100 mm in rock. Roto-sonic drilling with continuous casing through riverbed sediment/overburden, with rotary coring used to advance through bedrock. Continuous casing will assist borehole stability and controlled recovery of drilled material. Minor, localised suspension of fine sediments may occur during penetration of soft riverbed material or tool insertion/removal; such disturbance is expected to be extremely limited in both extent and duration.

Benthic ecology sampling

Up to 30 benthic sampling locations are proposed within the MUL area, with up to four grab samples at each location. Drop-down video may be undertaken before sampling. A Day grab is described for soft-sediment sampling; 0.1 m^2 per sample.

Ancillary water and CTD sampling

Ancillary observations may include water sampling and temperature, conductivity/salinity and depth measurements using a small overboard CTD.

Archaeological survey

The archaeological scope comprises non-disturbance dive inspection and quayside assessment, including probe and metal-detector survey and recording of bridge structures, culverts, masonry remains, riverbed topography and existing riverside conditions.

Vessel/platform presence and positioning

The main SI works are expected to operate up to 12 hours/day, seven days/week and predominantly in daylight. Jack-up mobilisation/demobilisation may take place at night over up to four nights. The overall works period is approximately 14-21 days.

5. Assessment of Likely Significant Effects on European Sites

The screening determination identified the following as having the potential for likely significant effects on European sites within the ZoI of the proposed project:

1. Disturbance and harm to Grey seal (*Halichoerus grypus*) and Harbour seal (*Phoca vitulina)* associated with Lambay Island SAC.

2. Disturbance and harm to Harbour porpoise (*Phocoena Phocoena*) associated with Dalkey Island to Rockabill SAC and Lambay Island SAC.

3. Negative effects on the structure and function of the Mudflats and sandflats not covered by seawater at low tide habitat within South Bay Dublin SAC and North Dublin Bay SAC through the introduction of Invasive Alien Species.

4. Potential for in-combination effects related to 1 project resulting from a potential temporal overlap with underwater noise generating activities.

The rationale for this assessment is given below:

5.1 Marine mammals and cetaceans

Underwater noise from the combined geophysical survey equipment would be dominated by the impulsive airgun and boomer sources and could be detected by marine mammals, including Harbour Seal, Grey Seal and Harbour Porpoise. Noise could potentially propagate through the canalised River Liffey for up to approximately 3 km upstream and downstream of the survey area. However, cetaceans are unlikely to occur within the canalised inner Liffey, whereas seals are known to travel and forage within the river. The potential for auditory injury (PTS) would be confined to within 100 metres of an operating source (applying a highly conservative buffer), while temporary disturbance, avoidance or displacement is considered most likely within approximately 1 Km (TTS). While noise may be detectable up to 3 km distant, this would occur at progressively lower levels, and detection alone would not constitute a significant ecological effect.

While LSE on Harbour porpoise and Bottlenose Dolphin are considered negligible, there remain uncertainty with regard to the potential for LSE effects on Grey seal and Harbour seal due to their recorded use of the section of the River Liffey in the vicinity of the proposed project site. Therefore, with due consideration to the precautionary principle, and in the absence of the measures recommended in the Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters (NPWS, 2014), LSE on European sites, within the ZoI of the proposed project, designated for relevant marine-mammal qualifying interests cannot be excluded.

The potential for LSEs on the conservation objectives of Grey Seal [1364] and Harbour Seal [1365] within Lambay Island SAC and, out of an abundance of caution, Harbour Porpoise within Lambay Island SAC and Rockabill to Dalkey Island SAC, which are within the ZoI of the proposed project, are considered possible.

5.2 Invasive Alien Species (IAS)

The mobilisation of vessels, platforms and equipment creates a potential pathway for the introduction or spread of aquatic invasive species. While the dumping of ballast water from vessels is not permitted within the Dublin Port authority area, vessels also have the potential to introduce IAS as a result of hull fouling.

The majority of hull-fouling species require hard substrates for settlement and establishment. Their potential to establish within the predominantly soft-sediment qualifying habitats of adjacent SACs is therefore considered limited, particularly where suitable attachment surfaces are absent. However, shells, gravel and biogenic structures may provide settlement surfaces within these sedimentary habitats.

While the potential for the introduction of IAS leading to LSEs on the benthic habitat Qualifying Interests of adjacent SACs is considered unlikely due to the distances involved, uncertainty still exists.

Therefore, with due regard to the precautionary principle, the potential for LSEs on the conservation objectives of South Dublin Bay SAC and North Dublin Bay SAC cannot be excluded.

5.3 In combination effects

While a single project or plan may not in itself result a significant effect on the conservation objectives of a site, a combination of projects within a localised area may cause a significant effect on a site. Therefore, the cumulative impacts must be taken into consideration when assessing the possible impacts of a project.

Potential project related impacts were identified in the SISAA and included pressures resulting from Jack-up barge and vessel presence, acoustic surveys and benthic surveys. Additional projects identified as having potential to act in-combination with the proposed project are considered to be those projects most likely to contribute to these pressures and generate additional underwater noise, vessel disturbance and impacts on benthic habitats.

One project (MUL 260055), see Table 4, was identified that had the potential to introduce underwater noise into the marine environment. Should there be a temporal overlap between the proposed project and MUL260055 a cumulative impact might arise.

Table 4. Project identified for potential in combination effects

MUL260055	Application received 31 July 2026 / MARA	MetroLink River Liffey SI – River Liffey between Rosie Hackett Bridge and Butt Bridge; three geotechnical boreholes from a jack-up barge with associated sampling/testing.	Direct spatial overlap; underwater and above-water noise/vibration, drilling/bed disturbance, sediment/water quality, vessel/platform activity, navigation, lighting and shared mobile receptors.	MARA MUL260055 application and supporting documentation.

Therefore, the potential for likely significant in-combination effects, between the identified project and the introduction of underwater noise, as a result of the proposed project, are possible without mitigation.

5.4 Summary of potential Likely Significant Effects

In summary, The SISAA identified thirteen European sites within the ZoI of the proposed project:

- South Dublin Bay SAC
- North Dublin Bay SAC
- Lambay Island SAC
- Rockabill to Dalkey Island SAC
- North-west Irish Sea SPA
- South Dublin Bay and River Tolka Estuary SPA
- North Bull Island SPA
- Howth Head Coast SPA
- Ireland's Eye SPA
- Baldoyle Bay SPA
- Dalkey Islands SPA
- Lambay Island SPA
- Rockabill SPA

Of these, the assessment found the potential for Likely Significant Effects (LSEs) on the Qualifying interests of four SACs (South Dublin Bay SAC, North Dublin Bay SAC, Lambay Island SAC and Rockabill to Dalkey Island SAC) as a result of the proposed project.

Table 4 provides a summary of the assessment of LSEs on the qualifying interests of these four sites without mitigation.

Table 4. Summary of assessment

NPWS Site code	Site name	Qualifying interests considered	Distance to MUL area	Screened in/out	Screening rationale
000210	South Dublin Bay SAC	Mudflats and sandflats [1140]	~3.3 km straight-line; ~4.7–5 km downstream/hydrological route.	**Screened in**	Indirect hydrological source-pathway-receptor link; no habitat overlap. Site screened in based on the precautionary principle re the potential introduction of invasive species.
		Annual vegetation of drift lines [1210]		Screened out	Coastal habitat outside of ZoI.
		Salicornia and other annuals colonising mud and sand [1310]		Screened out	Coastal habitat outside of ZoI.
		Embryonic shifting dunes [2110]		Screened out	Coastal habitat outside of ZoI.
000206	North Dublin Bay SAC	Mudflats/sandflats [1140]	~5.3 km straight-line; ~6.7 km downstream.	**Screened in**	Indirect hydrological source-pathway-receptor link; no designated habitat overlap. Site screened in based on the precautionary principle re the potential introduction of invasive species.
		Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]		Screened out	Coastal habitat outside of ZoI.
		Annual vegetation of drift lines [1210]		Screened out	Coastal habitat outside of ZoI.
		Salicornia and other annuals colonising mud and sand [1310]		Screened out	Coastal habitat outside of ZoI.
		Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]		Screened out	Coastal habitat outside of ZoI.
		Mediterranean salt meadows (Juncetalia maritimi) [1410]		Screened out	Coastal habitat outside of ZoI.
		Embryonic shifting dunes [2110]		Screened out	Coastal habitat outside of ZoI.

NPWS Site code	Site name	Qualifying interests considered	Distance to MUL area	Screened in/out	Screening rationale
		Shifting dunes along the shoreline with *Ammophila arenaria* (White dunes) [2120]		Screened out	Coastal habitat outside of ZoI.
		Humid dune slacks [2190]		Screened out	Coastal habitat outside of ZoI.
		Petalophyllum ralfsii (Petalwort) [1395]		Screened out	Coastal species outside of ZoI.
000204	Lambay Island SAC	Reefs [1170]	~22 km straight-line; ~27 km by marine route.	Screened out	No habitat overlap; SPR link too weak.
		Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]		Screened out	No habitat overlap; SPR link too weak.
		Phocoena phocoena (Harbour Porpoise) [1351]		**Screened In**	Mobile species within the ZoI of the proposed project.
		Halichoerus grypus (Grey Seal) [1364]		**Screened In**	Mobile species within the ZoI of the proposed project.
		Phoca vitulina (Harbour Seal) [1365]		**Screened In**	Mobile species within the ZoI of the proposed project.
003000	Rockabill to Dalkey Island SAC	Reefs [1170];	~12 km straight-line; 16.55 km marine/hydrological route.	Screened out	No habitat overlap; SPR link too weak.
		Phocoena phocoena (Harbour Porpoise) [1351]		**Screened In**	Mobile species within the ZoI of the proposed project.

6. Mitigation measures

The following measures are recommended

6.1 Harbour porpoise

NPWS (2014) provides guidance to manage the risk to marine mammals from man-made sound sources in Irish waters. This document provides guidance and mitigation measures to address key potential sources of anthropogenic sound that may impact negatively on marine mammals in Irish waters. The guidance set out in NPWS (2014), relates to geophysical acoustic surveys (seismic, multibeam and single beam surveys) and should be fully implemented as detailed below.

1. A qualified and experienced marine mammal observer (MMO) shall be appointed to monitor for marine mammals and to log all relevant events using standardised data forms.
2. Acoustic surveying using the geophysical survey equipment specified for this project shall not commence if marine mammals are detected within a 500m radial distance of the sound source intended for use, i.e., within the Monitored Zone. A 500m zone is considered appropriate as empirical evidence[1] by the authors of this report has demonstrated that seals do not abandon their haul out sites unless approached within less than 200m of the site.

Pre-Start Monitoring

Sound-producing activities shall only commence in daylight hours where effective visual monitoring, as performed and determined by the MMO, has been achieved. Where effective visual monitoring, as determined by the MMO, is not possible the sound-producing activities shall be postponed until effective visual monitoring is possible.

An agreed and clear on-site communication signal must be used between the MMO and the Works Superintendent as to whether the relevant activity may or may not proceed, or resume following a break (see below). It shall only proceed on positive confirmation with the MMO.

The MMO shall conduct pre-start-up constant effort monitoring at least 30 minutes before the sound-producing activity is due to commence. Sound-producing activity shall not commence until at least 30 minutes have elapsed with no marine mammals detected within the Monitored Zone by the MMO.

This prescribed Pre-Start Monitoring shall subsequently be followed by a Ramp-Up Procedure which should include continued monitoring by the MMO.

Ramp-Ip Procedure

In commencing an acoustic survey operation using the above equipment, the following Rampup Procedure (i.e., “soft-start”) must be used, including during any testing of acoustic sources, where the output peak sound pressure level from any source exceeds 170 dB re: 1µPa @1m:

(a) Where it is possible according to the operational parameters of the equipment concerned, the device’s acoustic energy output shall commence from a lower energy start-up (i.e., a peak sound pressure level not exceeding 170 dB re: 1µPa @1m) and thereafter be allowed to gradually build up to the necessary maximum output over a period of 20 minutes.

(b) This controlled build-up of acoustic energy output shall occur in consistent stages to provide a steady and gradual increase over the ramp-up period.

[1] Surveys, conducted on behalf of Bord Iascaigh Mhara, of seal disturbance at haul out sites as a result of fishing activity (potting) at haul out sites in Roaringwater Bay in 2015.

(c) Where the acoustic output measures outlined in steps (a) and (b) are not possible according to the operational parameters of any such equipment, the device shall be switched "on" and "off" in a consistent sequential manner over a period of 20 minutes prior to commencement of the full necessary output.

In all cases where a Ramp-Up Procedure is employed the delay between the end of ramp-up and the necessary full output must be minimised to prevent unnecessary high-level sound introduction into the environment.

Once the Ramp-Up Procedure commences, there is no requirement to halt or discontinue the procedure at night-time, nor if weather or visibility conditions deteriorate nor if marine mammals occur within a 500m radial distance of the sound source, i.e., within the Monitored Zone.

Breaks in sound output

If there is a break in sound output for a period greater than 30 minutes (e.g., due to equipment failure, shut-down, survey line or station change) then all Pre-Start Monitoring and a subsequent Ramp-up Procedure (where appropriate following Pre-Start Monitoring) must be undertaken.

For higher output survey operations which have the potential to produce injurious levels of underwater sound (see sections 2.4, 3.2) as informed by the associated risk assessment, there is likely to be a regulatory requirement to adopt a shorter 5-10 minute break limit after which period all Pre-Start Monitoring and a subsequent Ramp-up Procedure (where appropriate following Pre-Start Monitoring) shall recommence as for start-up.

Reporting

Full reporting on MMO operations and mitigation undertaken must be provided to the Regulatory Authority as outlined in Appendix 6 of NPWS (2014).

6.2 Grey seal and Harbour Seal

In line with the guidance to manage the risk to marine mammals (NPWS, 2014), the mitigation proposed in section 6.1 for Harbour porpoise are also proposed for Grey seal and Harbour seal.

6.3 Invasive Alien species

In the event that non-local vessels, i.e. vessels which have been operating within the Dublin Port Area within the previous 12 months are being used, the following measures are recommended to mitigate the risk of introduction of invasive alien species into the proposed project site and its environs. Prior to mobilisation, the contractor shall conduct biosecurity procedure consistent with the IMO Guidelines for the control and management of ships' biofouling (2023). The vessel operating, maintenance and cleaning histories shall be reviewed, and submerged hull surfaces and fittings inspected by a suitably competent person. Where attached fouling organisms are identified, these shall be removed before mobilisation at a suitable facility. An inspection report shall be prepared for review and acceptance by Uisce Éireann before deployment.

6.4 In-combination effects

Sections 6.1 and 6.2 set out the proposed mitigation to avoid the potential for likely significant effects as a result of:

- Disturbance & creation of artificial barriers by underwater noise

To avoid the potential for in-combination effects, the applicant shall coordinate with other authorised licence holders carrying out any underwater noise inducing survey activities within a 10 km radius of the proposed survey areas

7. Transboundary effects

Transboundary effects concern the likelihood of significant impacts on a site within the Natura 2000 network that lies outside our national boundaries. Since 1 January 2021 nature conservation areas in the UK (including Northern Ireland) are no longer part of the Natura 2000 network (OPR, 2021).

The ZoI of the proposed project has been estimated and all European sites with the potential for project related impacts have been assessed, including *ex-situ* effects. The SISAA did not identify any potential for impact on *ex-situ* sites, due to the scale and scope of the project and the likely magnitude of any effects.

Therefore, no transboundary effects are considered possible.

8. Residual impacts

No residual impacts of the proposed project have been identified or are considered possible.

9. Natura Impact Statement Conclusion

This assessment is based on complete, precise and definitive findings in the light of the best scientific knowledge. It objectively concludes that, provided the mitigation measures recommended in this document are fully implemented, **no adverse effect on the integrity** of any European site will occur.

10. Bibliography

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