

PROJECT

SOBR1 SUBSEA FIBRE OPTIC CABLE

SCOPE

Underwater Archaeological Impact Assessment (UAIA)

CLIENT

McMahon Design & Management Ltd.

PREPARED BY

██████████ and ██████████

DATE

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1. Introduction

1.1 General

This report relays the results of an Underwater Archaeological Impact Assessment (UAIA) of a proposed subsea telecoms cable system, SOBR1, linking Ireland to the United Kingdom. The cable will connect from a landfall on Dublin Bay to a landfall at Anglesey on the North West coast of Wales. The UAIA covers the section of cable within Irish territorial waters and the landfall on Dublin Bay.

1.2 Conventions, legislations, and guidelines

The assessment was undertaken with due regard to the following national and international protective conventions, guidelines, and legislation:

- National Monument Act, 1930, amended 1954, 1987, 1994, and 2004
- Heritage Act, 1995
- National Cultural Institutions Act, 1997
- The Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous) Provisions Act, 1999
- *Frameworks and Principles for the Protection of the Archaeological Heritage*, 1999, Department of Arts, Heritage, Gaeltacht and the Islands
- Local Government (Planning and Development) Act, 2000
- European Convention on the Protection of the Archaeological Heritage (the ‘Valletta Convention’) ratified by Ireland in 1997
- Council of Europe Convention on the Protection of Architectural Heritage of Europe (the ‘Grenada Convention’) ratified by Ireland in 1997
- International Council on Monuments and Sites (ICOMOS), advisory body to UNESCO concerning protection of sites and recommendation of World Heritage sites ratified by Ireland in 1992

2. Location

The survey corridor for the SOBR1 Subsea Fibre Optic Cable is located off the coast of Dublin in the Irish Sea. This corridor has a length of 52.9km running roughly east between landfall at Dublin Port and the Irish 12nm limit. The corridor extends another c.62.77km roughly east from the 12nm limit and the Irish Exclusive Economic Zone (EEZ). Two route options are proposed and both will be surveyed.

The route of the survey area runs east from Dublin Port through Dublin Harbour, staying north of the Dublin Port navigation channel. It then turns northeast at Howth before returning to a more easterly course when level to the Nose of Howth. The southern route option turns northeast c. 5km west of the 12nm limit only to return to an eastern route almost immediately until it turns south-southeast after c. 20km. It remains on this more southerly trajectory until the Irish EEZ. The northern route option turns northeast c. 12km west of the 12nm limit and takes an east-northeast route starting c. 5km west of the 12nm limit for c. 17km. It then turns south-southeast for c. 10km, turns back south-southwest for c. 10km to reconnect with the southern route option c. 5km west of the EEZ.

Dublin Port is generally reclaimed land in an area of dark limestone and shale bedrock geology (www.gsi.ie). Dublin Bay in which Dublin Port is located, is a C-shaped inlet. It measures c. 10km wide from the southern coast of Howth in the north to Sorrento Point, Dalkey in the south. From Clontarf strand, the bay measures c. 12km to Baily Lighthouse on the southeastern part of Howth Head. The Bay has a maintained depth of 7.8m. The Bay is a UNESCO Biosphere Reserve due to its biological diversity and its dune systems and salt marshes which display all stages of ecological development.

The Irish Sea measures in total c. 210km long and c. 240km wide and separates Ireland from Great Britain. The strongest surface tidal currents are found in St George's Channel to the south. Currents are weakest in the west-central area. Dublin Port is the largest Irish trading port along the Irish Sea and many surrounding ports in Dublin Bay are important fishing ports for Ireland (Britannica).

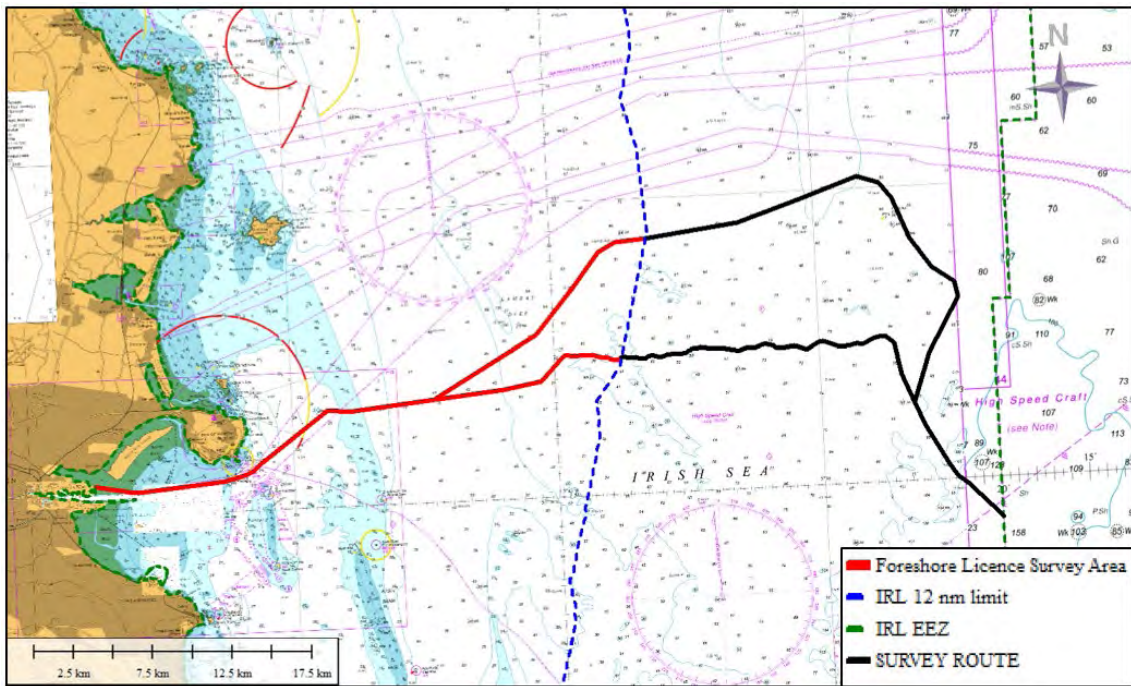


Figure 1: Indicative cable route from landfall at Dublin Port to the EEZ with two route options.

Table 1: Co-ordinates of proposed cable route.

Pos. No.	Latitude	Longitude	Pos. No.	Latitude	Longitude
1	53° 21' 05.2301" N	6° 02' 39.0289" W	21	53° 28' 46.0524" N	5° 39' 30.9626" W
2	53° 21' 29.4000" N	6° 01' 39.0615" W	22	53° 28' 39.5522" N	5° 41' 22.5631" W
3	53° 23' 09.3545" N	5° 57' 55.6320" W	23	53° 28' 19.5456" N	5° 42' 26.8873" W
4	53° 23' 04.4012" N	5° 56' 45.6840" W	24	53° 25' 38.5097" N	5° 46' 08.0235" W
5	53° 23' 35.0582" N	5° 47' 55.8364" W	25	53° 23' 37.7738" N	5° 51' 59.4475" W
6	53° 23' 49.4643" N	5° 45' 43.0737" W	26	53° 23' 20.6682" N	5° 56' 45.4049" W
7	53° 24' 31.0031" N	5° 43' 43.7931" W	27	53° 23' 26.1744" N	5° 58' 03.1781" W
8	53° 24' 38.5283" N	5° 42' 39.4360" W	28	53° 21' 42.0009" N	6° 01' 56.0375" W
9	53° 24' 19.5930" N	5° 41' 21.6008" W	29	53° 21' 20.3847" N	6° 02' 48.6845" W
10	53° 24' 48.7039" N	5° 41' 09.5135" W	30	53° 21' 08.4176" N	6° 04' 00.5093" W
11	53° 24' 54.6023" N	5° 41' 07.0889" W	31	53° 20' 52.5179" N	6° 09' 04.2852" W
12	53° 25' 06.4398" N	5° 43' 08.3115" W	32	53° 21' 01.7412" N	6° 11' 19.8820" W
13	53° 25' 03.0135" N	5° 44' 26.9450" W	33	53° 21' 01.4990" N	6° 11' 19.6143" W
14	53° 24' 04.6942" N	5° 45' 54.2149" W	34	53° 21' 01.1474" N	6° 11' 19.5112" W
15	53° 23' 51.0929" N	5° 47' 59.5527" W	35	53° 21' 00.8550" N	6° 11' 19.5015" W
16	53° 23' 40.8774" N	5° 50' 56.1146" W	36	53° 20' 57.1590" N	6° 11' 20.1502" W
17	53° 25' 25.1769" N	5° 45' 52.5195" W	37	53° 20' 44.3197" N	6° 09' 04.7864" W
18	53° 27' 49.6174" N	5° 42' 12.8784" W	38	53° 20' 52.4174" N	6° 03' 55.9758" W
19	53° 28' 08.7776" N	5° 41' 39.0992" W	39	53° 21' 05.2301" N	6° 02' 39.0289" W
20	53° 28' 14.6196" N	5° 39' 44.0145" W			

3. Scope of works

It is planned to construct a subsea telecoms cable system, SOBR1, linking Ireland to the United Kingdom. The SOBR1 has a planned landfall in Dublin Bay on the east coast of Ireland. As well as Ireland, the planned cable route has a landfall in Wales across the Irish Sea (Figure 2). The UAIA is focused on the extent of the cable route within Irish territorial waters. This includes a survey corridor measuring c. 116km in length. A width of c. 500m will be surveyed around the suggested cable route. Along with the UAIA, remote sensing seabed mapping (geophysical survey) and selective sampling of the upper layers of the seabed (geotechnical survey) are planned. These three assessments will inform the final Route Position List (RPL). The UAIA includes investigation of potential impacts at the proposed landfall site in Dublin Port, the proposed routes within the Irish inshore, and the proposed routes offshore.

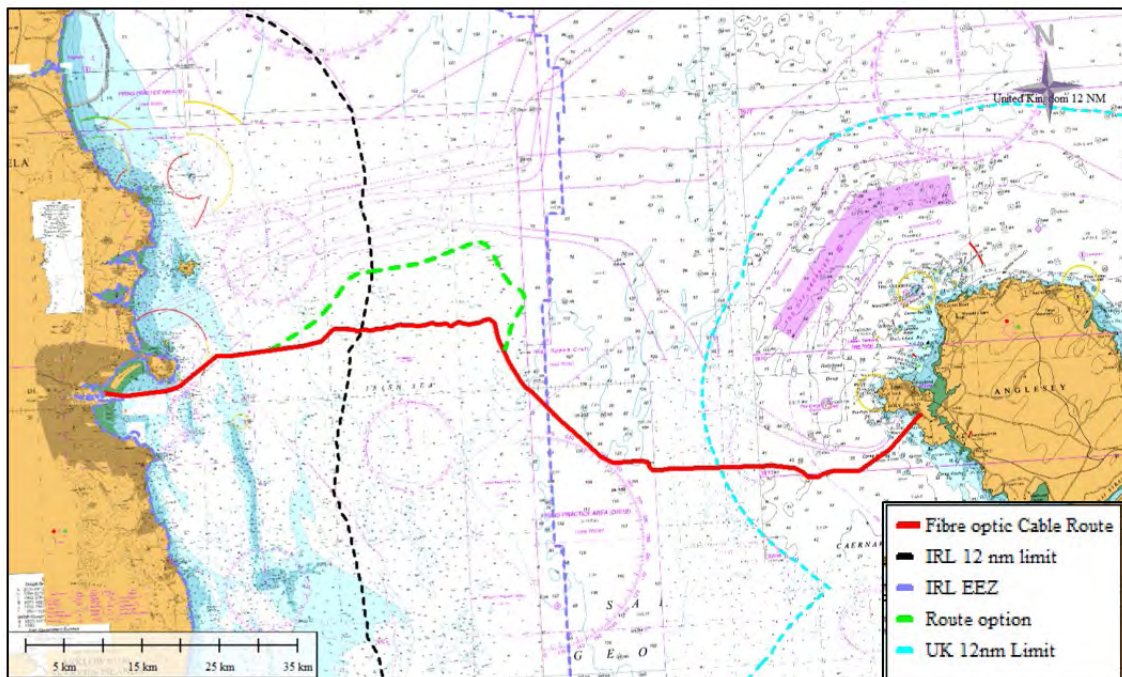


Figure 2: Proposed SOBR1 Telecoms Cable System between Ireland and Wales.

3.1 Landfall

A potential landfall is planned at the eastern boundary land of Dublin Port, adjacent to the Alexandra Road Extension and north of the Unified Ferry Terminal Area (T5). No land vehicles will be needed for the survey work and, instead, a shallow draft vessel will be utilised as proposed by *McMahon Design & Management Ltd.* Due to the nature of this location on reclaimed land, the likelihood of encountering terrestrial archaeological remains are greatly reduced.

The proposed survey will utilise remote sensing in the area between the landfall and the low water mark. The use of remote sensing rather than typical topographical survey techniques is due to the area under investigation being made up of mudflats. Bar probes will also be used to establish the depth and nature of the sediment at the landfall. It is estimated 8–10 probes at 50m spacing would cover the intertidal zone and another 8–10 probes at 50m spacing would be used to investigate from the low water line to 3m water depth contour. The probes will reach a maximum depth of 2m.

3.2 Inshore cable route

The area extending east from the low water mark at the landfall of Dublin Port and inshore of the safe working draft limits of the primary vessel utilised during this project will be surveyed for the purpose of planning the RPL using a smaller craft or an Unmanned Survey Vessel (USV). The survey will include the use of Multibeam Echosounder (MBES), sidescan sonar, marine magnetometer and sub-bottom profile equipment. This survey would aid in identifying shallow goehazards as well as man-made hazards such as wrecks and other archaeological remains. They will also allow identification of magnetic anomalies within the upper 3m of seabed, which may give further insights into any buried archaeological remains. A minimum of seven survey lines will be required for the area. The depth range of these surveys is 3m–15m. Further data reconnaissance outside of the planned survey lines and tie-lines of the survey corridor may be required in order to better understand the seabed.

3.3 Offshore cable route

The area extending east from the outer limits of the inshore survey to the 12nm limit line will be surveyed by the primary vessel using Multibeam Echosounder (MBES), sidescan sonar, marine magnetometer, and sub-bottom profiler equipment. This will allow the creation of a continuous bathymetric overview of the area along with side scan sonar imagery and sub-bottom traces. The preliminary route and all wing lines will be covered using a minimum of five survey lines. The depth range of these surveys is >15m. An underwater video camera survey may also be utilised which would be later georeferenced in GIS. This would allow further inspection of obstructions, benthic habitats, and marine archaeology.

Seabed sampling will also take place within the 12nm limit. These will include up to 10 cone penetration tests (CPTs), up to 8 gravity cores/ vibrocores, and up to 10 grab samples. These

samples will focus on the upper 3m of sediment to allow better understanding of the physical properties of the superficial seabed sediments along the proposed cable route. The final locations of these samples will be determined after the geophysical survey and archaeological features identified in this UAIA will be avoided along with any sensitive habitats.

4. Archaeological methodology

A detailed desktop study was undertaken to ensure all available literature and background information was considered to inform the underwater archaeological potential of the cable route within Ireland's territorial waters, up to and including the high-water mark/foreshore. Where applicable, wreck data beyond the 12nm limit was also considered and included to inform the cable route survey and potential later installation. The following sources were consulted as part of the desktop survey:

- The Record of Monuments and Places (RMP) compiled by the Archaeological Survey of Ireland comprises lists, classifications of monuments and maps of all recorded monuments with known locations and zones of archaeological significance. The monument records are accessible online from the National Monuments Service (NMS) of the Department of Housing, Local Government and Heritage at www.archaeology.ie. These were used to establish the wider archaeological context of the site.
- Ordnance Survey of Ireland (OSI) historic and contemporary maps were examined to measure the changing landscape.
- The Register of Protected Structures (RPS) is a list of all protected buildings in a given area, as designated by the Local Authority. This may be due to a structure's architectural, historical, archaeological, artistic, cultural, social, scientific, technical, or industrial importance.
- The Excavations Bulletin online database, known as the Database of Irish Excavation Reports (www.excavation.ie) was consulted to review archaeological investigations done previously in the area.
- The Wreck Inventory of Ireland Database (WIID) and the Wreck Viewer include a broad range of cartographic, archaeological, and documentary sources concerning wreck data. Each entry in the inventory gives information on the ship's name, type of vessel, port of origin, owner's name, cargo, date of loss, and other relevant information where available. While the WIID contains information on approximately 18,000 shipwreck

records (both those with known and unknown locations), the Wreck Viewer contains the same information for those wrecks but only those with known locations.

- The Inventory of Piers and Harbours is an unpublished draft document by the DHLGH which has drawn primarily from information contained in the Office of Public Works' (OPW) own documents reporting on works to piers and harbours from the 18th–mid 20th century. It draws on a select few other historical sources that deal with historical piers and harbour development in Ireland.
- National Museum of Ireland Topographical Files hold details of any artefactual material recovered in Ireland from the 18th century to the present. These are categorised according to County and Townland.
- Cartography: Several historic maps and charts were examined (see references below for a full list). These maps provide insight into the changes to the coastline over time along with changes in structure locations and navigational routes that may inform ship traffic and ship losses.
- Aerial Photography: A variety of low and high-altitude aerial photography was examined (see references below for a full list).
- Documentary sources: Several historical and archaeological sources were examined (see references below for a full list).

5. Desktop study

5.1 Maritime heritage overview

Until quite recently, the earliest archaeological evidence of human habitation in Ireland dated to the Mesolithic with the earliest site of Mount Sandel, Co. Derry dating to c. 8000 BC (Woodman *et al.* 1999, 131–51). A recent study by Dowd and Carden, however, have identified evidence of man-made cut marks on a bear patella from Gwendoline Cave, Co. Clare which has been dated to c. 10,500 BC during the Palaeolithic period and may push back the date of Irish colonisation some c. 2500 years (Dowd and Carden 2016). Ireland has been separate from Britain and the rest of Europe since the retreat of the last ice sheets c. 16,000 bp. Early colonists, whether Palaeolithic or Mesolithic, would have needed to travel over water routes to reach Ireland. The earliest known evidence of human activity in Dublin are Late Mesolithic fish traps found during an excavation along the North Wall Quay of the River Liffey c. 3.4km west of the proposed cable landfall of this project (Licence No. 03E0654) (McQuade and O'Donnell 2006).

There is no direct evidence for the use of long-range seaworthy vessels in early prehistoric Ireland until the Neolithic period. The introduction of cattle and sheep to Ireland during the

Neolithic (c. 4000–2500 BC) would have again necessitated the use of watercraft and there is evidence of a trade route between Britain and Ireland in the form of artefacts such as stone axes. The earliest boat identified in Ireland and Britain dates to c. 6000 bp from Carrigdirty, Co. Limerick. Many other logboats have been identified in Ireland from the Neolithic, though these are generally found in sheltered waters. One such logboat, however, was identified 1km offshore of Gormanston, Co. Meath during pipeline construction indicating that these vessels were not limited to the shallow, inland waterways (Brady, N. 2021, 509–10; Tunc 2020, 3 and 7; Breen and Forsythe 2004, 33; Lanting 1997, 628).

The Bronze Age (c. 2500–700 BC) saw an increase in trade links from Ireland to Britain and the Continent. Tin, needed for the creation of Bronze and not found in Ireland, was imported from Cornwall or Iberia and the finished products were exported in return. Logboats, similar to those mentioned above, continued to be used in both marine and freshwater contexts. The Iron Age (c. 700 BC–AD 400) saw the continuation and expansion of trade. Documentary evidence suggests the use of skin-covered boats in Ireland and England during this time. Tacitus commented on trade with Ireland in the early 2nd century AD, stating that ‘the interior parts [of Ireland] are little known, but through commercial intercourse and the merchants there is better knowledge of the harbour and approaches’ (from Breen and Forsythe 2004, 39).

Prior to Tacitus, accounts and charts from mariners returning from Ireland were collected by Ptolemy in Alexandria. Ptolemy proceeded to create the earliest known map of Ireland in c. 150 BC (Figure 3). In this map, Ptolemy recorded several tribes, rivers, settlements, and islands. Many attempts to project these landmarks have been made. Recent studies suggest that Ptolemy’s River Oboca is the River Liffey. Eblana may be Loughshinny, Co. Dublin to the north of Dublin City or may be Dublin itself. Ptolemy’s Manapia has also been linked to Dublin; Modonnus and Libnius have been linked to the River Liffey (Abshire *et al.* 2018, 2; Darcy and Flynn 2008, 56–62).



Figure 3: Ptolemy's map of Ireland as depicted on the *Prima Europe Tabula* (Reger 1486 from National Library of Wales).

In the Early Medieval Period (c. AD 400–1169), the Lives of Saints texts make several references to maritime activities. Archaeological remains, such as those found at Church Island and Illaunloughlan, Co. Kerry, suggest that deep sea fishing took place as deep-water species such as cod and wrasse were identified at these sites (Breen and Forsythe 2004, 47). The Vikings began raiding Ireland as early as AD 795, and were establishing permanent bases in Ireland by the mid-9th century. Some of these bases – such as Dublin, Waterford, Wexford, Cork, and Limerick – developed into trading towns by the early 10th century, with the Vikings integrating with the local communities.

Dublin itself, along the River Liffey, was heavily raided in AD 837 as part of a concerted effort by the Vikings to cease control of lands. By AD 841, the Annals of Ulster report a longphort, or Viking stronghold, at Dublin. It is believed that this settlement was located at Kilmainham where a Viking burial complex (e.g. DU018-020272) has been identified (Stout 2017, 139–44). Excavations near Wood Quay, approximately 1.8km downriver of Kilmainham, have revealed extensive evidence of the 10th century Viking settlement of the town (e.g. Viking/Hiberno-Norse Houses: DU018-020931, DU018-020933, DU018-020934, DU018-020938, DU018-020944, DU018-020947, DU018-020948, and DU018-020976). Early ecclesiastical sites were also founded in Dublin including at least three 6th century monasteries (DU014-057001, DU014-066009, and DU018-005001), one 7th century site (DU018-020283), and one 10th century site

(DU018-020270). The former is believed to have been co-founded by Siltric Silkbeard (b. 970–d. 1042), the Hiberno-Norse King of Dublin, and Dúnán (d. 1074), the Bishop of Dublin.

The High Medieval Period (c. AD 1169–1400) began in Ireland with the arrival of the Anglo-Normans. They rapidly took control of Viking centres on the east coast including Carlingford, Wicklow, Arklow, and Dublin (Brady 2008, 30). Dublin was chosen as the capital of Anglo-Norman lordship in Ireland. Trading networks and mercantile activity expanded under their leadership across Europe. This saw merchants from France, Iberia, and Italy trading wine, salt, and luxury goods with Irish merchants in exchange for hides, wool, fish, flax, and furs (Breen and Forsythe 2004, 71). Under Anglo-Norman charters, ports such as Dublin and Drogheda were given extra powers and privileges similar to rights seen in English ports such as Bristol and Chester. The increased prosperity seen in Dublin led to increased population along with rapid changes in the layout of the town. A stone quay was built c. 1300 along the River Liffey and the silting-up of the river allowed for land reclamation and development. Naval battle conflict was also seen to increase with the arrival of Anglo-Norman lords throughout the period including large-scale military activity in the Irish Sea under Edward I and II during their wars with Wales, Scotland, and France. Dublin also became home to many hospices dedicated to St. James for those waiting to cross the sea for the pilgrimage to Compostela (Brady 2008, 30–5).

The High Medieval Period also saw an influx of new religious orders including Augustinians, Cistercians, Franciscans, Dominicans, Carmelites, and Knights Hospitallers. Each of these orders founded religious houses in Dublin including four Augustinian houses (DU018-020044, DU018-020046, DU018-020047, DU018-020051), two Cistercian houses (DU018-020048 and DU018-343–4), one Franciscan house (DU018-020045), one Dominican house (DU018-020050), one Knights Hospitallers house (DU018-020286), and one Carmelite house (DU018-020049). The first of these to be founded was the Augustinian Priory of All Saints (DU018-020044), which was established by Diarmuid Mac Murchada, the Gaelic King of Leinster in c. 1166, though it was not granted lands until c. 1234–44. Castles are also seen for the first time in Ireland with the building of Dublin Castle (DU018-020488) commencing in 1204 to defend the city. This castle expanded upon an earlier masonry motte (DU018-020710) which may date to before 1173.

The Late Medieval Period (c. AD 1400–1550) was a time of varied fortune for Irish ports. There was an intensification of Irish contributions to the fishing industry during this time. Herring fishing was concentrated in Dublin, Malahide, Howth, and Rush and other fish such as salmon and eel were important in the areas. This period also saw the manufacture of Irish linen for export to Europe. Unfortunately, by the end of the 14th century, the sandbar at the mouth of

Dublin Bay and the silting in of the waters barred fully laden ships from entering into Dublin Port. They instead had to anchor at Dalkey to unload at least in part in order to continue on to Dublin. An increase in piracy around the Irish waters and elsewhere in Europe was also a feature of the Late Medieval Period. These pirates included sailors from Brittany, Spain, France, Scotland, and Ireland itself. In the 16th century, a court of admiralty was set up in Dublin to better control shipping (Brady 2008, 35–7).

The Irish economy was largely controlled by England during the Post Medieval Period (c. AD 1550–1750). The prominent exports became cattle, butter, and wool. Intensification of the fishing industry along with transatlantic travelling and a growth in local and international trade saw an increase in maritime activity in Irish waters until the 17th century (Kelleher *et al.* 2012, 21). Dublin itself was the centre of this booming maritime industry as the primary port for trade of raw materials for brewing, glass, sugar, and salt industries and for the silk and woollen industry. Unfortunately, acts were put in place after the rebellions from 1641–53 which restricted Irish trade including the Cattle Act of 1666, which prohibited the export of cattle from Ireland to England, and the Navigation Act of 1671, which prohibited direct trade between Ireland and English colonies. The naval power based in Ireland also increased under the Tudors in the early Post Medieval Period and during the Jacobite Wars at the end of the 17th century. Throughout the period, Dublin remains one of the most dangerous ports to navigate in Northern Europe. This fact eventually led to the granting of a patent in the 1660s for six lighthouses around the port area (e.g. DU016-003004) (Brady 2008, 38–40).



Figure 4: 1670 Down Survey mapping of Dublin Harbour showing the prominent sandbar at its mouth.

Modern Ireland (post c. AD 1750) saw the first systematic recording of ship losses along the Irish coast in 1750. This was beneficial as attacks by numerous privateers from France, Spain, the Netherlands, America, and England in Irish waters took place in the late 18th century. These attacks and the Napoleonic Wars of the early 19th century emphasized the importance of Ireland as a strategic base of operations for English authorities (Kelleher *et al.* 2012, 21). The English also sought to put an end to the smuggling activity, which arose along the Irish coast after the Napoleonic War (Breen and Forsythe 2004, 125). During the Napoleonic Wars, coastal defensive towers, known as Martello towers, were built along the Irish coast as part of an anti-invasion initiative within English occupied territories. Eight of these towers (DU019-018, DU023-002, DU023-010, DU023-017, DU023-019, DU023-022, DU023-029009, and DU023-052003) are recorded along the southern coast of Dublin Bay between Sandymount and Dalkey Island. Another tower (DU019-005) is found on the southwest coast of Howth on the north side of the Bay.



Figure 5: A Map of County Dublin Divided in Barony's Reduced from an Actual Survey in Four Sheets by John Rocque (1799) (National Gallery of Ireland).

The 19th century also saw developments in steam-powered navigation, which was closely linked with the large-scale emigration sparked by the Great Famine (1845–52). This emigration led to the development of new routes across the Irish Sea. Because of these routes being added to established trade routes and naval patrols, the Irish Sea became one of the busiest waterways in the World (Pearsall 1990, 845). Dublin was again at the centre of much of this activity as it was the largest ship-owning port in Ireland and even ships registered in Liverpool were often owned by merchants in Dublin. The increase in activity around the port of Dublin in the 17th and 18th centuries saw a Ballast Office set up to dredge the River Liffey in 1707. This was after numerous reports of dangerously low tides from 0.9m to 2m between 1649 to 1673. This office, later converted into the new Port Authority, also undertook improvements of the harbour including: the straightening of the Liffey between Ringsend and the city, the building of the Great South Wall from Ringsend to Poolbeg lighthouse, the development of John Rogerson's Quay and the North and East Quay, and the creation of a dock system which enabled ships to remain afloat regardless of the tide (Bray 2008, 41–3).

The increase in maritime activity in the Irish Sea and elsewhere along the Irish coast also saw an increase in wrecks during the 19th century. An estimated 60% of all wrecks in Irish waters date

to this century with an average of one wreck reported every three days from the mid-19th century until the outbreak of World War I (Kelleher *et al.* 2012, 23).

During World War I, German submarines frequently entered Irish waters to the north and south of the island which brought about another increase in ship losses including military, civilian, and merchant vessels. Over 1000 ships were lost as a direct result of the First Battle of the Atlantic. (Brady, K. 2021, 515–8; Kelleher *et al.* 2012, 44; Brady 2008, 47). The City of Dublin Company's main packet ship, *Leinster* (W02039), was sunk by the *UB-123* submarine in 1918 in the Irish Sea near Kish Bank. Over 500 passengers and crew were lost in this event. The *RMS Lusitania* is perhaps the most famous loss off the coast of Ireland caused by German submarines. The ship was attacked off the southwest coast in May 1915 resulting in the death of 1201 passengers and crew, including three German stowaways. This was one of the events which led to America entering the War (Moore *et al.* 2019; Brady 2008, 47).

Specific to the landing location and marine area in general regarding the survey route and proposed cable installation, the recorded wrecks and recorded onshore monuments for Dublin Harbour attest to a long history of human activity utilising the port area. Three monasteries founded in the 6th century are some of the earliest evidence of activity known in Dublin and intensification of maritime activity was seen from the 8th century onward with Viking raids and settlements. Such activity has the potential to retain significant archaeological remains in the form of structures, artefacts, and other maritime infrastructure in the study area. The known sites, both wrecks and archaeological sites onshore are described below.

5.2 Recorded monuments and protected structures

Sources for both RMPs and RPS sites were reviewed for the area immediate to the coastal and offshore areas within the track of the proposed cable route. This covered the coastlines of south and east Howth, south and east North Bull Island, south Dublin North City at Clontarf (River Tolka), and north Dublin South City and Ringsend (River Liffey). Along this c. 26km line of coast, 14 recorded monuments (RMPs) and 2 other sites on the Sites and Monuments Record (SMR) were identified. The RPS for Dublin City and Fingal County Council listed 83 total protected structures along this c. 26km line of coast.

The only potential prehistoric evidence on this coastline is a promontory fort (DU016-003001) which are often considered Iron Age in date based on similar monuments in other locations such as Scotland. This promontory fort is slightly inland of a cashel and may relate to this Early Medieval monument instead. This cashel (DU016-003002), or stone built ringfort, was removed

prior to the building of the Baily Lighthouse in 1814. The Battle of Clontarf in AD 1014 is given an indicative battlefield (DU019-020) location along the coastline considered. The sea is referenced in contemporary reports of the battle. The only possible Late Medieval evidence along the coast is the unclassified castle on the west side of Howth Head. This castle was demolished prior to 1937 and its construction date is unclear. The remaining 12 SMRs are Post Medieval and Early Modern in date (see Appendix 1 for a full list).

Many of the SMRs reflect the maritime heritage of Dublin Bay. Two quays (DU018-020201 and DU018-020564) and a sea wall (DU019-029002) of 18th century date are listed monuments. The militaristic heritage of the port is also evident including the location of the Battle of Clontarf (DU019-020), a Royal Navy signal tower (DU019-038001), two batteries (DU019-027 and DU019-028), and a Martello tower (DU019-005).

The paucity of sites directly adjacent to the proposed landfall is reflective of the modern reclamation of the area (see 5.5 Cartographic information for more). The sites to the south of the landfall and east of Ringsend are all 18th century monuments, again, reflecting more recently developments on reclaimed areas of the harbour. Older monuments are recorded further inland and on the northside of the harbour as these areas have not been altered as much as the port itself.

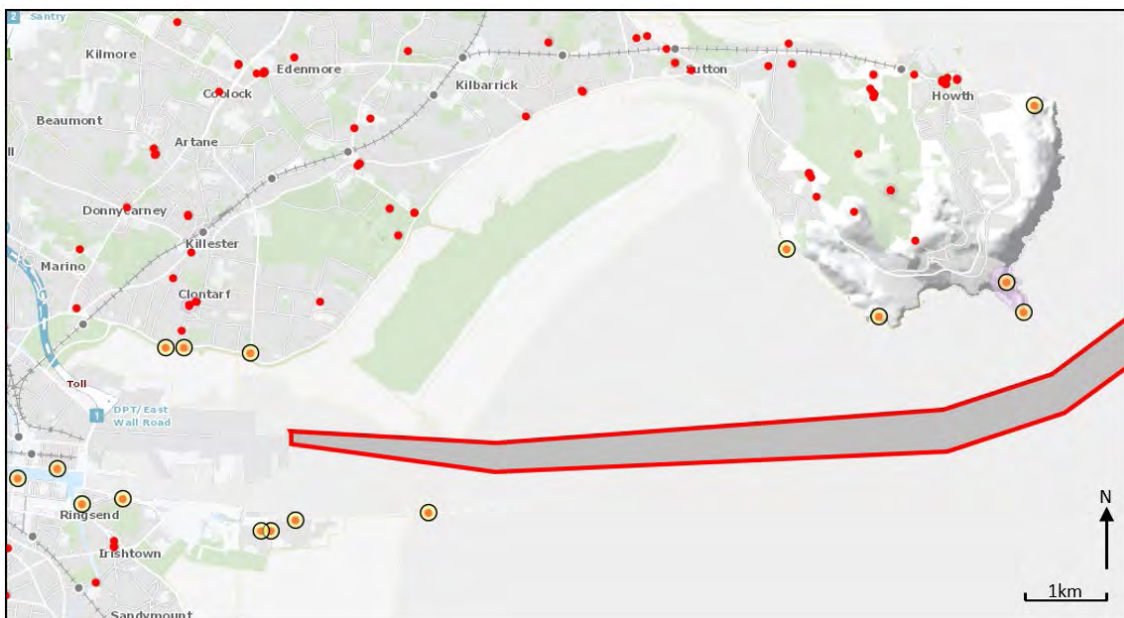


Figure 6: SMR sites along the coastline closest to the proposed survey corridor.

5.3 Place names and Townlands

Ireland is known for its defining place names cities and towns to villages, roads, fields, bays, inlets, streams, and even rocks. Townlands in particular may hold important historical information. These areas are the smallest unit of official land division in Ireland and are thought to preserve some pre-Anglo Norman Conquest territorial boundaries and names. The Irish roots of these names may refer to natural or cultural features of the landscape. The layout and nomenclature of the townlands were recorded and standardised by the Ordnance Survey in the 19th century. *Logainm* holds an online database of Irish placenames, their meaning, and related historical references. Other sources may also be used to track place names such as oral traditions, historic sources (e.g. 19th century or earlier charts), and documentary sources (e.g. the School's Folklore Collections).

Table 2 below provides a list of townlands within the desktop study area. As the cable route is offshore, with a single shore landing on modern reclaimed land, there are no townlands that cross the route, but those that include the shorelines adjacent on either side are included. Many of the townlands in the area are named for natural features such as islands, meadows, and beaches. There are, however, references to a fort and churches. Several places within the study area do not have townland divisions as they are recently reclaimed land. This includes the area east of Ringsend, the park south of Clontarf East, and the modern day Dublin Port itself, where the cable is proposed to make landfall.

Table 2: Townland name list with translations from www.logainm.ie and supporting translational information marked with an asterisk from www.teanglann.ie.

Townland	Barony	Irish	Translations
Ringsend	Dublin	An Rinn	<i>Rinn</i> : point, headland
South Wall Intake	-	-	-
Ballybough	Coolock	An Baile Bocht	<i>Baile</i> : townland, town, homestead <i>Bocht</i> : poor*
Clontarf West	Coolock	Cluain Tarbh Thiar	<i>Cluain</i> : meadow, pasture <i>Tarbh</i> : bull* <i>Thiar</i> : west*
Killester South	Coolock	Cill Easra Theas	<i>Cill</i> : church <i>Theas</i> : south*
Clontarf East	Coolock	Cluain Tarbh Thoir	<i>Cluain</i> : meadow, pasture <i>Tarbh</i> : bull* <i>Thoir</i> : east*
Greenlanes	Coolock	An Lána Glas	<i>Lána</i> : lane, narrow street* <i>Glas</i> : green, grey
North Bull Island	Coolock	Oileán an Bhulla	<i>Oileán</i> : island <i>Bulla</i> : buoy, bull*

Sutton North	Coolock	Cill Fhionntain Thuaidh	<i>Cill</i> : church <i>Thuaidh</i> : north*
Sutton South	Coolock	Cill Fhionntain Theas	<i>Cill</i> : church <i>Theas</i> : south*
Censure	Coolock	Seinséar	'A third class of tenants, Censarii, with cottages... Revised Medieval Latin Word List' (Nóta eolais)
Howth	Coolock	Binn Éadair	<i>Binn</i> : peak, cliff

5.4 Topographical files of the NMI

The Topographical Files of the National Museum of Ireland (NMI), which holds details of any artefactual material recovered from the 18th century to the present were consulted. The files contained no reference to the survey areas.

5.5 Cartographic information

Most of the mapped changes within Dublin Harbour takes place around Dublin Port in the 18th century though today. Earlier maps, including the 1670 Down Survey and Rocque's 1799 map of the area were presented above. Neither of these maps are as precise as the Ordnance Survey (OS) maps nor show as much intensive change as these slightly later maps. This proposed survey area closest to the cable landfall is focused on below with reference to the OS historic maps. The date from the mid-19th century to the mid-20th century and show a great deal of reclamation and development in the intervening 100 years.

The First Edition OS 6-inch map (1843–4) shows the area of the modern-day port, the location of the proposed cable landfall, as an estuarine landscape with large areas of sandflats, banks, and even oyster beds. The Bull Wall breakwater (RPS: 1013), at which the proposed survey route takes its first turn is labelled here as the 'New Wall' and the Great South Wall (RPS: 6798) with its batteries (SMR: DU019-027 and DU019-028), sea walls (SMR: DU019-029002 and DU018-066), signal tower (SMR: DU019-038001), the Pigeon House Fort (RPS: 6794), and the Poolbeg Light House (RPS: 7553) is also shown on this map. To the south of this wall, particularly west of the area marked 'Harbour' is not developed on this map as it is today.

By the creation of the OS 25-inch map (1910–1), some reclamation of the land now known as Dublin Port can be seen, though it still does not reach the area of proposed cable landfall. A new breakwater known as Port Crionain on the map was constructed c. 915m inland of the proposed cable landfall and included a Lighthouse at its southern end. Further inland is the Alexandra Basin, from which Alexandra Road near the proposed cable landfall got its name. Oil tanks are

found to the north of this for an area with increased industrial activity including Chemical Manure Works and a Shipbuilding Yard. To the south of Alexandra Basin is a new extension to North Quay which included another lighthouse at its eastern end. Another lighthouse, North Bank Lighthouse, was illustrated between the North Bull and the Breakwater Lighthouses.

The Last Edition OS 6-inch map (1953 and 1961) does not illustrate any further development between Port Crionain (as labelled on the 25-inch map) and the location of the proposed cable landfall c. 915m away. There are, however, further oil tanks, a timber yard, a motor assembly plant, and a grain silo to the north of Alexandra Basin. To the south of the Great South Wall is seen to have developed (some of which took place prior to the completion of the 25-inch map). These developments include land reclamation on which has been built residential structures, a Catholic chapel, a tuberculosis hospital or isolation hospital (RPS: 6793), a coastguard station, and the main drainage pumping station of the Dublin Corporation. The area marked 'Harbour' on the First Edition 6-inch map is seen to contain outfall works and electricity works (RPS: 6796) of the Dublin Corporation and a Lifeboat House on the 25-inch and the Last Edition 6-inch maps. East of this remains undeveloped at the time of mapping.



Figure 7: Proposed survey area within Dublin Harbour overlaid on modern OS map with inset locations of First and Last Edition 6-inch OS maps and 25-inch OS map at available scales.

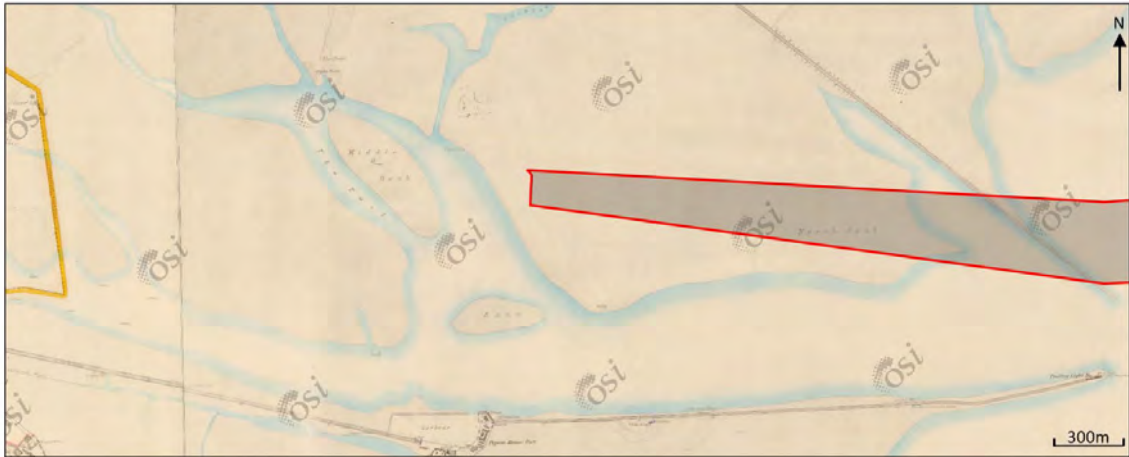


Figure 8: Proposed survey area within Dublin Harbour overlaid on First Edition 6-inch OS map (1843–4) (see Figure 7 for comparative scale).

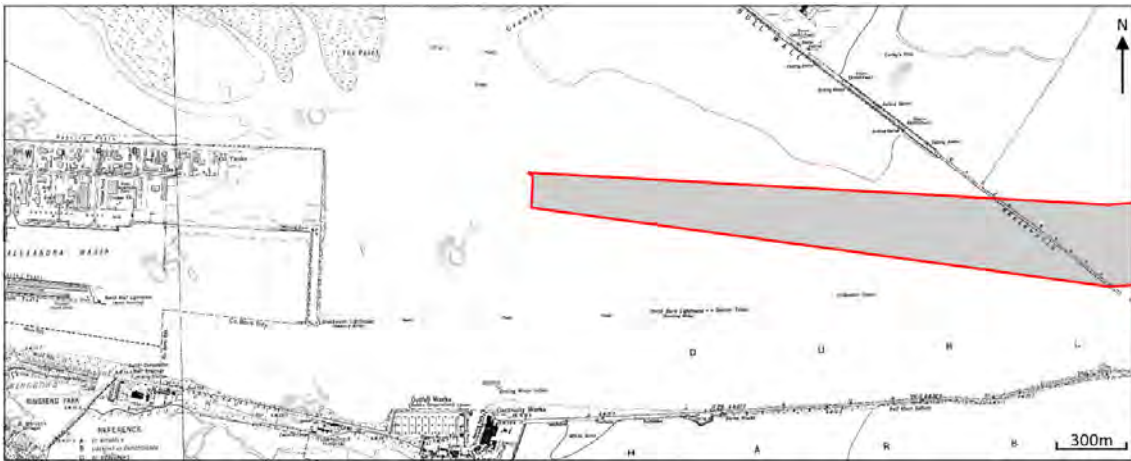


Figure 9: Proposed survey area within Dublin Harbour overlaid on Last Edition 6-inch OS map (1953 and 1961) (see Figure 7 for comparative scale).

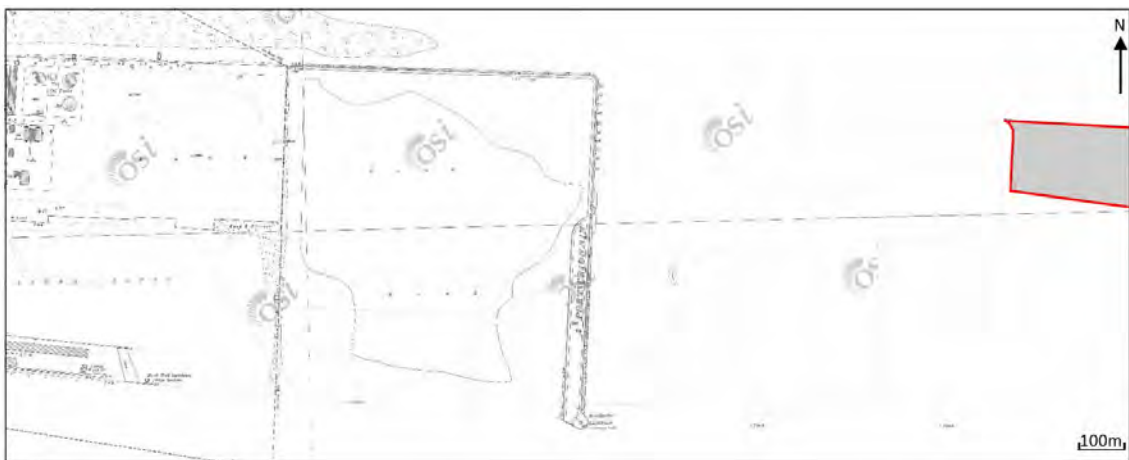


Figure 10: Proposed survey area within Dublin Harbour overlaid on 25-inch OS map (1910–1) (see Figure 7 for comparative scale).

5.6 Wreck inventory and wreck records

The National Monuments Service (NMS) has compiled a database of shipwrecks from around the coast of Ireland – the Wreck Inventory of Ireland Database (WIID). The inventory lists c. 18,000 wrecks comprising both known and unknown losses, and with both known and uncharted locations, from within Ireland’s territorial waters and to the edge of Ireland’s Continental Shelf. Wrecks with known locations, numbering nearly 4000, are mapped and can be viewed on the NMS’s online Wreck Viewer.

All wrecks in Ireland’s territorial waters and Contiguous Zone (up to 24nm limit offshore) are protected under the 100-year rule under the National Monuments Amendment Act 1987–2014.

Within Dublin Bay, there are 64 wrecks with known locational information. A further 21 with known locations roughly follow the proposed survey area from the mouth of Dublin Bay to the end of the Irish EEZ. Within the specific proposed survey area, there are three of these known wrecks (W02214, W09785, and W10291) and another two are within c. 100m of the borders of the survey area (W01465 and W01466). The remaining 80 wrecks with known locations are not considered at risk as they are known to be far enough away from the proposed routes. Of wrecks with unknown locations, 223 are recorded as lost in or near Dublin Bay, Dublin Harbour, or Dublin Port. Appendix 9.3 for a full list of these wrecks with unknown locations. Details about the wrecks within the proposed survey area and within c. 100m of the survey area are given below with WGS 84 coordinates.

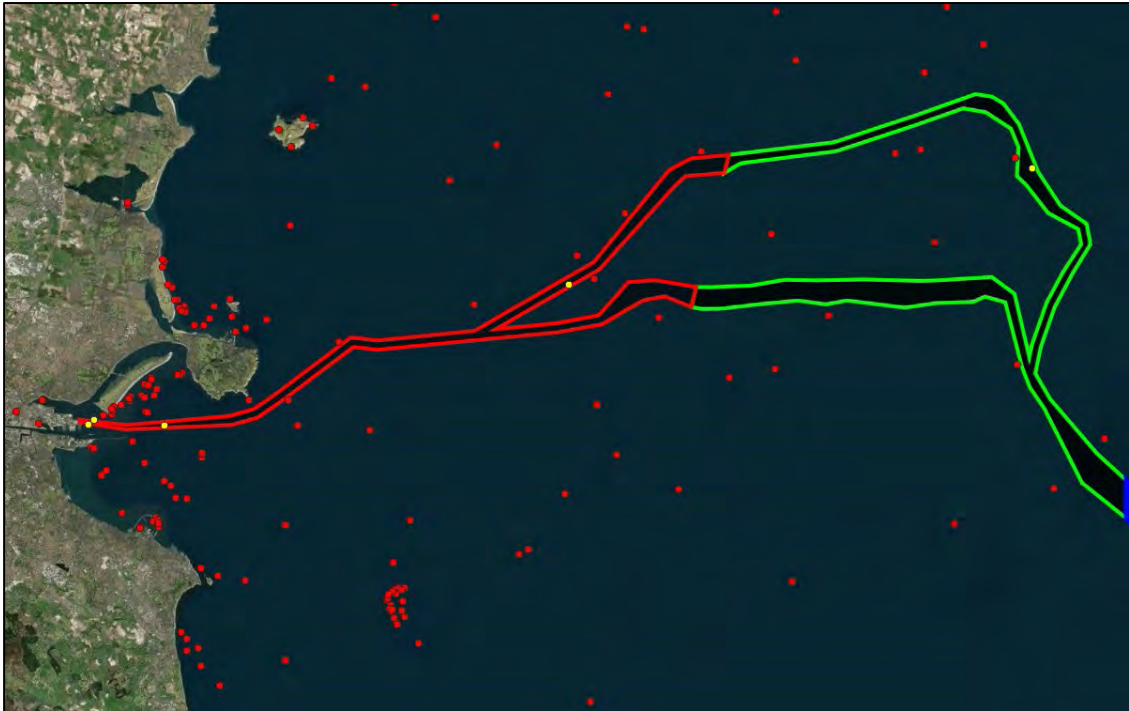


Figure 11: Proposed survey routes with surrounding shipwrecks with known locations in the WIID. Wrecks within the corridor and within c. 100km of the corridor are highlighted in yellow. The two closest to shore are within c. 100m of the route, not directly inside.

W01465

53.34806N, 6.18241W

A wooden wreck was recorded protruding from the mud c. 58.3m south of the southern boundary of the proposed survey route. The wreck is located within Dublin Bay c. 435m east of the end of Dublin Port.

W01466

53.35044N, 6.17739W

John Vernon's estate map of North Bull from the 1790s indicates 10 wrecks in the area. This wreck was illustrated towards the southern end of North Bull near a small creek. The site is located c. 81.5m north of the northern boundary of the proposed survey route and c. 755m east of the end of Dublin Port.

W02214

53.47278N, 5.41083W

The UK Hydrographic Office (UKHO) charted a wreck at this location (UKHO No. 009101251; Wreck ID: 7093; Chart symbol 84wk). The wreck was located and investigated in June 1983 in a general sea depth of 89m and least depth of 84m. At this time, the wreck was intact and likely on its side oriented NE/SW. The ship measured 56m long, 10m wide, and 4.5m high. It is found within the northern route option for the proposed works in the area between the 12nm limit and the end of the Irish EEZ, c. 5km west of the end of the Irish EEZ.

W09785-Kilkenny (cargo debris)

53.3477N, 6.12005W

The UKHO charted cargo debris from the *Kilkenny* at this location (UKHO Wreck ID: 6975). The ship was lost in November 1991. It was detected in 1994 and again in 2011 by acoustic sensor. The wreckage is found within the proposed survey route corridor, c. 4.5km east of the end of Dublin Port.

W10291

53.41639N, 5.78972W

The UKHO charted a 'fisherman's fastener' at this location in 1983 and again in 2016. This obstruction is located within the proposed survey route corridor, c. 6.9km west of the 12nm limit.

5.7 Previous archaeological work

The *Excavations Bulletin* online database, known as the Database of Irish Excavation Reports (www.excavations.ie) is published and updated annually. It provides summary accounts of archaeological excavations in Ireland from the years 1969 to present. It can also contain summaries of surveys (both terrestrial and underwater) and of archaeological monitoring work. Thirteen archaeological investigation projects have taken place in Dublin Bay or on the reclaimed land of Dublin Port. The full list is included Appendix 9.4. None of these archaeological sites relate directly to the licence area but their discovery in Dublin Port/Bay attest to the occurrence of significant previously unknown sub-surface cultural remains being discovered during development works.

6. Impacts

The archaeological data for recorded wreck sites and the evidence of how dangerous Dublin Bay has been through recorded history suggests there is a high potential for archaeological remains for the general area of the proposed cable installation and the associated survey corridor. The landfall on the reclaimed which makes up Dublin Port itself has less potential, though it sits above historic estuarine sediments and pools and may conceal further archaeological evidence. Excavations and monitoring works on the reclaimed land has yet to reveal archaeological remains, however. Works from the low tide out to sea elsewhere, however, has revealed new shipwrecks and other archaeological material.

Previously recorded shipwrecks held by the National Monuments Service are numerous for Dublin Bay and further into the Irish Sea; there are over 60 wrecks with recorded locations in Dublin Bay and more than 20 just outside the Bay in the Irish Sea. Three of these wrecks (W02214, W09785, and W10291) are located within the survey corridor and two (W01465 and W01466) are found within c. 100m of the proposed corridor boundaries. Given that another c. 220 wrecks without known locations are recorded lost in or near Dublin Bay, there is a high possibility that more are closer to the route than currently known. Some of these unknown wrecks may be buried by marine sediments and may not be revealed unless further investigations take place.

No invasive SI works are proposed over the wrecks within the survey corridor (W02214, W09785, and W10291). Wreck W02214 is located c. 891m south of a grab sample (48) and c. 896m north of a vibrocore sample (31). Wreck W09785 is located c. 852m east of a cone penetration test (CPT 1) and c. 1.3km east of a grab sample (37). Wreck W10291 is located c. 226m southwest of a grab sample (45) and c. 1.7km east of a vibrocore sample (24). The wrecks within a c. 100m buffer of the proposed corridor are all over 350m away from proposed invasive samples.

Ten bar probes with a diameter of 50mm shall be driven into the seabed in the intertidal zone and another ten from low water to the 3m contour. The cone penetration tests involve pushing a steel rod with a diameter of 35.7 mm through the seabed at up to eight locations along the corridor. The gravity corers and Vibrocorers which recover sediment samples have a maximum diameter of 120mm. The grab samplers will retrieve sediment at eight locations from the seabed surface to a depth of 0.1 to 0.5m.

The S.I. works shall have no impact on known wreck sites, SMR'S, RMP's, RPS or structures listed in the NIAH. Although the S.I. works have the potential to impact unknown buried archaeological sites such as wrecks, as well as wreck-related materials and artefact the surface area involved is very small.

The non-invasive geophysical survey shall have a positive impact on the underwater cultural heritage of Dublin Bay and the Irish Sea as it shall provide further information on potential cultural heritage sites.

7. Mitigation Measures

The objective of mitigation is to minimise and avoid any impacts, while the preferred mitigation approach is avoidance. When dealing with previously unrecorded sites, it is not possible to put in place exclusion zones in advance, so other mitigation measures are required, such as archaeological monitoring to ensure that should archaeology be revealed during the course of work, it can be dealt with by the archaeologist on site.

The following is offered as recommendations for mitigation specific to the site investigations works proposed for SOBR1 subsea telecoms cable system. The S.I. works will to help identify any archaeological areas, features or objects which will inform further mitigation measures for works associated with the installation of the cable.

- As three known historic shipwreck sites are located within the cable route corridor the geophysical survey should be carried out under licence from the National Monuments Service. The geophysical survey data sets shall be assessed by an underwater archaeologist with experience in interpreting geophysical surveys in advance of the geotechnical works taking place. The assessment of the geophysical data may lead to further mitigation measures in the event that potential archaeological features are noted in the geophysical data.
- A site inspection, accompanied by a metal detection survey where possible, shall be undertaken on the inter-tidal and upper foreshore within the cable route corridor. The survey shall be carried out by underwater archaeologists under licence from the National Monuments Service.
- No geotechnical works shall be undertaken in advance of agreement with the National Monuments Service regarding the assessment of the geophysical data and site inspection.
- Following the completion of the geotechnical works the data logs relating to the core and grab samples shall be assessed by an underwater archaeologist.
- At the completion of the geophysical and geotechnical works the AIA report shall be updated to consider potential impacts associated with the main installation works. The report shall assess the results of the geophysical and geotechnical works shall include proposals for mitigation of potential impacts on archaeology, such as avoidance, dive surveys, monitoring or test excavations.

It should be noted that all mitigation measures are recommendations only. The ultimate decision rests with the National Monument Service of the Department of Housing, Local Government and Heritage in collaboration with the National Museum of Ireland.

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National Inventory of Architectural Heritage (NIAH): www.buildingsofireland.ie/niah/

National Library of Wales: www.viewer.library.wales (Prima Europe tabula)

Ordnance Survey of Ireland: www.osi.ie

Place names database of Ireland: www.logainm.ie

UK Hydrographic Office (UKHO): www.admiralty.co.uk (Global Wrecks and Obstructions)

9. Appendices

9.1 List of RMPs and SMRs in the vicinity of proposed works

Sites listed on the Sites and Monuments Record (SMR) and Record of Monuments and Places (RMP) along the coastline and foreshore of the following areas are included as part of this study: south and east Howth, south and east North Bull Island, south Dublin North City at Clontarf (River Tolka), and north Dublin South City and Ringsend (River Liffey).

SMR No.	Class	Townland	ITM Easting	ITM Northing	RMP
DU016-003001-	Promontory fort - coastal	Howth	729410	736741	Yes
DU016-003002-	Ringfort - cashel	Howth	729618	736364	Yes
DU016-007--- -	Cairn - unclassified	Howth	729757	738921	Yes
DU018-020201-	Quay	Dublin South City	717208	734319	Yes
DU018-020564-	Quay	Dublin North City	717709	734434	Yes
DU018-053--- -	Settlement cluster	Dublin South City	718006	734002	Yes
DU018-066--- -	Building	Dublin South City	718505	734063	Yes
DU019-005--- -	Martello tower	Sutton South	726703	737150	Yes
DU019-007--- -	Castle - unclassified	Censure	727843	736311	Yes
DU019-020--- -	Battlefield	Clontarf East, Clontarf West, Killester South	719040	735930	No
DU019-027--- -	Battery	Dublin South City	720330	733674	Yes
DU019-028--- -	Battery	Dublin South City	722275	733892	Yes
DU019-029002-	Sea wall	Ringsend	720637	733805	Yes
DU019-033--- -	Mine - lead	Dublin North City	719269	735936	Yes
DU019-034--- -	Building	Dublin North City	720086	735862	Yes
DU019-038001-	Signal tower	Dublin South City	720219	733666	No

9.2 List of RPSs in the vicinity of proposed works

Record of Protected Structure (RPS) sites immediate to the coast and foreshore within the following areas are included as part of this study: south and east Howth, south and east North Bull Island, south Dublin North City at Clontarf (River Tolka), and north Dublin South City and Ringsend (River Liffey). Both Fingal County Council and Dublin City Council published RPS lists were referenced. Where possible, the National Inventory of Architectural Heritage (NIAH), was compared for additional data. Where dates are given in ranges, they derive from the NIAH and where given in centuries, they derive from the available RPS. RPS locations with asterisks are also SMR recognised sites (RPS 0583 is SMR DU016-007; RPS 0585 is SMR DU016-003001; RPS 5835 is SMR DU018-020564; RPS 7542 is SMR DU018-020201).

RPS	NIAH	Name	Townland	Date	Council
0583 *	-	Cairn, Dung Hill	Howth	c. 19 th c.	Fingal Co.
0585 *	-	The Great & Little Baily Promontory Fort	Howth	-	Fingal Co.
0586	1136700 6	Baily Cottage	Howth	1840– 1880	Fingal Co.
0587	1136700 7	Baily Lighthouse	Howth	1810– 1820	Fingal Co.
0912	5001000 9?	Bridges: Royal Canal, Dublin 1	Dublin North City	1910– 1915	Dublin City
0926	-	Ceuta	Sutton North	Early 20 th c.	Fingal Co.
0927	-	Riarkeevan	Sutton North	Mid 19 th c.	Fingal Co.
0928	-	Stonehaven	Sutton South	Mid 19 th c.	Fingal Co.
0929	1136600 7	Slieverue	Sutton South	1875– 1905	Fingal Co.
0930	1136600 6	Gilmoss	Sutton South	1890– 1910	Fingal Co.
0931	1136600 5	Croxteth	Sutton South	1890– 1910	Fingal Co.
0932	1136600 4	No. 1 Beachfield House	Sutton South	1840– 1850	Fingal Co.
0933	1136600 4	No. 2 Beachfield House	Sutton South	1840– 1850	Fingal Co.
0934	1136600 3	Sea Lawn	Sutton South	1820– 1840	Fingal Co.
0935	1136601 4	The Cliffs	Sutton South	1840– 1880	Fingal Co.
1012	5003005 6	Timber bridge, Bull Island	Parish: Clontarf	1815– 1825	Dublin City
1013	5003005 6	Bull Wall, Bull Island	Parish: Clontarf	1815– 1825	Dublin City

RPS	NIAH	Name	Townland	Date	Council
1923	5003027 4	Clontarf Garda Station	Clontarf East	1905– 1910	Dublin City
1924	5003019 2	St. Anthony's Parish Hall (formerly St. Anthony's Church)	Clontarf East	1895– 1930	Dublin City
1925	5003018 7	Clontarf Methodist Church	Clontarf East	1905– 1910	Dublin City
1926	5003005 1	78 Clontarf Rd, Seaview Terrace	Clontarf East	1840– 1850	Dublin City
1927	5003005 1	79 Clontarf Rd, Seaview Terrace	Clontarf East	1840– 1850	Dublin City
1928	5003005 1	80 Clontarf Rd, Seaview Terrace	Clontarf East	1840– 1850	Dublin City
1929	5003005 1	81 Clontarf Rd, Seaview Terrace	Clontarf East	1840– 1850	Dublin City
1930	5003018 5	84 Clontarf Rd	Clontarf East	1830– 1850	Dublin City
1931	5003018 3	Warrenpoint	Clontarf East	1845– 1850	Dublin City
1932	5003018 2	86 Clontarf Rd	Clontarf East	1845– 1850	Dublin City
1933	5003035 5	87 Clontarf Rd	Clontarf East	1845– 1850	Dublin City
1934	5003035 6	88 Clontarf Rd	Clontarf East	1845– 1850	Dublin City
1935	5003035 7	89 Clontarf Rd	Clontarf East	1845– 1850	Dublin City
1936	5003035 8	90 Clontarf Rd	Clontarf East	1860– 1850	Dublin City
1937	5003014 4	163 Clontarf Rd	Greenlanes, Clontarf	1860– 1870	Dublin City
1938	5003014 4	164 Clontarf Rd	Greenlanes, Clontarf	1860– 1870	Dublin City
1939	5003014 4	165 Clontarf Rd	Greenlanes, Clontarf	1860– 1870	Dublin City
1940	5003014 4	166 Clontarf Rd	Greenlanes, Clontarf	1860– 1870	Dublin City
1941	5003014 4	167 Clontarf Rd	Greenlanes, Clontarf	1860– 1870	Dublin City
1942	5003014 4	168 Clontarf Rd	Greenlanes, Clontarf	1860– 1870	Dublin City
1943	5003014 4	169 Clontarf Rd	Greenlanes, Clontarf	1860– 1870	Dublin City
1944	5003014 4	170 Clontarf Rd	Greenlanes, Clontarf	1860– 1870	Dublin City
1945	5003014 4	171 Clontarf Rd	Greenlanes, Clontarf	1860– 1870	Dublin City
1946	5003014 4	172 Clontarf Rd	Greenlanes, Clontarf	1860– 1870	Dublin City

RPS	NIAH	Name	Townland	Date	Council
1947	5003014 4	173 Clontarf Rd	Greenlanes, Clontarf	1860– 1870	Dublin City
1948	5003013 1	St. John the Baptist R.C. Church	Greenlanes, Clontarf	1830– 1840	Dublin City
1949	5003011 7	219 Clontarf Rd	Greenlanes, Clontarf	1820– 1840	Dublin City
1950	5003011 3	Clontarf bus garage (former tram depot)	Greenlanes, Clontarf	1870– 1880	Dublin City
5835 *	5001001 1	North Wall Quay	Dublin North City	1780– 1820	Dublin City
5836	5001001 2	CIÉ goods depot, North Wall Quay	Dublin North City	1890– 1910	Dublin City
5837	5001001 3	The Wool Store, North Wall Quay	Dublin North City	1830– 1870	Dublin City
5838	5001001 4	Former British Rail hotel, North Wall Quay	Dublin North City	1880– 1885	Dublin City
5839	5001001 4	Former British Rail hotel, North Wall Quay	Dublin North City	1880– 1885	Dublin City
5840	5001116 5	73 North Wall Quay	Dublin North City	1860– 1865	Dublin City
5841	5001116 6	Vallence & McGrath	Dublin North City	1860– 1900	Dublin City
5842	5001116 7	82 North Wall Quay	Dublin North City	1890– 1910	Dublin City
5843	5001116 9	The O2, former Point Depot	Dublin North City	1875– 1880	Dublin City
6782	-	70 Pigeon House Rd	Dublin South City	-	Dublin City
6783	-	71 Pigeon House Rd	Dublin South City	-	Dublin City
6784	-	72 Pigeon House Rd	Dublin South City	-	Dublin City
6785	-	73 Pigeon House Rd	Dublin South City	-	Dublin City
6786	-	74 Pigeon House Rd	Dublin South City	-	Dublin City
6787	-	75 Pigeon House Rd	Dublin South City	-	Dublin City
6788	-	76 Pigeon House Rd	Dublin South City	-	Dublin City
6789	-	77 Pigeon House Rd	Dublin South City	-	Dublin City
6790	-	78 Pigeon House Rd	Dublin South City	-	Dublin City
6791	-	79 Pigeon House Rd	Dublin South City	-	Dublin City
6792	-	80 Pigeon House Rd	Dublin South City	-	Dublin City

RPS	NIAH	Name	Townland	Date	Council
6793	-	Former St. Catherine's Hospital	Dublin South City	-	Dublin City
6794	-	Remnants of Pigeon House Fort	Dublin South City	-	Dublin City
6795	-	Former Pigeon House Hotel	Dublin South City	-	Dublin City
6796	-	Pigeon House power station	Dublin South City	-	Dublin City
6797	-	Sea wall, Pigeon House Rd	Dublin South City	-	Dublin City
6798	-	Great South Wall	Dublin South City	-	Dublin City
7542*	50020465	Sir John Rogerson's Quay	Dublin South City	1860–1880	Dublin City
7543	50020470	Bushell Ltd, former Tedcastle Steamer Co.	Dublin South City	1910–1915	Dublin City
7544	50020472	4 Sir John Rogerson's Quay	Dublin South City	1815–1835	Dublin City
7545	50020473	5 Sir John Rogerson's Quay	Dublin South City	1820–1840	Dublin City
7546	50020474	Columbia Mills	Dublin South City	1880–1900	Dublin City
7547	50020477	Former British & Irish Steam Packet Co.	Dublin South City	1905–1910	Dublin City
7548	50020478	Tropical Fruit Co.	Dublin South City	1880–1900	Dublin City
7549	50020479	The Ferryman, 35 Sir John Rogerson's Quay	Dublin South City	1810–1830	Dublin City
7550	50020479	The Ferryman, 36 Sir John Rogerson's Quay	Dublin South City	1810–1830	Dublin City
7553	-	Poolbeg Lighthouse	Dublin South City	-	Dublin City
8771	50011170	ESB Substation, Alexandra Rd	Parish: St. Thomas	1880–1910	Dublin City
8785	50060589	R&H Hall, Alexandra Rd	Parish: St. Thomas	1910–1930	Dublin City

9.3 List of unlocated shipwrecks

The National Monuments Service (NMS) Wreck Viewer is an online digital service that contains data on shipwrecks with known locations from around the coast of Ireland. It includes those wrecks located within the territorial waters, contiguous zone and on Ireland's Continental Shelf. The Wreck Inventory of Ireland Database (WIID) is also held and regularly updated by the NMS but contains a full listing of all recorded shipwrecks for Ireland, both around the coast and within the inland waterways. These include those with known, approximate, and unknown locations. Below is a list of 223 wrecks with unknown coordinates with reference to Dublin Bay, Dublin Harbour, or Dublin Port in their place of loss. This does not include similar places of loss which may also be relevant to the study area such as Howth.

Wreck Name	Wreck No.	Date of Loss	Place of Loss
<i>Elizabeth</i>	W0075 2	02/04/1882	Baldoyle Bank, Dublin Bay
<i>Brothers</i>	W0086 9	16/11/1880	Dublin Bay, Baily Light / Lambay, off
<i>Capella</i>	W0087 1	11/10/1870	Dublin Bay, Baily Lighthouse
<i>Ernest</i>	W0088 1	17/04/1875	Dublin Bay, Baily, off
<i>Rhoda / Rodie</i>	W0091 1	15/12/1820	Ireland's Eye, Co Dublin, NE side / Dublin Bay
<i>Vigilant</i>	W0091 9	19/11/1880	Dublin Bay, Baily Light, near
Unknown	W0094 6	19/11/1857	Dublin Bay, Baily Light, off
Unknown	W0095 2	13/01/1862	Dublin Bay, Baily Lighthouse, off
Unknown	W0095 5	17/04/1875	Dublin Bay, Baily Lighthouse, off
<i>3500</i>	W0095 6	07/10/1881	Dublin Bay, Baily Light, 0.5 mile S by W
Unknown	W0096 0	18/08/1903	Dublin Bay, Baily Light, ENE of/ 30 miles ENE of
Unknown	W0096 1	18/08/1903	Dublin Bay, Baily Light, ENE
<i>Eliza</i>	W0099 4	27/11/1804	Dublin Bay, N side
<i>Grenada Gally</i>	W0100 4	26/11/1772	Dublin Harbour, River Liffey, N Bull
<i>Hanover</i>	W0100 7	02/01/1726	Dublin, River Liffey, near Dublin Port
<i>Quebec</i>	W0104 5	06/11/1761	Dublin, River Liffey, near Dublin Harbour
<i>Triumph</i>	W0105 8	27/11/1804	Dublin Bay, N side
Unknown	W0111 2	27/11/1804	Dublin Bay, N side

Wreck Name	Wreck No.	Date of Loss	Place of Loss
<i>Active</i>	W0114 4	22/11/1798	Dublin Harbour, River Liffey, near
<i>Adventure</i>	W0114 7	26/02/1799	Dublin Harbour, River Liffey
<i>Aldeborough</i>	W0114 8	15/06/1787	Dublin Harbour, River Liffey
<i>Anne</i>	W0115 3	23/10/1761	Dublin Harbour, River Liffey
<i>Birmingham (SS)</i>	W0116 2	03/12/1851	Dublin Harbour, River Liffey, outside the breakwater
<i>Bristol Merchant</i>	W0116 4	03/04/1764	Dublin Harbour, River Liffey
<i>Charming Betsey</i>	W0117 3	26/03/1762	Dublin Harbour, River Liffey
<i>Chester Trader</i>	W0117 5	02/11/1804	Dublin Harbour, River Liffey
<i>Clara</i>	W0117 9	01/03/1791	Dublin Harbour, River Liffey
<i>Draper</i>	W0119 0	1797 - 1800	Dublin Harbour, River Liffey
<i>Emanuel</i>	W0119 8	06/11/1761	Dublin Harbour, River Liffey
<i>Emily Maria</i>	W0120 0	15/08/1855	Dublin Port, River Liffey
<i>English Oak</i>	W0120 1	27/09/1757	Dublin Harbour, River Liffey
<i>Enterprize</i>	W0120 2	31/03/1767	Dublin Harbour, River Liffey, near the second perch at Poolbeg
<i>Fitzhenry</i>	W0120 9	03/10/1848	Dublin Harbour, River Liffey
<i>George</i>	W0121 7	25/10/1774	Dublin Harbour, River Liffey
<i>Henry</i>	W0122 0	30/11/1798	Dublin Harbour, River Liffey
<i>Hind</i>	W0122 4	29/11/1711	Dublin Harbour, River Liffey, entrance
<i>Hope and Anchor</i>	W0122 6	03/11/1766	Dublin Bay, Clontarf, off
<i>Irish Mollie</i>	W0123 0	08/10/1939	Dublin Bay, Clontarf Baths
<i>Jane & Bella</i>	W0123 6	23/12/1803	Dublin Harbour, River Liffey
<i>Joanna Eliza Furlong</i>	W0124 0	03/12/1885	Dublin Bay, Clontarf, 1.5 miles E of N Bull Wall
<i>Joseph</i>	W0124 2	30/03/1799	Dublin Harbour, River Liffey
<i>Lighter No. 14</i>	W0124 9	01/05/1888	Dublin Bay, Clontarf, near
<i>Lovely Jane</i>	W0125 8	23/09/1774	Dublin Bay, Clontarf Island
<i>Marren Dorethea</i>	W0126 7	21/04/1800	Dublin Harbour, River Liffey

Wreck Name	Wreck No.	Date of Loss	Place of Loss
<i>Mary & John</i>	W0127 3	29/01/1765	Dublin Harbour, River Liffey,
<i>Mary Ann</i>	W0127 4	16/02/1838	Dublin Harbour, River Liffey, W Pier
<i>Mersey</i>	W0128 1	07/02/1816	Dublin Harbour, River Liffey, Lighthouse
<i>Neptune</i>	W0128 3	17/12/1771	Dublin Harbour, River Liffey
<i>Northern Lass</i>	W0128 8	17/03/1761	Dublin Harbour, River Liffey
<i>Noyade</i>	W0129 0	22/12/1798	Dublin Harbour, River Liffey
<i>Princess of Orange</i>	W0130 2	12/02/1760	Dublin Harbour, River Liffey
<i>Providence</i>	W0130 4	23/12/1803	Dublin Harbour, River Liffey
<i>St. Antonio</i>	W0131 2	13/12/1814	Dublin Harbour, River Liffey, the Bull, near
<i>St. Domingo</i>	W0131 3	Pre 19/04/1637	Dublin Harbour, River Liffey
<i>Sally</i>	W0131 6	14/10/1800	Dublin Harbour, River Liffey
<i>Shortland</i>	W0132 4	30/11/1798	Dublin Harbour, River Liffey
<i>Sophia Magdalena</i>	W0132 8	17/11/1775	Dublin Harbour, River Liffey, near the piles
<i>Susanna</i>	W0133 1	11/03/1763	Dublin Harbour, River Liffey, near
<i>Terpsichore</i>	W0133 4	27/08/1799	Dublin Harbour, River Liffey
<i>Thomas & Ann</i>	W0133 7	24/01/1764	Dublin Harbour, River Liffey
<i>Trawler No. 45</i>	W0134 1	10/01/1856	E Pier, Dublin Harbour
<i>Two Brothers</i>	W0134 4	05/02/1756	Dublin Harbour, River Liffey
<i>Two Brothers</i>	W0134 5	23/10/1761	Dublin Harbour, River Liffey
<i>Union</i>	W0134 6	10/11/1749	Dublin Harbour, River Liffey
<i>Union</i>	W0134 7	02/11/1804	Dublin Harbour, River Liffey, Lighthouse, off
<i>Volunteer</i>	W0135 2	15/05/1753	Dublin Harbour, River Liffey, entrance
<i>William</i>	W0135 8	11/12/1770	Dublin Harbour, River Liffey, entrance
<i>William & Mary</i>	W0136 1	31/10/1758	Dublin Harbour, River Liffey
Unknown	W0136 8	1640–1650	Dublin Harbour, River Liffey, N side of the channel near N wall extension, centre of the harbour between the Bull Wall and the N wall extension.
Unknown	W0136 9	24/02/1668	Dublin Harbour, River Liffey

Wreck Name	Wreck No.	Date of Loss	Place of Loss
Unknown	W01370	Nov. 1674	Dublin Harbour, River Liffey
Unknown	W01371	Nov. 1674	Dublin Harbour, River Liffey, off
Unknown	W01375	26/10/1762	Dublin Harbour, River Liffey
Unknown	W01379	20/10/1764	Dublin Harbour, River Liffey
Unknown	W01396	19/10/1771	Dublin Bay, Clontarf
Unknown	W01397	19/10/1771	Dublin Bay, Clontarf
Unknown	W01399	25/02/1773	Dublin Bay, at the point of the N Wall, opposite to Clontarf Island
Unknown	W01400	23/09/1774	Dublin Bay, Clontarf Island
Unknown	W01401	27/09/1774	Dublin Bay, Clontarf
Unknown	W01402	27/09/1774	Dublin Bay, Clontarf
Unknown	W01406	18/08/1776	Dublin Harbour, River Liffey
Unknown	W01413	21/07/1782	Dublin Bay, Clontarf, near
Unknown	W01415	20/02/1784	Dublin Harbour, River Liffey, the piles
Unknown	W01418	12/04/1786	Dublin Harbour, River Liffey
Unknown	W01425	22/12/1790	Dublin Harbour, River Liffey, entrance
Unknown	W01426	Dec. 1790	Dublin Harbour, River Liffey, entrance
Unknown	W01430	18/11/1791	Dublin Harbour, River Liffey
Unknown/ <i>Mary</i>	W01431	18/11/1791	Dublin Harbour, River Liffey
Unknown	W01432	21/11/1792	Dublin Harbour, River Liffey
Unknown	W01433	21/11/1792	Dublin Harbour, River Liffey
Unknown	W01434	10/01/1793	Dublin Harbour, River Liffey
Unknown	W01438	22/11/1798	Dublin Bay, Clontarf shore
Unknown	W01439	22/11/1798	Dublin Bay, Clontarf shore
Unknown	W01450	13/11/1852	Dublin Harbour, River Liffey, opposite the revenue station at the S wall
Unknown	W01452	13/04/1874	Dublin Bay, Clontarf Station
<i>Active</i>	W01467	27/08/1798	Dublin Bay

Wreck Name	Wreck No.	Date of Loss	Place of Loss
<i>Alexander</i>	W0146 8	12/10/1799	Dublin Bay
<i>Ant</i>	W0146 9	20/03/1812	Dublin Bay
<i>Brilliant</i>	W0147 0	16/03/1802	Dublin Bay
<i>Burford</i>	W0147 1	1770	Dublin Bay, Burford Bank
<i>Charlotte</i>	W0147 2	17/02/1852	Dublin Bay
<i>Diana</i>	W0147 3	29/09/1797	Dublin Bay
<i>Ebenezer</i>	W0147 4	30/12/1788	Dublin Harbour, River Liffey, 1.5 miles off
<i>Elizabeth</i>	W0147 5	26/02/1811	Dublin Bay
<i>Emily</i>	W0147 6	29/09/1818	Dublin Bay
<i>Endeavour</i>	W0147 7	16/03/1844	Dublin Bay, Burford Bank
<i>Erin (MV)</i>	W0147 8	26/01/1912	Dublin Bay
<i>Falmouth</i>	W0147 9	11/10/1814	Dublin Bay
<i>Friends</i>	W0148 0	21/08/1781	Dublin Bay
<i>Gebruder</i>	W0148 1	25/01/1805	Dublin Bay
<i>Henry</i>	W0148 3	20/03/1812	Dublin Bay
<i>Hero</i>	W0148 4	09/02/1861	Dublin Bay
<i>Hope and Speedwell</i>	W0148 5	27/02/1767	Dublin Bay
<i>Industry</i>	W0148 6	30/09/1800	Dublin Bay
<i>Industry</i>	W0148 7	10/01/1903	Dublin Bay
<i>John Hawkes</i>	W0148 8	04/03/1852	Dublin Bay, between Kish Bank and Dun Laoghaire
<i>Liverpool (SS)</i>	W0148 9	31/08/1879	Dublin Bay, Burford Bank, outside
<i>Lizzie</i>	W0149 0	01/11/1867	Dublin Bay, 3 miles off the Baily light
<i>Marcelia / Marcella</i>	W0149 2	22/01/1791	Dublin Bay
<i>Marchioness of Wellesley</i>	W0149 3	1820-1825	Dublin Bay
<i>Marsden (SS)</i>	W0149 4	19/04/1896	Dublin Bay
<i>Mary</i>	W0149 5	23/12/1803	Dublin Bay

Wreck Name	Wreck No.	Date of Loss	Place of Loss
<i>Mary</i>	W0149 6	16/12/1820	Dublin Bay
<i>Mary Ann</i>	W0149 7	18/03/1783	Dublin Bay
<i>Mercury</i>	W0149 8	20/06/1804	Dublin Bay
<i>Molly</i>	W0149 9	06/05/1800	Dublin Bay
<i>Neptune</i>	W0150 0	13/12/1763	Dublin Bay
<i>Olga</i>	W0150 1	17/06/1875	Dublin Bay
<i>Olympia</i>	W0150 2	1808	Dublin Bay
<i>Resolution</i>	W0150 3	19/02/1799	Dublin Bay
<i>Richard</i>	W0150 4	16/03/1773	Dublin Bay
<i>Robert</i>	W0150 5	March 1820	Dublin Bay
<i>Sally</i>	W0150 6	06/01/1784	Dublin Bay
<i>Seymour</i>	W0150 7	16/03/1844	Dublin Bay, Burford Bank
<i>Uniao</i>	W0151 1	01/10/1811	Dublin Bay
<i>Uxbridge</i>	W0151 2	19/02/1799	Dublin Bay
<i>William & James</i>	W0151 3	31/01/1784	Dublin Bay
Unknown	W0151 5	24/01/1724	Dublin Bay
Unknown	W0151 6	October 1758	Dublin Bay
Unknown	W0151 7	11/12/1766	Dublin Bay
Unknown	W0151 8	January 1768	Dublin Bay
Unknown	W0151 9	06/08/1772	Dublin Bay
Unknown	W0152 0	24/10/1775	Dublin Bay
Unknown	W0152 1	31/12/1775	Dublin Bay
Unknown	W0152 2	31/07/1777	Dublin Bay
Unknown	W0152 3	17/12/1790	Dublin Bay
Unknown	W0152 7	23/12/1803	Dublin Bay
Unknown	W0152 8	23/12/1803	Dublin Bay

Wreck Name	Wreck No.	Date of Loss	Place of Loss
Unknown	W01529	Sept. 1807	Dublin Bay
Unknown	W01530	20/10/1858	Dublin Bay
Unknown	W01531	09/02/1861	Dublin Bay, Burford Bank, off
Unknown	W01534	05/10/1870	Dublin Bay
Unknown	W01535	08/12/1877	Dublin Bay, Kish Light bearing ESE about 1.5 miles
Unknown	W01536	25/05/1890	Dun Laogaire to Poolbeg Light, Dublin Bay
Unknown	W01541	20/08/1934	Dublin Bay
Unknown	W01542	20/08/1934	Dublin Bay
Unknown	W01545	Unknown	Dublin Bay, Burford Bank, S Burford buoy
Unknown	W01546	Unknown	Dublin Bay, Burford Bank, E side
<i>Charlotte</i>	W01642	12/01/1771	Dublin Bay, Merrion Strand, Co Dublin, S of the Piles
<i>Don</i>	W01645	11/10/1824	Dublin Bay, Merrion Strand, Co Dublin
<i>Henry</i>	W01657	17/01/1767	Dublin Port, River Liffey, S side of the piles
<i>Mary Frances</i>	W01667	11/10/1824	Dublin Bay, Merrion Strand, Co Dublin
<i>Speedwell</i>	W01684	19/02/1833	Dublin Harbour, River Liffey, Lighthouse Wall
Unknown	W01695	11 th -13 th cent.	Dublin Bay, S Bull, near Ringsend
Unknown	W01700	15/01/1767	Dublin Bay, Merrion, Co Dublin
Unknown	W01714	16/12/1787	Dublin Bay, S of the piles
Unknown	W01715	16/12/1787	Dublin Bay, S of the piles
Unknown	W01716	16/12/1787	Dublin Bay, S of the piles
Unknown	W01717	16/12/1787	Dublin Bay, S of the piles
Unknown	W01718	16/12/1787	Dublin Bay, S of the piles
Unknown	W01735	Unknown	Dublin Bay, Merrion Strand, Co Dublin
<i>Ebenezer</i>	W02000	05/04/1901	Dublin Bay, Baily Light, c. 8 miles ENE / About 6 miles NE of Dublin Bay
<i>Manchester (SS)</i>	W02047	26/11/1829	Skerries, Co Dublin / Dublin Bay, sandbanks between Dun Laoghaire and Howth
<i>Mary</i>	W02052	09/12/1908	Dublin Bay, Baily Lighthouse, around 1 mile NE

Wreck Name	Wreck No.	Date of Loss	Place of Loss
<i>Saline</i>	W02083	20/01/1862	Dublin Bay, Baily, a few miles E
<i>Simpson / Simson</i>	W02088	08/10/1849	Dublin Bay, Baily Lighthouse, 18 miles W by N
<i>Six Brothers</i>	W02089	25/08/1831	Dublin Bay, near Bennets Bank
Unknown	W02163	28/02/1799	Dublin Bay, N & S Bull
Unknown	W02164	28/02/1799	Dublin Bay, N & S Bull
Unknown	W02165	25/04/1800	Dublin Bay, N & S Bull
Unknown	W02166	25/04/1800	Dublin Bay, N & S Bull
Unknown	W02169	29/09/1816	Dublin Bay, off
Unknown	W02170	11/10/1824	Dublin Bay, S side
Unknown	W02171	11/10/1824	Dublin Bay, S side
Unknown	W02193	28/09/1871	Dublin Bay, Baily Lighthouse, 2 miles SE
Unknown	W02202	28/02/1903	Dublin Bay, Baily Light, 10 miles SE of
Unknown	W02205	25/06/1907	Dublin Bay, Baily, SW ½ W, Lambay WNW
<i>Lune</i>	W02977	09/02/1861	Dublin Bay to Calf of Man. Between
<i>Robert Brown</i>	W12313	27/10/1880	Dublin Bay, Shelly Bank, off the Bailey Lighthouse
Unknown	W12317	07/10/1881	Dublin Bay, Baily Lighthouse, ½ mile S. by W. of
<i>Confido</i>	W12576	16/03/1903	Sutton Creek, Co Dublin/Dockyard, Dublin Harbour
No Name	W12595	27/08/1899	Dublin Bay, Co Dublin.
<i>Maggie</i>	W12622	24/03/1898	Dublin Bay
<i>Friends</i>	W12703	16/01/1890	Dublin, Nose of Howth, Dublin Bay, c.3 miles SE of
No Name	W12708	Unknown	Dún Laoghaire, Co Dublin and Poolbeg Light, Dublin Bay, between
<i>Nicolino</i>	W12718	11/12/1888	Dublin Bay, Burford Bank, off
<i>Royal Oak</i>	W13031	04/12/1770	Dublin Harbour
<i>Jane</i>	W13059	11/02/1803	Dublin Harbour
<i>Active</i>	W13060	11/02/1803	Dublin Harbour
<i>Allison</i>	W13350	10/10/1815	Dublin Bay

Wreck Name	Wreck No.	Date of Loss	Place of Loss
<i>London</i>	W1346 4	05/11/1825	Dublin Harbour
<i>Lady Saltown</i>	W1425 9	31/05/1845	Dublin Harbour
<i>Francoloen</i>	W1504 1	25/12/1895	Dublin Bay, Blackrock, off
<i>Visitor</i>	W1531 8	19/06/1852	Dublin Bay (?)
Unknown	W1577 3	22/02/1926	Dublin Bay
<i>Lady Munster (SS)</i>	W1591 0	06/09/1929	Dublin Bay, North Bar buoy entrance
<i>Henry</i>	W1618 9	07/01/1776	Dublin Bay, Sutton
<i>Isaac</i>	W1624 0	16/12/1814	Dublin Bay, Sutton Bar
Unknown	W1630 6	13/12/1766	Dublin Bay
Unknown	W1631 6	11/12/1766	Dublin Bay
Unknown	W1633 0	04/08/1772	Dublin Bay
Unknown	W1634 9	10/09/1773	Dublin Bay
Unknown	W1636 0	27/01/1774	Dublin Harbour, Piles
Unknown	W1638 6	06/01/1776	Dublin Bay ?
Unknown	W1644 7	31/03/1817	Dublin Bay
<i>Agenora / Agenore</i>	W1653 4	14/12/1870	Dublin Bay, S Bank
Unknown	W1734 0	07/10/1881	Dublin Harbour, off
<i>Lady Eglinton (SS)</i>	W1741 4	13/10/1883	Dublin Harbour, River Liffey
<i>Captain McClintock</i>	W1741 5	11/11/1883	Dublin Harbour, River Liffey
<i>Jane</i>	W1783 8	12/04/1862	Liffey River, Dublin Harbour
<i>Pequot</i>	W1828 6	17/11/1867	Dublin Bay
<i>Adalaide/ Adelaide</i>	W1829 4	21/03/1868	Liffey River, Dublin Harbour
Unknown	W1854 0	1– 30/06/1644	Merrion Strand, Dublin Bay

9.4 List of Previous excavation in the wider vicinity of the Licence Area (Extract from The *Excavations Bulletin* online database)

99E0490- Sandymount Strand, Dublin Bay

718905E, 732761N

During cable installation for the Esat link along Sandymount Strand, archaeological monitoring took place. The cable trench was cut using a large plough. No archaeology was encountered.

01E0283,

01E0358,

01E0369,

01E0718,

01E0834,

02E0158- Dublin Bay

709110E, 742797N

Archaeological monitoring for the installation of a wastewater pipeline trench across Dublin Bay between Sutton and Ringsend. The monitoring covered the dredging of the diverted shipping channel using a hopper-suction dredger (01E0283) and a back-hoe dredger (01E0358) and the excavation of the pipeline trench on the foreshore (01E0369).

Periodic inspection of the drag-head allowed for the recovery of archaeological remains from the hopper-suction dredger. A total of 109 finds were recovered including 105 timbers, two timber and metal artefacts, and two leather artefacts. The recognizable timbers included whole or fragmented strakes, scarves, keels, false keels, futtocks, and floor timbers of wooden vessels. Many of these contained treenails and/or brass bolts.

The back-hoe dredger impacted a wreck near Sutton Creek on 30 April. This led to a dive survey and timber analysis which identified the wreck of an early Post Medieval (likely 17th or 18th century) ship. The pipeline was rerouted in order to avoid further impact on the remains. A total of 124 finds were recovered prior to this diversion including 83 timbers, 25 pottery sherds, 15 metal finds, and one stone artefact.

Over 1500m of pipe-trench was excavated between the low-water mark and the beachhead. This revealed a concentration of six timbers at chainage 8630, possibly indicating a badly damaged vessel or structure. Artefacts were also identified during monitoring including 20 worked timbers, six pottery sherds, and one cannonball. These were all unstratified.

The Sutton Wreck was surveyed and temporarily conserved under licence 01E0718. Two profile drawings were plotted bisecting the wreck and an EDM plan was created. Sandbags were then inserted around and on top of the wreck for temporary protection. No artefacts were noted during a dive survey of a 10m zone around the wreck. Regular monitoring took place after the

initial survey which identified further features of the wreck itself. The vessel has been interpreted as a 17th century trading ship that ‘lingered in warmer climes.’ The wreck was eventually reburied and hand dredging was used to test the stabilization of the sediments and the wreck remains. During this hand dredging, some timbers were identified exposed along the high-water mark.

Another three pieces of ship’s timbers were identified at Dollymount Strand during monitoring of the reinstatement works of the wreck. These timbers were excavated, removed, and conserved under licence 02E0158. The four timbers were identified as oak pieces likely from the same vessel, possibly the Sutton Wreck. These included a possible first futtock of a framing piece, a hull plank/strake, a floor timber, and a worn piece of planking. Tree nails were identified within the wood.

On the eastern side of the excavated pipe trench, a discrete stony feature was identified which was visible at low tide at Sutton Creek. A test excavation (01E0834) was carried out to explore the feature. The feature was an irregular cluster of unrolled sandstones with evidence of recent deposition. It measured c. 6.2m long and c. 3.2m wide. Auguring showed that the feature was limited to the visible layer and excavation indicated that the stones rested on natural sediment. This has been interpreted as discharge of ballast from a vessel trying to disengage from the sand.

01E0288- Berth 51A, Dublin Port

719973E, 734405N

Archaeological testing took place prior to the extension of Berth 51A in Dublin Port. Ten test-trenches were opened revealing three stratigraphic layers in nine of the trenches. These layers included backfilled material on the old estuary surface from 1970. The backfilled material was primarily made up of heavy building debris and was deposited to form a retaining wall for the reclamation scheme of the time. The estuarine silts lay above glacial gravel. The tenth trench identified bund material from the 1970s and deeper deposits of bund material from the old dredging line of the late 1960s. No archaeological remains were identified in any of the trenches

01E0403- Sutton and Bull Island (North), Dublin Bay

711929E, 736609N

Archaeological monitoring was carried out during the excavation of trenches at two locations for the northern end of the Dublin Bay Pipeline Scheme. At Sutton, a mechanical excavator was used within an inserted coffer dam. The excavation crossed into the intertidal zone. The excavation itself was monitored until the low-tide level was reached and then efforts were

turned to spoil-heap inspections. A couple of timbers associated with a wreck were identified at Sutton. At North Bull Island, a bulldozer and three mechanical excavators were utilized. Archaeologists monitored the bulldozer pushing material towards the excavators and inspected the uncovered area for timbers or artefacts. Several timbers were identified from North Bull Island including four sections of a ship's keel.

01E1004- Dublin Port Docks and Shipping Fairway

721072E, 734145N

In order to assess whether full-time archaeological monitoring was required for the periodic dredging of the docks by the Dublin Port Company, Dúchas requested monitoring in 2001. This involved the monitoring of trailer hopper-suction dredgers eastward from the EastLink toll bridge for c. 10km. The drag-head was inspected periodically which revealed only modern material.

04E0560- Berth 50A, Dublin Port

719726E, 734245N

Archaeological monitoring was undertaken during the dredging for a new berth at the south end of Breakwater Road South adjacent to land reclaimed since the late 1960s. Most of the site was within the primary modern harbour channel which is dredged regularly, but some of the site was near the historic location of hazards such as Brown's Patch sandbank and Clontarf Pool at the confluence of the Liffey and Tolka estuaries. No archaeology was identified during the monitoring.

04E0740- Poolbeg Yacht and Boat Club, Pigeon House Road

718777E, 732937N

Archaeological monitoring took place during dredging at the Poolbeg Yacht and Boat Club. Constant inspection of the excavator bucket of the back-hoe dredger was carried out and computer images of the surrounding sea-bottom with depths was watched. The top of two layers was a brown silt with modern debris above a sterile grey silt. No archaeological remains were identified.

08D038, 08E109- Dublin Port

721017E, 734633N

Assessment took place on a section of timber wreckage within the potential impact area of the proposed Dublin Gateway in 2008. Due to weather conditions, the survey of the site was

undertaken as a waded exercise and its extent was plotted using differential GPS. A systematic podé survey was also undertaken to identify buried remains and a metal-detector was used to identify whether iron fastenings were present. The visible limit of the wreck was fully documented and further investigations were proposed.

Geophysical survey of the proposed development footprint in 2002 identified anomalies, which were then visually surveyed through diving. A total of 75 side-scan sonar targets and three magnetometer anomalies were inspected. Other than the wreck discussed above, no other archaeological remains were identified. The only positive anomalies were modern including boat jetsam, disused pipe sections, and old moorings.

08D067, 0ER206- River Liffey, Harbour Quay, Poolbeg Riverine 711418E, 613505N

An underwater assessment took place prior to the construction of the proposed Dublin Waste Water Treatment Plant at Poolbeg, Dublin Harbour. The inspection took place over an area of 160m by 40m. A visual survey and metal detection survey took place within the area and found no archaeological remains.

09E0200, 10E0051- Berth 50, Dublin Port 719914E, 734516N

Archaeological monitoring was undertaken during the enlargement and reintroduction of the foreshore at Berth 50, Dublin Port. The Berth is in an area of 1960s reclamation. Two mechanical tracked excavators on a floating platform were used for the excavation which only identified modern infill above natural seabed.

15E0240- Sutton to Sandycove Cycleway & Footway 720941E, 736027N

Monitoring of groundworks for the construction of a 2km long cycle track and underground watermain realignment in 2015 and 2016. No archaeological remains were identified in 2015. Modern tramlines associated with the Clontarf to Hill of Howth Tramroad were identified in 2016.

16E0212, 17E0153, 17E0506, 17D0026, 17D077,
17R0045, 17R0196- Alexandra Basic Redevelopment Project 727030E, 733017N

During Site Investigations (SI) of the Alexandra Basin area, archaeological monitoring took place in 2016. This revealed no archaeological remains.

In 2017, six licences were granted for the varied archaeological work necessary during the project including underwater investigations within the approach channel (17E0153) and monitoring of the dredging (17E0506). A total of 201 artefacts were recovered during the monitoring and a new shipwreck was identified. Most of the artefacts related to ships including 120 timber frames, ten timber plank sections, ten fired bricks, seven anchor pieces, twelve iron-fasteners, two cannon balls, a fragment of copper sheathing, and the head piece of a wooden barrel. The remaining artefacts included four cast-iron deck bollards, two iron barrel hoops, a brass deck light-fitting, an iron horseshoe, a cast-iron ballast weight, a kiln tile fragment, various cast-iron items, three millstone fragments, and eight pieces of a wooden millstone axel.

A galley brick and pieces of metal slag were identified in Site 1 during dive surveys near where a galley brick was recovered in 2014. Ship's timbers had also been identified in 2014 near Poolbeg Lighthouse, Site 2. These were re-located in 2017 and further timbers were identified. These timbers were interpreted as part of a large shipwreck, most of which was *in situ*. The source location for the wooden millstone axel along with several ship-related timbers was also identified during monitoring and a 120m diameter exclusion zone was implemented around this area. The ship-related timbers were later proven to be sources from an *in situ* wreck which was then surveyed in detail.

Further archaeological monitoring of dredging took place in 2019–21. A total of 36 finds were recovered in the 2019–20 works (dredging campaign 3), 27 of which were ship-related timbers. The remaining nine finds including four lengths of wrought-iron chain, three lengths of hemp-rope, one piece of worked stone, and the crown piece of a small anchor. Another 49 finds were recorded during dredging campaigns 4–6. These including 32 ship-related timbers, six length of hemp-rope, three iron fastenings, two wrought-iron chains, one piece of wrought-iron plate, one anchor crown, one piece of shoe leather, one plough-claw, and one fragment of granite masonry.

18E0172- Promenade Road, Dublin Port

719691E, 735158N

In 2018 and 2019, archaeological monitoring took place during groundworks at Promenade Road, Dublin Port. Infill deposits of mixed beach sands were identified throughout the area of investigation. One area also revealed a gravelly garden soil full of limestone, broken concrete, and plastic. No archaeological remains were identified.