Appropriate Assessment report:	
Name of project or plan:	**Dredging of Malahide Marina using Water Injection Dredging techniques (FS FS006731).**
Name and location of Natura 2000 site:	There are a number of Natura 2000 sites located within in 15km of Malahide Marina. These Natura 2000 sites (with distance from proposed dredging area)are as follows: Malahide Estuary SAC (Code 000205)-adjacent- , Rogerstown Estuary SAC (Code 000208)-4.7km-, Baldoyle Bay SAC (Code 000199)-4.0km-, Rockabill to Dalkey Island SAC (Code 003000)-5.3km, Ireland's Eye SAC (Code 002193)-7.5km-, Lambay Island SAC (Code 000204)-8.6km-,Dalkey Islands SPA (Code IE004172)-5.3km-, Howth Head SAC (Code 000202), North Dublin Bay SAC (Code 000206)-7.6KM-, South Dublin Bay SAC(Code 000210)-12.6km-,Malahide Estuary SPA (Code 004025)-adjacent-, Rogerstown Estuary SPA (Code 004015-4.7km-), Baldoyle Bay SPA (Code 004016)4.0km-, Ireland's Eye SPA (Code 004117)-7.2km-, Lambay Island SPA (Code 004069)-8.6km-, Howth Head Coast SPA(Code 004113)-9.8km-, North Bull Island SPA (Code 004006)-7.6km-, South Dublin Bay and River Tolka Estuary SPA (Code004024)-10.8km-, Skerries Island SPA (Code 004122)-13.2km-, Rockabill SPA (Code 004014)-13.8km-. Based on a review of the specific features and conservation objectives for these Natura 2000 Sites the majority of these Natura 2000 sites were ruled out for further consideration based on the following criterion: *All of the features for which the site has been designated are considered to be outside the zone of influence of the proposed project and therefore no potential impacts on the conservation objectives of this site have been identified* *and/or* *There is no potential for impact on any of the habitats or species which forms a feature of interest for this site and therefore there is no potential for impact on any of the conservation objectives for this site* *and (for SPA's)* *While the east coast SPA's provide a discrete network of interconnected sites for a number of water birds these sites are*

too far distant from the proposed project for noise disturbance to lead to any impact

The following Natura 2000 Sites which could not be ruled out on these bases were considered further in this report ,these were as follows:

Malahide Estuary SAC (Code 000205)

Malahide Estuary SPA (Code 004025)

Rockabill to Dalkey Island SAC (Code 003000)

Lambay Island SAC (Code 000204)

Malahide Estuary SAC Site Code: 000205

Malahide Estuary is situated immediately north of Malahide and east of Swords in Co. Dublin. It is the estuary of the River Broadmeadow. The site is divided by a railway viaduct which was built in the 1800s.
The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive

[1140] Tidal Mudflats and Sandflats
[1310] *Salicornia* Mud
[1320] *Spartina* Swards
[1330] Atlantic Salt Meadows
[1410] Mediterranean Salt Meadows
[2120] Marram Dunes (White Dunes)
[2130] Fixed Dunes (Grey Dunes)

The outer part of the estuary is mostly cut off from the sea by a large sand spit, known as 'the island'. The outer estuary drains almost completely at low tide, exposing sand and mud flats. There is a large bed of Eelgrass (Dwarf Eelgrass, *Zostera noltii,* and Narrow-leaved Eelgrass, *Z. angustifolia*) in the north section of the outer estuary, along with Beaked Tasselweed (*Ruppia maritima*) and extensive mats of green algae (*Enteromorpha* spp., *Ulva lactuca*). Common Cord-grass (*Spartina anglica*) is also widespread in this sheltered part of the estuary.

The dune spit has a well developed outer dune ridge dominated by Marram Grass (*Ammophila arenaria*). The dry areas of the stabilised dunes have a dense covering of Burnet Rose (*Rosa pimpinellifolia*), Red Fescue (*Festuca rubra*) and species such as Yellow-wort (*Blackstonia perfoliata*), Autumn Gentian (*Gentianella amarella*), Hound's-tongue (*Cynoglossum officinale*), Carline Thistle (*Carlina vulgaris*) and Pyramidal

Orchid (*Anacamptis pyramidalis*). Much of the interior of the spit is taken up by a golf course. The inner stony shore has frequent Sea-holly (*Eryngium maritimum*). Well-developed saltmarshes occur at the tip of the spit. Atlantic salt meadow is the principle type and is characterised by species such as Sea-purslane (*Halimoine portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Sea Arrowgrass (*Triglochin maritima*) and Common Saltmarsh-grass (*Puccinellia maritima*). Elsewhere in the outer estuary, a small area of Mediterranean salt meadow occurs which is characterised by the presence of Sea Rush (*Juncus maritimus*). Below the salt marshes Version date: 12.08.2013 2 of 2 000205_Rev13.Doc, there are good examples of pioneering glasswort (*Salicornia* spp.) swards and other annual species, typified by *S. dolichostachya* and Annual Sea-blite (*Suaeda maritima*).

The inner estuary does not drain at low tide apart from the extreme inner part. Here, patches of saltmarsh and salt meadows occur, with Sea Aster, Sea Plantain (*Plantago maritima*) and Sea Club-rush (*Scirpus maritimus*). Beaked Tasselweed occurs in one of the channels.

The site includes a fine area of rocky shore south-east of Malahide and extending towards Portmarnock. This represents the only continuous section through the fossiliferous Lower Carboniferous rocks in the Dublin Basin, and is the type locality for several species of fossil coral.

The estuary is an important wintering bird site and holds an internationally important population of Brent Goose and nationally important populations of a further 15 species. Average maximum counts during the 1995/96-1997/98 period were: Brent Goose 1217; Great Crested Grebe 52; Mute Swan 106; Shelduck 471; Pochard 200; Goldeneye 333; Red-breasted Merganser 116; Oystercatcher 1228; Golden Plover 2123; Grey Plover 190; Redshank 454; Wigeon 50; Teal 78; Ringed Plover 106; Knot 858; Dunlin 1474; Greenshank 38; Pintail 53; Black-tailed Godwit 345; Bar-tailed Godwit 99. The high numbers of diving birds reflects the lagoon-type nature of the inner estuary.

The estuary also attracts migrant species such as Ruff, Curlew Sandpiper, Spotted Redshank and Little Stint. Breeding birds of the site include Ringed Plover, Shelduck and Mallard. Up to the 1950s there was a major tern colony at the southern end of the island and the habitat remains suitable for these birds.

The inner part of the estuary is heavily used for water sports. A section of the outer estuary has recently been infilled for a marina and housing development.

This site is a fine example of an estuarine system with all the main habitats represented. The site is important ornithologically, with a population of Brent Goose

The Conservation Objectives of the Malahide Estuary SAC are[1]

To maintain or restore the favourable conservation conditions of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected

1140 Mudflats and sandflats not covered by seawater at low tide
1310 *Salicornia* and other annuals colonising mud and sand
1320 *Spartina* swards

1330 Atlantic salt meadows

1410 Mediterranean salt meadows

2120 Shifting dunes along the shoreline (white dunes)

2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)

Rockabill to Dalkey Island SAC Site Code: 003000
This site includes a range of dynamic inshore and coastal waters in the western Irish Sea. These include sandy and muddy seabed, reefs, sandbanks and islands. This site extends southwards, in a strip approximately 7 km wide and 40 km in length, from Rockabill, running adjacent to Howth Head, and crosses Dublin Bay to Frazer Bank in south county Dublin. The site encompasses Dalkey, Muglins and Rockabill islands.

The area selected for designation represents a key habitat for the Annex II species harbour porpoise, within the Irish Sea. Population survey data show that porpoise occurrence within the site boundary meets suitable reference values for other designated sites in Ireland. The species occurs year-round within the site and comparatively high group sizes have been recorded. Porpoises with young (i.e. calves) are observed at favourable, typical reference values for the species. Casual and effort-related sighting rates from coastal observation stations are significant for the east coast of Ireland and the latter appear to be relatively stable across all seasons. The selected site contains a wide array of habitats believed to be important for harbour porpoise including inshore shallow sand and mud-banks and rocky reefs scoured by strong current flow. The site also supports Harbour seal (*Phoca vitulina*) and Grey

[1] NPWS (2013) Conservation Objectives: Malahide Estuary SAC 0002015. Version 1.National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht and dated 27/5/2013

seal (*Halichoerus grypus*), for which terrestrial haul-out sites occur in immediate proximity to the site. Bottlenose dolphin (*Tursiops truncatus*) has also occasionally been recorded in the area. A number of other marine mammals have been recorded in this area including minke, fin and killer whales and Risso's and common dolphins.

Reef habitat is uncommon along the eastern seaboard of Ireland due to prevailing geology and hydrographical conditions. Expansive surveys of the Irish coast have indicated that the greatest resource of this habitat within the Irish Sea is found fringing offshore islands which are concentrated along the Dublin coast. A detailed survey of selected suitable islands has shown areas with typical biodiversity for this habitat both intertidally and subtidally. Species recorded in the intertidal included *Fucus spiralis*, *Fucus serratus*, *Pelvetia canaliculata*, *Ascophyllum nodosum*, *Semibalanus balanoides* and *Necora puber*. Subtidally, a wide range of species include *Laminaria hyperborea*, *Flustra folicacea*, *Alaria esculenta*, *Halidrys siliquosa*, *Pomatocereos triqueter*, *Alcyonium digitatum*, *Metridium senile*, *Caryophyllia smithii*, *Tubularia indivisa*, *Mytilus edulis*, *Gibbula umbilcalis*, *Asterias rubens*, and *Echinus esculentus*. These Reefs are subject to strong tidal currents with an abundant supply of suspended matter resulting in good representation of filter feeding fauna such as sponges, anemones and echinoderms.

This site is of conservation importance for reefs, listed on Annex I, and Harbour Porpoise, listed on Annex II, of the E.U. Habitats Directive.

The Conservation Objectives[2] for the Rockabill to Dalkey Island SAC are:

[2] NPWS (2013) Conservation Objectives: Rockabill to Dalkey Island SAC 003000. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage

To maintain or restore the favourable conservation status of habitats and species of community interest for which the SAC has been selected:

1170 Reefs
1351 Harbour porpoise *Phocoena phocoena*

Malahide Estuary SPA Site Code: 004025

Malahide Estuary is situated in north Co. Dublin, between the towns of Malahide and Swords. The site encompasses the estuary, saltmarsh habitats and shallow subtidal areas at the mouth of the estuary. A railway viaduct, built in the 1800s, crosses the site and has led to the inner estuary becoming lagoonal in character and only partly tidal. Much of the outer part of the estuary is well-sheltered from the sea by a large sand spit, known as "The Island". This spit is now mostly converted to golf-course. The outer part empties almost completely at low tide and there are extensive intertidal flats exposed. Substantial stands of eelgrass (both *Zostera noltii* and *Z. angustifolia*) occur in the sheltered part of the outer estuary, along with Tasselweed (*Ruppia maritima*). Green algae, mostly *Ulva* spp., are frequent on the sheltered flats. Common Cord-grass (*Spartina anglica*) is well established in the outer estuary and also in the innermost part of the site. The intertidal flats support a typical macro-invertebrate fauna, with polychaete worms (*Arenicola marina* and *Hediste diversicolor*), bivalves such as *Cerastoderma edule*, *Macoma balthica* and *Scrobicularia plana*, the small gastropod *Hydrobia ulvae* and the crustacean *Corophium volutator*. Salt marshes, which provide important roosts during high tide, occur in parts of the outer estuary and in the extreme inner part of the inner estuary. These are characterised by such species as Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Sea Arrowgrass (*Triglochin maritima*) and Common Saltmarsh-grass (*Puccinellia maritima*).

The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.
This site is of high importance for wintering waterfowl and supports a particularly good diversity of species. It has internationally important populations of Light-bellied Brent Goose (1,104 individuals or 5% of the all-Ireland total) and Black-tailed Godwit (409 individuals or 2.9% of the all-Ireland total) - figures given here and below are mean peaks for the five winters 1995/96-1999/2000. Furthermore, the site supports nationally important populations of an additional 12 species: Great Crested Grebe (63), Shelduck (439), Pintail (58),

Goldeneye (215), Red-breasted Merganser (99), Oystercatcher (1,360), Golden Plover (1,843), Grey Plover (201), Knot (915), Dunlin (1,594), Bar-tailed Godwit (156) and Redshank (581). The high numbers of diving ducks reflects the lagoon-type nature of the inner estuary, and this is one of the few sites in eastern Ireland where substantial numbers of Goldeneye can be found.

A range of other species occurs, including Mute Swan (37), Pochard (36), Ringed Plover (86), Lapwing (1,542), Curlew (548), Greenshank (38) and Turnstone (112).

The estuary also attracts other migrant wader species such as Ruff, Curlew Sandpiper, Spotted Redshank and Little Stint. These occur mainly in autumn, though occasionally in spring and winter.

Breeding birds of the site include Ringed Plover, Shelduck and Mallard. Up to the 1950s there was a major tern colony at the southern end of Malahide Island. Grey Herons breed nearby and feed regularly within the site.

Malahide Estuary SPA is a fine example of an estuarine system, providing both feeding and roosting areas for a range of wintering waterfowl. The lagoonal nature of the inner estuary is of particular value as it increases the diversity of birds which occur. The site is of high conservation importance, with internationally important populations of Light-bellied Brent Goose and Black-tailed Godwit, and nationally important populations of a further 12 species. Two of the species which occur regularly (Golden Plover and Bar-tailed Godwit) are listed on Annex I of the E.U. Birds Directive. Malahide Estuary (also known as Broadmeadow Estuary) is a Ramsar Convention site.

The Qualifying Interests of the SPA are:

Great Crested Grebe (Podiceps cristatus) [A005]

Light-bellied Brent Goose (Branta bernicla hrota) [A046]

Shelduck (Tadorna tadorna) [A048]

Pintail (Anas acuta) [A054]

Goldeneye (Bucephala clangula) [A067]

Red-breasted Merganser (Mergus serrator) [A069]

Oystercatcher (Haematopus ostralegus) [A130]

Golden Plover (Pluvialis apricaria) [A140]

Grey Plover (Pluvialis squatarola) [A141]

Knot (Calidris canutus) [A143]

Dunlin (Calidris alpina) [A149]

Black-tailed Godwit (Limosa limosa) [A156]

Bar-tailed Godwit (Limosa lapponica) [A157]

Redshank (Tringa totanus) [A162]

Wetland and Waterbirds [A999]

The Conservation Objectives[3] of the SPA are:

To maintain the favourable conservation condition of Great Crested Grebe, , Light-bellied Brent Goose, Shelduck, Pintail, Goldeneye, Red-breasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Knot, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Redshank, Wetland and Waterbirds in Malahide Estuary SPA..

Lambay Island SAC Site Code: 000204

Lambay Island is a large (250 ha) inhabited island lying 4 km off Portrane on the north Co. Dublin coast. It is privately owned and is accessible by boat from Rogerstown Quay. The island rises to 127 m and is surrounded by steep cliffs on the north, east and south slopes. These cliffs contain good diversity in height, slope and aspect. The west shore is low-lying and the land slopes gently eastwards to the summit in the centre of the island. The underlying geology is varied, but is dominated by igneous rocks (of andesitic type) and ash. Also present are shales and limestones of Silurian origin, limestone conglomerates, and shales from the Old Red Sandstone era. The bedrock is exposed on the fringing cliffs and in rocky outcrops; elsewhere it is overlain by varying depths of glacial drift.

Lambay supports the principal breeding colony of Grey Seal on the east coast of Ireland, numbering 196-252 seals, across all ages. It also contains regionally significant numbers of Common Seal, of which up to 47 individuals have been counted at the site. Grey Seals and Common Seals occur year-round and the island's intertidal shorelines, coves and caves are used by resting and moulting seals.

Lambay Island is internationally important for its breeding seabirds. The most numerous species is the Guillemot, with almost 52,000 individuals on the cliffs. Razorbills (3,646 individuals), Kittiwakes (5,102 individuals), Herring Gulls (2,500 pairs), Cormorants (605 pairs), Shags (1,164 pairs), Puffins (235 pairs), and small numbers of Great and Lesser Black-backed Gulls also breed (all figures from 1995). Between 1991 and 1995 Fulmar numbers varied between 573-737 pairs. There is a small

[3] NPWS (2013) Conservation Objectives: Malahide Estuary SPA 004025. Version
1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaelteacht

colony (<100 pairs) of the nocturnal Manx Shearwater on the island and up to 20 pairs of Common Terns have bred in recent years. A few Black Guillemots have been recorded on Lambay, but it is not clear if they breed. A pair of Peregrines are known to breed on the island.

In winter the most notable bird species on Lambay Island is the Greylag Goose with numbers peaking at 1,000, though in recent winters there has been a decline to 400-700 individuals. There is also a small wintering flock of Barnacle Goose (up to 50), and recently Brent Goose (up to 100) have started to occur regularly. Small numbers of Great Northern Diver and Red-throated Diver are also present in winter.

An intensive survey of the natural history of Lambay Island was carried out in 1906 and published in the Irish Naturalist. A similar, comparative survey has been carried out in the early 1990s. With this background, Lambay Island is an excellent site for studies of marine biology, terrestrial fauna and flora, geology, geomorphology and ecology.

The island has been maintained as a wildlife sanctuary by its owners and no threats are envisaged should the present land use continue. Rodents may be causing some damage to the populations of burrow-nesting seabirds.

Lambay Island has good examples of vegetated sea cliffs, a habitat listed on Annex I of the E.U. Habitats Directive, and these cliffs hold internationally important populations of seabirds. The site is also of conservation importance for the populations of Grey Seal and Common Seal, species listed on Annex II of this Directive that it supports.

The Qualifying Interests of the SAC are:

Reefs [1170]

Vegetated sea cliffs [1230]

Halichoerus grypus (Grey Seal) [1364]

Phoca vitulina (Harbour Seal) [1365]

The Conservation Objectives [4] of the SAC are:

To maintain the favourable conservation condition of Reefs in Lambay Island SAC.

To maintain the favourable conservation condition of Vegetated sea cliffs of the Atlantic and Baltic coasts in Lambay Island SAC.

[4] NPWS (2013) Conservation Objectives: Lambay Island SAC 000204. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

	To maintain the favourable conservation condition of Grey Seal in Lambay Island SAC. To maintain the favourable conservation condition of Harbour Seal in Lambay Island SAC.
Description of the project or plan	The proposed works involve dredging of accumulated sediments to maintain navigability in Malahide Marina using Water Injection techniques as outlined in the Method Statement which accompanied the Foreshore Licence Application. The dredging is required to restore the marina depths to their original levels. The proposed dredging campaign is for the removal of up to a maximum of 33000t of dredged material in an initial campaign over a period of 25 days during the months of November 2018 –January 2019. This includes an extra volume to allow for unforeseen circumstances such as extreme weather events etc. Two further dredging campaigns are proposed for 2021/22 and 2024/25. Volumes proposed for these 2nd and 3rd dredging campaigns have yet to be determined and will be assessed prior to these operations. It is anticipated that the volumes will not exceed a maximum of 33000t for either of these campaigns. The location and details of the proposed dredging operations on the foreshore is shown in the following Drawings submitted by the applicant: • Drawing No. PH 17014(Site Location Map 02) • Drawing No PH 17014_Drawing 01 • Drawing No. PH 17027-E2-D01 • Drawing No. PH 17027-E2-D02 • Drawing No. PH 17027-G1-D01 The dredge limits are shown in red outline with reference to Drawing No PH 17014_Drawing 01 and covers an overall area of 4.3 Ha.
Is the project or plan directly connected with or necessary to the management of the site (provide details)?	No.

Are there other projects or plans that together with the project or plan being assessed could affect the site (provide details)?	No.
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site.	As the proposed project is located outside any of European site the main potential impacts are likely to be indirect impact associated with potential indirect habitat loss, damage of habitats and their associated communities and the loss or damage to a foraging resource for birds utilising the adjacent intertidal habitats and disturbance. The works could potentially; • Lead to direct habitat loss. • Cause disturbance to the structure and function of marine habitats and associated communities. • Cause disturbance to marine mammals. • Cause damage and disturbance to coastal habitats and associated species. • Have impacts on water quality. • Cause hydrological changes. • Cause impacts on wetland habitats for birds. • Lead to a mobilisation of sediments and the resulting potential to smother susceptible species • Lead to dispersion of alien invasive species • Cause noise disturbance to susceptible species including mammals and birds • impact on the natural circulation of sediments by removal of dredged sediments which may in turn change the morphology of other marine habitats • impact on sensitive habitats and benthic fauna with changes to the benthic fauna community within the dredged area • introduce pollutants into the water column during dredging and off-loading operations • cause noise and vibration disturbance to mammals, fish, wildfowl and other bird species from the dredging operation • create suspended sediment in the water column and deposition to nearby on mudflats • create a plume which may settle out and smother important benthic species which may have a knock on effect on designated species

Explain why these effects are not considered significant.	No direct habitat loss will occur within Malahide Estuary SAC or any European site. The project is confined to dredging an area of the marina which is excluded from the SAC. Dredging will remove sediments that have been deposited in the marina since it was last dredged in 1996 and overlie an area of artificial substrate of matting and gravel installed when the marina was originally created in 1991. There will be no direct habitat loss to any SAC area. The risk of disturbance to the structure and function of marine habitats and associated communities is associated with the deposition of sediment downstream of the marine within the SAC area. There is potential for temporary habitat change through deposition of fine silts over an area of intertidal mudflats and sandflats and subsequent potential for an alteration to the existing community complexes. M.edulis uses a variety of food sources so its food supply is not adversely impacted. Zostera angustifolia and Zostera noltii occur in Malahide SAC and flourish best where the local sediments are closely balanced between the forces of erosion and accretion. Excessive sedimentation can smother these plants and highly turbid water inhibits growth by reducing light available for photosynthesis. Sediment mobilised as a result of the dredging will settle in an area of the “short deeps” and from there be dispersed out to sea by the natural process that created these deep pockets originally. Didemnum vexillum has the potential to cause significant economic damage to fisheries and aquaculture. This species can spread by recreational boating, fisheries and aquaculture, ship recycling, marine industries, and shipping. This species has been identified as being present at Malahide Marina .The mobilisation of sediments leading to the spread of the invasive alien species may result in smothering the Mytlius eduluis community if settlement occurred on this community and there is potential for the

spread of this species if a suitable substrate was available. The Applicants propose to undertake the dredging during the months of December and January in any given year when the potential spread of this species is unlikely

Malahide Estuary SAC is not designated for marine mammals. With due consideration of the wide ranging nature of most marine mammals and their protection under the Under the Wildlife (Amendment)Act 1976-2005 and additional EU legislation (EU Habitats Directive) the potential for disturbance for marine mammals is considered here.

Noise levels associated with dredging activities are not expected to be significantly elevated over typical background levels associated with Malahide Marina. The deck noise associated with injection dredging is less than 81db. Measurement of underwater noise as a result of dredging has demonstrated that dredgers are marginally louder than shipping traffic. Coastal dredging operations can be detected by marine mammals at received levels exceeding ambient sound more than 10km from the shore. As the dredging activity will occur within a fixed area for a period of a number of days it has the potential to introduce anthropogenic sound at levels that may impact upon marine mammals.

While the level of noise resulting from the injection dredging are considered to be below that expected to cause injury to a marine mammal ,they have potential to cause lower level disturbance, such as masking or behavioural impacts. Therefore it is proposed that a Marine Mammal Observer (MMO) is present during dredging operations. Mitigation /Control Measures to minimise any potential noise disturbance to marine mammals including the specific functions of the MMO are outlined in the NIS in Section 7.1.2 (ref Pg40/41). This will ensure that there will be no disturbance to marine mammals during the course of the dredging operations.

There is no potential for any disturbance to the coastal habitats and associated species colonising mud and sand. The project will be confined to the marina area and there is no requirement to access or transverse the coastal habitats at any point. The dredging of silt from within the marina will not have the potential to impact on coastal

habitats due the particularly strong tidal streams in the area which are predicted to carry suspended sediment along the mid-section of the main channel.

While there will be increased turbidity arising from the dredging works this will be temporary in nature and is naturally occurring feature of estuarine environments with no potential to give rise to negative ecological effects.

The impact from altered hydrology will be minimal and insignificant.

The dredging will not result in habitat loss, there will not be significant disturbance to key species and there will be no habitat or species fragmentation within the SACs. The integrity of the sites will not be affected.

The proposed dredging operations will not result in the species range within the sites being restricted by artificial barriers to site use.

On the basis of the above it is considered that there will be no significant adverse effects, as a result of the proposed dredging using water injection techniques in Malahide Marina, as outlined in the application documents, on the 'qualifying interests' or the 'conservation objectives' of all the Natura 2000 sites as listed in this report and situated within 15km of the said dredging location.

Department of Housing Planning and Local Government and the Marine Licensing Vetting Committee, 1st November 2018.