Dublin Port Company

APPENDIX A

ECOLOGICAL SURVEY FOR OTTER (2026)

3FM Project

IBE2022

F01

28 September 2026

TETRA TECH

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1 INTRODUCTION

Tetra Tech was commissioned by Dublin Port Company to carry out an Ecological Survey for Otter to support a planning application for the proposed 3FM Project.

Tetra Tech carried out an Ecological Survey for Otter between June 2022 and February 2023 and again in April and May 2024 to inform an ecological impact assessment on these species contained within Chapter 7 Biodiversity of Volume 2, Part 2 of the Environmental Impact Assessment Report (EIAR) prepared for the proposed 3FM Project (ABP Ref: PA29N.320250). In response to submissions and observations made on the planning application materials, Tetra Tech undertook further updated otter surveys in December 2024 and January 2025 to address observations made by the Department of Housing, Local Government and Heritage in its September 2024 consultation response to the Commission.

The aim of this report is to now provide the results of further update otter surveys carried out in August and September 2026 to address a request for Further Information by the Commission.

This survey report should be read in conjunction with the entire planning application pack and EIAR of the 3FM Project, in addition to updated mammal survey information submitted in March 2025 by DPC in response to submissions and observations received by the Commission.

1.1 Ecological Survey for Otter

The aim of the report is to provide a description of the survey methods used; to provide the detailed results of further otter surveys, and to provide an interpretation of the results.

1.2 Proposed Project

The proposed 3FM Project is the third and final Strategic Infrastructure Development (SID) project at Dublin Port from the Dublin Port Masterplan 2040. The location of the site and the red line boundary are illustrated in **Figure 1.0 Site Location**.

2 METHODOLOGY

2.1 Statement of Authority

Dave Welsh, mammal surveyor and report editor (2026), is an Associate Ecologist with Tetra Tech and holds a BSc (Hons) in Marine Science, a MSc in Ecological Management and Conservation Biology with over 11 years of experience in ecological consultancy. Dave is a protected species licence holder and has extensive experience of mammal survey including walkover surveys, infra-red camera monitoring, ECoW and derogation works. Dave is an associate member of the CIEEM.

The report has additionally been reviewed and edited by Suzanne Lowry, a Senior Associate of Ecology within Tetra Tech. Suzanne holds a BSc (Hons) in Biological Sciences, a MSc in Environmental Management and has over 21 years of experience in the field of ecology and environmental consultancy. Suzanne has extensive experience of project management and co-ordination, ecology field survey and technical report writing. Suzanne is an Associate member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

The report has been approved for issue by James McCrory, Technical Director of Ecology with Tetra Tech. James holds a BA (Hons) in Natural Sciences (Mod) Botany and a MSc in Habitat Creation and Management. James is a Chartered Environmentalist (CEnv), a Chartered Ecologist (CEcol), a Chartered Biologist (CBiol) and a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and the Royal Society of Biology (MRSB). James is a former member of the CIEEM Irish Section Committee and CIEEM Policy Review Group in Ireland and a member of the CIEEM technical working group updating the Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland. James currently sits on the CIEEM technical working group for EcIA accreditation across the Institutes' practitioner network.

Tetra Tech confirm that the professional judgement expressed herein is the true and bona fide opinion of our professional ecologists. The information prepared and provided is accurate at the time of issue of this report and has been prepared and provided in accordance with the CIEEM Code of Professional Conduct (CIEEM, 2024).

2.2 Desk Study

The original desk study undertaken to inform Chapter 7 Biodiversity of Volume 2, Part 2 of the EIAR prepared for the proposed 3FM Project, has been updated for the purpose of this report.

The National Biodiversity Data Centre (NBDC) Biodiversity Maps portal was used to identify the existence of historical records of otter within 1 km of the site of the proposed project. Information from the NBDC Biodiversity Maps was checked in January 2025 and 2026.

2.3 Otter Survey

Further otter surveys were carried out on the 12th, 18th and 23rd of December 2024, 14th and 17th of January 2025 to establish the presence of otter holts and/or otter foraging areas within the site of the 3FM Project and within 150 m of red line boundary. The 150 m extension is in consideration of a potential occurrence of a natal holt. A boat-based survey was carried on the 14th January 2025.

In 2026, further otters were carried out within 150m of the red line boundary, these surveys were undertaken on the 19th and 20th, 26th of August 2026 and 9th of September 2026. A boat-based survey was carried out on 19th August.

Two trail cameras deployed on the 19th of August within the Yacht club at Poolbeg Harbour. The trail camera monitoring is still ongoing as of 25th of September 2026 and is expected to end when the yard activity increases in late September which will require the removal of trail cameras. A total of 38 nights of footage have been reviewed.

The location of otter holts was recorded, mapped and photographed where present.

The site was surveyed for evidence of otter including:

- Holts
- Couches
- Spraint sites
- Feeding sites
- Paths
- Slides
- Footprints

2.3.1 Survey Limitations

Health and safety constraints provided limitations for access where areas of rock armour were hazardous or in areas where the intertidal zone was inaccessible. Tidal constraints provided limitations for access during the boat-based survey.

2.4 Anecdotal Stakeholder Observations

Anecdotal evidence was also gathered from local stakeholders of Dublin Port to gather further information on the presence of otter activity within the site.

3 SURVEY RESULTS

3.1 Desk Study

The NBDC Biodiversity Maps identified no new records of otter within 1 km of the site since the submission of the original planning application. As of September 2026, there are still no new records of otter within 1km of the site.

3.2 2024/2025

A map illustrating the location of otter holts and field signs recorded during the 2025 surveys can be found in **Figure 2.0 Otter Survey Results**.

There were no additional otter holts or couches recorded by Tetra Tech during the 2025 survey campaign within the site of the 3FM Project or within 150 m of the red line boundary.

The otter holts identified during the original survey included two holts located approximately 60 m from the red line boundary at Terminal 5 on the northern side of the River Liffey. Otter Holt 1 remains active evidenced by fresh spraints (Figure 2.0). Otter Holt 2 has no evidence of mammal activity (Figure 2.0).

A single fresh otter spraint was recorded on 17th January 2025 at the location of the proposed Turning Circle of the 3FM Project. Two other (unmapped) spraint-like droppings were recorded: one on the key wall steps at Pigeon House Power Station docking area; and the second at the entrance to the walled area at the Grand Canal Docks. Both were old and odourless.

Each of the referenced features are presented in Plates 1 – 6 below. The location of otter holts, features, and field signs can be found in **Figure 2.1 Otter Survey Results**.



Plate 1 showing a single spraint at the corner of the proposed 3FM Project Turning Circle



Plate 2 showing Otter Holt 1 (active)



Plate 3 above showing Otter Holt 2 (inactive)

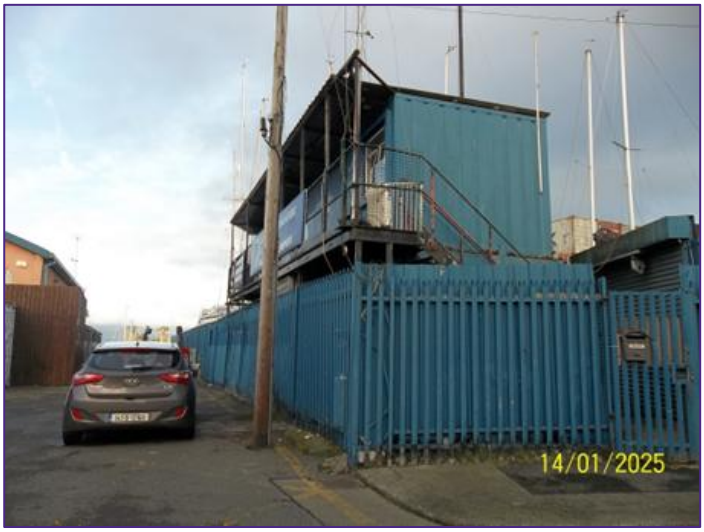


Plate 4 showing the offices of Sea Safari Tours Ltd at Poolbeg Marina beneath which otter has been reported to shelter (stakeholder observation)

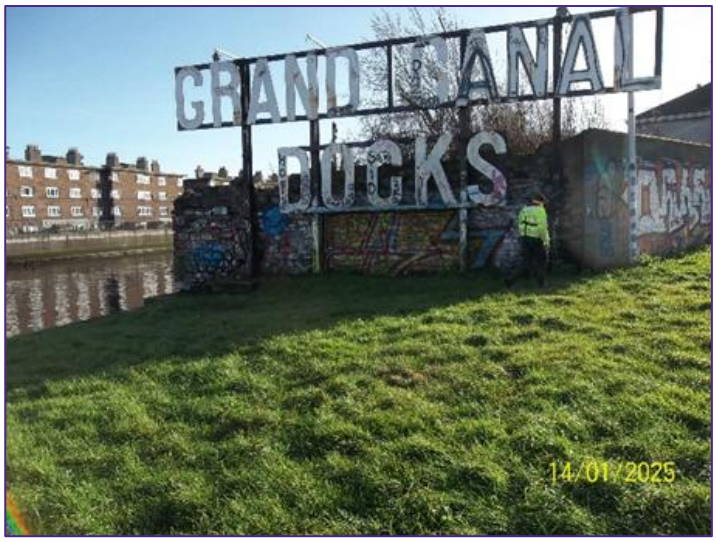


Plate 5 showing a walled enclosure and associated dwelling at Grand Canal Docks (Holt 4). Otter was reported to access this enclosure via a small missing section of bricks to shelter (stakeholder observation).



Plate 6 showing the location of an unverified otter couch/holt (stakeholder observation) at the floating dock of the MV Cill Airne Boat Bar & Restaurant (Holt 5)

3.3 2026

3.3.1 General Otter Activity

A map illustrating the location of otter holts and field signs recorded during the 2026 surveys can be found in **Figure 2.2 Otter Survey Results**.

There were no additional otter holts or couches recorded by Tetra Tech during the 2026 survey campaign within the site of the 3FM Project or within 150 m of the red line boundary. All areas which were previously surveyed were surveyed again in 2026, however no evidence of otter was recorded, including spraints. It is acknowledged that these survey findings do not confirm absence of otter, however, latest survey findings are consistent with previous surveys and assessments suggesting that otter activity is relatively low within the lower Liffey/Dublin Port Area. Two otter spraints were recorded in May 2026 along the northern Dublin Port Boundary (Tolka Estuary side), outside of the 3FM survey area (see plate 8) during an Artificial Otter Holt Suitability Assessment Survey.



Plate 7 showing surveyor using a Pulsar thermal imaging device to search for potential otter heat signatures during boat-based survey prior to approach.



Plate 8 showing otter spraint locations (S1 & S2)

3.4 Anecdotal Stakeholder Observations

Otter had previously been seen to seek shelter under the offices of Sea Safari Tours Ltd at Poolbeg Marina, referred to in this report as (potential) Holt 3 (Figure 2.1 and 2.2). The stakeholder confirmed that this activity had ceased and speculated that otters left this location due increasing numbers of fox *Vulpes vulpes*. However, on the 6th February 2025, the stakeholder contacted Tetra Tech to confirm a single otter was observed going under the offices of Sea Safari Tours Ltd.

In 2026, the same stakeholder confirmed that they had not observed otter at this location since the last sighting in February 2025. They stated that cats were regularly observed under the shipping container structure and that fox was observed on occasions.

The same stakeholder has observed otter entering the walled enclosure by the dwelling at Grand Canal Docks (Figure 2.1 and 2.2) in the past via a hole in the brickwork at the top of the steps, referred previously as Holt 4. The stakeholder confirmed that, based on their observations, this activity has now ceased. This enclosed garden is located immediately beside a source of freshwater, the Grand Canal. In 2026, there was no evidence that otters were using the enclosed garden as a resting place. However, a strong fox scent indicated that foxes regularly frequented the location.

Tetra Tech have also been informed of a stakeholder having observed an otter holt/couch (previously referred to as Holt 5) at the floating dock of the MV Cill Airne Boat Bar and Restaurant (Figure 2.1).

During the 2026 surveys, no evidence of otter was recorded at this location. Given the highly disturbed location and type of structure, it is considered highly unlikely that it is utilised by otter, either as a holt (underground/covered resting site) or as a couch (short term above ground resting site). Any previous sightings are likely an otter briefly resting or feeding while foraging along the lower Liffey/Dublin Port area.

3.5 Potential Holts

3.5.1.1 Holts 1 & 2

Construction works associated with Port Internal Road Network (Planning Reg. Ref. 3084/16 as amended by Planning Reg. Ref. 3220/21) and the Liffey Tolka Greenway (PL29N.312692) resulted in the loss of two potential holt locations previously located on the northern shoreline of the Port Estate (approximately 60m from the 3FM site boundary), as part of preparatory ground works to accommodate sheet piling and revetment replacement activities permitted under the above mentioned planning permissions.

Dublin Port Company engaged with NPWS and provided two artificial holts at the location of the two former potential Holts 1 & 2 in June 2026 in consultation with NPWS. To date, there has been no evidence of otter occupancy, however this is not unusual given the relatively short time since they were constructed.



Plate 9 showing one of two artificial otter holts constructed at the general location of former Holts 1 & 2

3.5.1.2 Potential Holt 3

In it's August 2026 request for Further Information, ACP has observed (at Item 3) that in the Applicant's Technical Note 1 (February 2025), a potential otter holt (no.3) is located beneath the Sea Safari Tours Ltd. shipping containers within the area of Poolbeg marina along the south quays. To assist ACP in its planning determination of the significant environmental effects of proposed 3FM Project on otters as required under EIA requirements, two trail cameras were deployed on the 19th of August within the Yacht club at Poolbeg Harbour. A total of 38 nights of footage has been reviewed as of the 25th of September.

No evidence of otter activity has been recorded to date.

Fox, cats, rats and dog was recorded occasionally passing by the cameras, however they never entered under the shipping container or seen to emerge from beneath it. High levels of human activity were recorded (captured from the waist down), as might be anticipated at a boat yard, on almost every day, typically from Sea Safari Boat Tour Staff and boat owners.



Plate 10 showing locations of gaps under shipping container structure (Anecdotal Holt 3)



Plate 11 showing location immediately around shipping container structure (Anecdotal Holt 3)



Plate 12 showing an example of under shipping container structure (Anecdotal Holt 3) – Image taken upon review of trail camera footage to ensure that no otters were present.

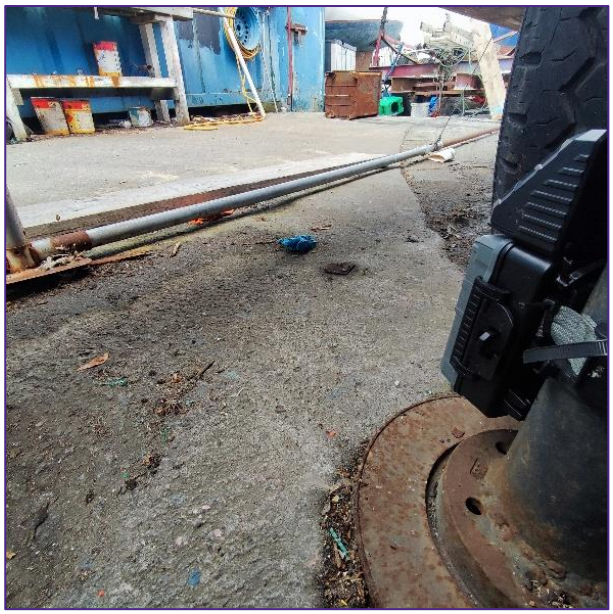


Plate 13 showing one of the trail camera locations on temporary scaffolding, set back from shipping container.



Plate 14 showing one of the trail camera locations on temporary scaffolding, set back from shipping container.



Plate 15 showing examples of recorded images of animal activity at Anecdotal Holt 3.

3.5.1.3 Anecdotal Holts 4 & 5

No evidence of otter was recorded at either of these anecdotal holts.

4 DISCUSSION & ANALYSIS OF RESULTS

4.1 (2024/2025)

There were no new otter holts or couches recorded within the site of the 3FM Project or within 150 m of the red line boundary since the original surveys in 2022-2023.

There was evidence of otter at two locations:

- Fresh sprainting at the known holt at Masterplan Plot C (Terminal 5) at the Alexander Road extension on the northern port lands
- Single spraint at the corner of the proposed 3FM Project Turning Circle

In addition, as recently as 06 February 2025, Tetra Tech were informed of an otter sighting at a former 'inactive' holt (Holt 3).

In coastal areas, otters usually alternate between marine and freshwater habitats (Kruuk, H 1995). They also require sources of freshwater to wash saltwater off their coats prior to resting in their coastal holts. Otters must keep their fur in good condition. It has been shown that seawater reduces the waterproofing properties of otter fur and this is why freshwater sources are so important for otters living on the coast. If they are unable to wash in freshwater, salt crystals begin to form in the fur and the guard hairs clump together, reducing insulating properties (Chanin, 2003). Their coastal territories will always include a stream or spring within close proximity to their holts with accessibility over land (NPWS, 2025). In the Shetland Islands, coastal otter holts were never found further than 700m over land from freshwater sources.

The River Dodder/Grand Canal is the nearest freshwater source to potential Holt 3. The freshwater source is approximately 900 m from the potential holt located under the Sea Safari's Tours Ltd shipping container offices. The River Tolka is the nearest freshwater source to potential Holts 1 and 2, with an approximate separation distance of 3 km. These sources of freshwater are not realistically connected to these potential holt locations over land, and therefore it is considered that due to the requirements of otter to wash salt from their fur before sleeping in holts, these potential holts are likely to act as short-term resting holts or couches only. They are not suitable for breeding or natal purposes.

The Dublin Otter Survey (Macklin *et al*. 2019) surveyed 15 rivers around Dublin and found the highest frequency of otter signs (per km) in the River Dodder, including six holts, the nearest holt being located ~ 3.4 km upstream from the proposed 3FM Project boundary. It is considered that it is highly likely that any otters frequenting the water within the proposed development area are based in holts located within freshwater rivers such as the Dodder and Tolka, and potentially further upstream in the Liffey in a less saline environment.

Otters will rest under structures at sites in proximity to high levels of human activity. According to Chanin (2003), otters have been found to be flexible in their use of resting sites and do not necessarily avoid 'disturbance' in terms of noise or proximity to human activity. Typically, these resting sites are in places where the risk of direct physical disturbance is low (Chanin, 2003). The areas along the Dublin Port Estate coastal boundaries and berms are typically busy locations, likely with too much human/industrial activity for long-term otter holting. The waterside environment along most of the proposed 3FM Project development area on the lower Liffey is comprised of vertical wall, mainly constructed from stone or concrete. There were very limited crevices or cavities on these vertical structures which would be of suitable size to allow an otter to enter and use as a resting place, even as an above ground couch. All cavities were shallow and located below the highwater mark and therefore would be inundated with water for periods of the day, and therefore not suitable for otter holting.

However, despite the industrialised nature of the Dublin Port Estate and Poolbeg peninsula and its associated prevalence of human/industrial activity, otters continue to frequent the area and are seemingly well adapted. However, some locations may be sufficiently removed from port activity (at times) and may provide opportunistic above ground resting locations (couches).

Stakeholder observations appear to demonstrate this. Resting places are in busy locations but safely enclosed and near the river. There are also examples of temporary materials and stored items that could provide temporary resting opportunities like those at 3FM Project Turning Circle.

Tidal activity relative to daylight disturbance appears to be a factor determining foraging activity. For example, otters have been seen to forage at low tide where the River Dodder meets the River Liffey (Plate 16 below). This activity though is restricted to early morning or later evening when there is least human activity.

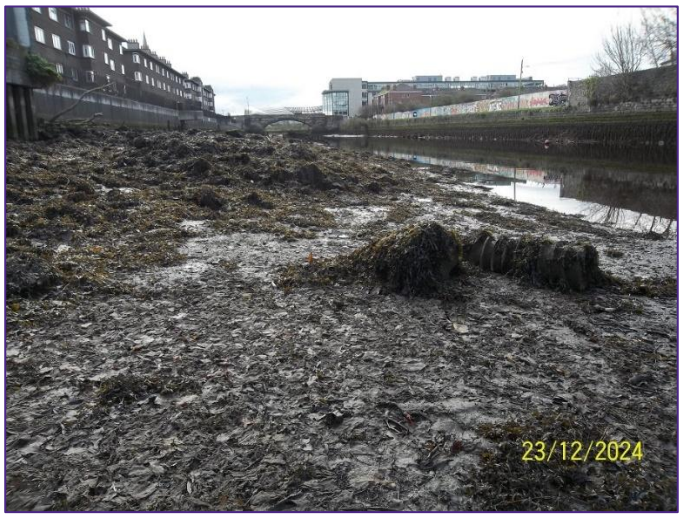


Plate 16 looking south up the River Dodder to the Ringsend Bridge.



Plate 17 stored and stacked heavy materials at the 3FM Project Turning Circle demonstrating the abundance of built and temporary features in which otters could shelter.

4.2 2026

No field evidence of otter activity was recorded during the 2026 surveys. This is not considered indicative of otter absence; rather, it is consistent with previous assessments indicating that otter activity is relatively low within the lower Liffey/Dublin Port area. Otter Surveys carried out for Dublin City Council's Dublin City Otter Survey, 'An Action of the Dublin City Biodiversity Action Plan 2015-2020' covered habitats along 44.7km of the Dublin City coastline, including Dublin Port (Macklin *et al*., 2019). The port area was typified by low levels of otter seclusion due to high levels of human activity. The low frequency of otter signs in the port and surrounding coastal habitats ranked near the bottom of areas surveyed for otter signs/activity.

Otter has previously been seen to seek shelter under the offices of Sea Safari Tours Ltd at Poolbeg Marina, referred to in this report as (potential) Holt 3 (Figure 2.0 & 2.1). The stakeholder confirmed that this activity ceased until very recently and speculated that otters left this location due increasing numbers of fox *Vulpes vulpes*. However, on the 6th February 2025, the stakeholder contacted Tetra Tech to confirm a single otter was observed going under the offices of Sea Safari Tours Ltd. In 2026, the same stakeholder confirmed that they had not observed otter at this location since the last sighting in 2025. They stated that cats were regularly observed under the shipping container structure and that fox was observed on occasions.

Two infrared, motion-activated, low-glow trail cameras were secured to temporary scaffolding poles associated with boat-repair works within the yard. The cameras were positioned approximately 5 m from the gaps beneath the shipping-container structure. Their deployment was considered non-intrusive, particularly given the high levels of existing human and industrial activity within the yard. No evidence of otter activity was recorded during 38 nights of monitoring.

The gap beneath the Sea Safari office shipping container could provide a potential temporary, covered resting place for otter, sometimes referred to as a *hover*. However, in the absence of evidence indicating prolonged or repeated use, the feature is not considered to constitute a confirmed holt, defined as an enclosed or underground resting or breeding site, or a couch, defined as an above-ground resting place.

It is possible that historical anecdotal reports of otters beneath the Sea Safari office shipping-container structure relate to brief or sporadic use of the gap as a temporary covered resting place, rather than its use as an established holt or couch.

The proposed removal of the shipping container would therefore result in the loss of a potential, albeit unconfirmed and apparently inactive, temporary otter resting resource. Nevertheless, given the absence of recorded otter activity during the monitoring period, the lack of evidence for prolonged or repeated use, and the availability of alternative resting opportunities within the wider area (suitable habitat within the local otter territories, namely along the River Dodder and Tolka River), the removal is not anticipated to result in a significant adverse effect on the local otter population. The impact is considered to represent a minor loss of potential resting habitat rather than the loss of a confirmed holt or couch. To compensate for the loss of this inactive temporary covered otter resting place, a new artificial otter holt is proposed adjacent to the Tom Clarke Bridge. Further details are provided in Appendix B: Outline Otter Conservation Management Plan.

Noise propagation and underwater sound exposure associated with the 3FM Project were modelled for short- and long-duration operational scenarios, including impact piling, dredging, sheet piling and vessel activity. Temporary Threshold Shift (TTS) is a reversible reduction in hearing sensitivity following exposure to elevated underwater noise, whereas Permanent Threshold Shift (PTS) is an irreversible reduction in hearing sensitivity resulting from acoustic exposure.

Otters, classified in Chapter 12 of the EIAR as other marine carnivores in water (OCW), are considered less sensitive to underwater noise than true marine mammals because their auditory systems are primarily adapted to airborne sound. Otters are expected to frequent the areas subject to noise-generating activities only intermittently, with most activity occurring within connected river systems. The modelled TTS and PTS risk ranges indicate that otters are unlikely to exceed either threshold, except where an individual remains stationary in very close proximity to piling activities for an extended period. At the two most otter sensitive locations assessed, SPAR Bridge (in proximity to the mouth of the River Dodder where otter has been observed occasionally – stakeholder observation) and Area N (nearest to the two new artificial otter holts at

the location of former Otter Holt 1 & 2), the modelled risk contours (TTS & PTS) did not extend into key otter habitat or the recently constructed artificial holts.

With the implementation of mitigation measures, including seasonal piling restrictions, Marine Mammal Observer monitoring incorporating otter observations, and adherence to the Dredging Management Plan, significant adverse effects from underwater noise are considered unlikely.

Further details of the mitigation measures are provided in Appendix B: Outline Otter Conservation Management Plan.

5 MITIGATION MEASURES

5.1 Otter Mitigation and Compensatory Measures

Details of otter mitigation can be found in an outline Otter Conservation Plan in **Error! Reference source not found.**.

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FIGURES

Figure 1.0 Site Location
Figure 2.1 Otter Survey Results (2025)
Figure 2.2 Otter Survey Results (2026)

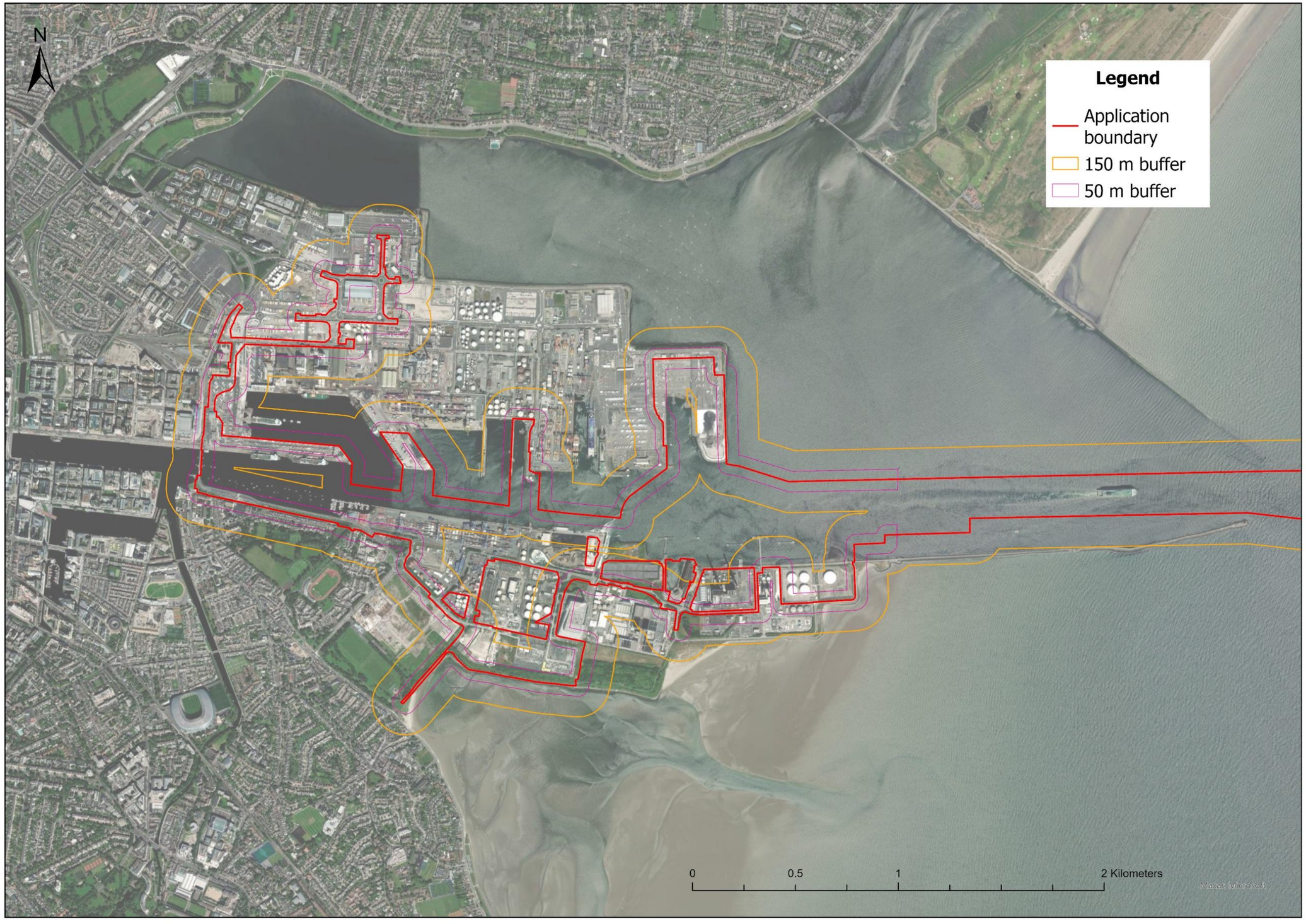


Figure 1.0 Site Location



Figure 2.1 Otter Survey Results (2025 Report)

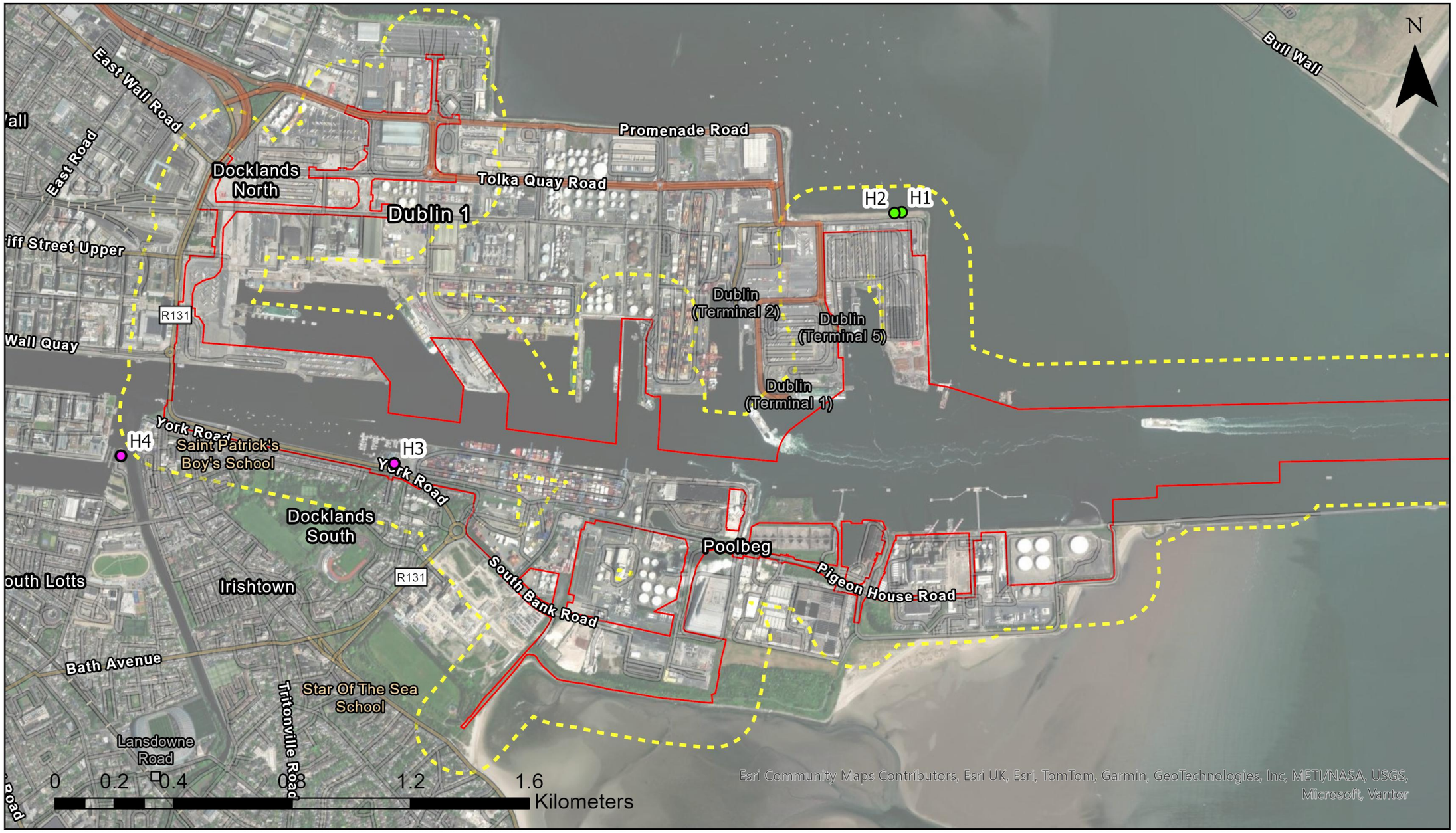


Figure 2.2 Otter Survey Results (2026)

Appendix B
Outline Otter Conservation Plan