

**FS007024 Drogheda Port Company**  
**Maintenance Dredging and Beneficial Re-use at Drogheda Port, Co. Louth**

**Contents**

|  |          |
|--|----------|
| <b>Consolidated Prescribed Bodies Observations.....</b>        | <b>2</b> |
| Water Marine Advisor (WMA) .....                               | 2        |
| Marine Institute (MI) .....                                    | 15       |
| Marine Survey Office (MSO) .....                               | 17       |
| Department of Agriculture, Food and the Marine (DAFM) .....    | 18       |
| Department of Culture, Heritage and the Gaeltacht (DCHG) ..... | 19       |
| Sea Fisheries Protection Authority (SFPA) .....                | 20       |
| Inland Fisheries Ireland (IFI) .....                           | 21       |

## Consolidated Prescribed Bodies Observations

### Water Marine Advisor (WMA)

#### **Re: Foreshore Licence application on behalf of Drogheda Port Co re River Boyne Maintenance Dredging (FS007028)**

In relation to the above an application for a foreshore licence has been received from Drogheda Port Co in order to carry out maintenance dredging for a period of 8 years between 10/04/2021 and 10/04/2029, within the commercial estuary of the River Boyne and the seaward approaches and to land ashore a portion of this suitable dredged material for beneficial reuse in the construction industry with the balance of material going to sea disposal. This is in effect a continuation of Maintenance Dredging on follow on to the Existing Foreshore Licence (Ref FS005747) which was granted on 10/04/2013 by DECLG and which expires on 10/04/2021

This application is to support a parallel Dumping at Sea application lodged with the EPA (it is my understanding that the current DAS Permit also runs out in 2021). Use will be made of 2 dump sites A1, A2 (ref Drawing No PH19002S\_D02 "Dredge Area and Offshore Dump Sites" in Attachment I in submitted documents) therefore environmental issues in relation to these sites will be addressed by the EPA. And so this report will concentrate on the dredging aspect of the proposal.

The primary purpose of the proposed maintenance dredging is to maintain a safe navigational water depth at the river entrance and seaward approaches, to maintain a safe and clear navigation channel to the ship berthing facilities, to maintain safe berths and ship swinging areas for ocean going vessels to safely enter, manoeuvre access and egress from Drogheda Port. The Port Co emphasise that the "beneficial reuse" portion of the dredged material by the construction industry is a by-product of the essential maintenance dredging operation which is encouraged by OSPAR (i.e. DAS must be considered as last resort after all feasible land based disposable options are ruled out) and so this element is not a mining or aggregate winning operation.

#### **SUBMITTED DOCUMENTATION**

The following documents were submitted in support of this application (in an A4 sized bound folder document)

- ***Cover letter of 6/12/2019 to Foreshore Unit***
- ***Completed Foreshore Licence Application form undated ?? including "supporting Notes/Documentation"***
- ***Various attachments as follows:***

- A** *Description of Proposed Works*
- B** *RPS- “Drogheda Port Company Maintenance Dredging Licence Application Hydraulic Modelling Study” dated 25<sup>th</sup> May 2019*
- C** *Dredging History 2001-2009*
- D** *Dredging after Weather Events*
- E** *Dredging Extent (MAP)*
- F** *Loading Area*
- G** *Loading Area coordinates*
- H** *Trailer Suction Dredger illustration*
- I** *Location of Maintenance Dredging Dumpsites (MAP)*
- J** *Hydrographic Survey Dumpsite A1*
- K** *Hydrographic Survey Dumpsite A2*
- L** *Survey Report on Drogue Release at Drogheda Offshore Dumpsite*
- M** *EPA and SFPA Correspondence*
- N** *Environmental Report for Maintenance Dredging at Drogheda Port (AWN Consulting) dated 6/12/2019*
- O** *Marine Institute Sampling and Analysis Plan (as submitted to MI dated 22/1/2020)*
- P** *Sediment Sampling and Analysis Report (Aquafact dated July 2019)*
- Q** *British Admiralty Charts*
- R** *Natura Impact Statement (Scott Cawley dated 22/11/2019)*
- S** *Foreshore Licence FS005747-existing*
- T** *Dumping at Sea Permit No S0015-02-existing*
- U** *Brady Shipman Martin-Planning Permission Letter*
- V** *Longitudinal Section Drawing No PH19002S\_D03 dated 30/10/2019*
- W** *Certification of Incorporation*
- X** *Company’s Memorandum and Articles of Association*
- Y** *Correspondence from DEHLG – Archaeology*
- Z** *Correspondence from NPWS*
- Z-1** *Options for Disposal – excerpts from “Environmental Statement – Options for Disposal of Dredge Material – re previous Capital Dredging Scheme – still relevant*

**PREVIOUS STUDIES CONSIDERED IN THIS REPORT FROM EARLIER DREDGING APPLICATIONS**

*PREVIOUS STUDIES AND MODELLING TO EARLIER DREDGING PROGRAMMES (Still considered relevant)*

*Drogheda PC 5-year maintenance dredging programme Sept 2001-Kirk McClure and Morton (the studies and modelling output from that application are still considered relevant to the current case)*

*Sediment Plume analysis extract from 1997 (for the then Capital Dredging project)*

## **CONSULTATION**

Drogheda Port Company have engaged in the Pre Application consultation process and the extent of this consultation is outlined at Part 4 of the completed Application Form and with specific reference to Attachments M (SFPA, EPA,) O (Marine Institute) and Y (DAHG – Archaeology).

The consultation process included circulation of an EIAR Scoping Document for discussion with various bodies including:

EPA

IFI

SFPA

DHPLG

NPWS

IWDG

DAFM

BIRDWATCH

Further details of the consultation process are presented in Attachment N (“Environmental Report” – Ref Section 2.3.2)

A meeting between DHPLG Officials and Drogheda Port Company also took place on October 17<sup>th</sup> 2019 as part of the Pre Application Consultation process in order to discuss the proposed Foreshore Licence Application for the Maintenance Dredging Project. An overview of the Foreshore Licence Application process was provided by DHPLG and an indication of the technical documents (drawings, maps, Dredging history – beneficial reuse statistics- etc.) necessary to be included with the formal submission were also outlined to Drogheda Port Company.

In terms of the pre application consultation with DHPLG on 17<sup>th</sup> October 2019, it was agreed that an EIAR was not required for this Foreshore Licence Application. Nonetheless a considerable quantity of relevant environmental assessments including an Environmental Report have been undertaken in recent years and these are included as supporting documentation to this application. Indeed, the structure, outline and presentation of this Environmental Report follows closely to the guidelines for an EIAR. The studies have investigated a range of potential environmental impacts which may be associated with the dredging activities and together they demonstrate that significant environmental impacts will not occur as a result of the dredging activity for which this foreshore licence is sought.

## **PROPOSED MAINTENANCE DREDGING OPERATIONS**

The extent of the areas to be dredged are shown on Drawing No PH19002S\_D01 – ‘Dredge Area – Overview Map’ – Attachment E. This encompasses the commercial estuary including all berths and ship swing basins, channel and river mouth and seaward approaches taking in a total area of 73Ha.

A summary of minimum dredge depth requirements with this area are presented in the Table on Pg. 4 of the “Description of Proposed Works” (ref Attachment A). It is noted in this regard that the seaward approach channel has to be maintained at -2.2m CD while Tom Roes Point Berth has a depth requirement of -5.5m CD.

The estimate annual quantities of maintenance dredging for period 2021-2029 are the same as those for the current Foreshore Licence (2013-2021) and are shown in Table 1 “Estimated Annual Quantities” on Pg. 6 (ref “Attachment A Description of Proposed Works”) and are as follows:

|  |  |
|--|--|
| Channel from town to sea including all berths and swing basins | 3,0000m <sup>3</sup> (4,800T)          |
| Entrance and Seaward Approaches                                | 9,0000m <sup>3</sup> (14,400T)         |
| Contingency  | 100,000m <sup>3</sup> (16,0000T)       |
| <b>Totals</b>  | <b>220,000m<sup>3</sup> (35,2000T)</b> |

These quantities are based on the averages over the previous 8-year history (i.e. over period of current Licence). The contingency of 100,000m<sup>3</sup> is to cover unforeseen events (including unexpected weather) where accreted material may impede safe navigation or reduce safe navigational water depths. This is becoming more a reality with changing weather patterns and increased severity of certain storm events. The contingency also allows for unexpected weather events at the river mouths and seaward approaches.

A range of dredging plant is suitable for maintenance dredging in the River Boyne. A contractor’s selection of preferred plant utilisation will be determined on plant availability, location of dredging and unit rate and may involve trailer suction dredger, backhoe dredger, split barge, grab dredger, bed levelling, or plough.

Maintenance dredging at Drogheda Port is primarily trailer suction dredging which gives minimal release with low sediment in suspension. When occurring typical maintenance dredging is tidal, twice daily usually commencing 3 hours before high water to one hour after and generally of 3 weeks’ duration. Campaigns are usually twice yearly depending on weather. The channel at primary dredge site is 100m wide. A typical dredgers beam is 12/14m therefore the extent of and spread of sediment run off is minimal considering the scale of the dredge, dredge timing duration, site location and duration of the run off. Dredge material is contained within an enclosed hold of the vessel while dredging and in transport to the dumpsites with the usual method of disposal of material via bottom door discharge. Typical Trailer Suction Dredging Illustration and specification details are shown in Attachment H.

Other than the Foreshore Licence start and finish date there is no date, time constraint or time limit sought for the maintenance dredging i.e. this may be required at any time which cannot be predicted in advance. Daily, weekly or monthly quantities are difficult to define in absence of a contract where

the contractor can advise of a vessel or plant production capacity. Experience to date at Drogheda Port with a range of suitable TSD dredge vessels for maintenance dredging at the entrances and seaward approaches in shallow water would have a per tidal range of 4,500m<sup>3</sup> – 5,500m<sup>3</sup> and with continuous running over two tides per day (optimal performance/production) could yield a total daily dredge volume of up to 9,000m<sup>3</sup> – 11,000m<sup>3</sup> (weekly maximum of 77,000m<sup>3</sup>) which would meet the current port requirements.

## **ENVIRONMENTAL ISSUES**

**In terms of the foreshore licence application this is assessed in relation to its potential impact on fisheries, navigation and the environment which I will deal with in turn**

### **Fisheries**

With regard to fishing and nursery habitats, as part of the 2006 Drogheda Capital Dredging Programme of 1.3km of the upper estuary, and the additional studies for the 2013 to 2021 Maintenance dredging campaign, an extensive amount of environmental assessment work has already been commissioned from previous projects. These studies demonstrated that there is minimal release of dredge material and that the dredging is not expected to have any negative impact on protected fisheries. The information for a capital dredge scheme can also be applied to the maintenance scheme however the predicted impacts should be considerably less due to the fact that dredging is only to maintain current depths, less concentrated in terms of activity levels and plant involved, carried out over much shorter period (max 2/3 weeks as opposed to 24/7) and mostly concentrated at the river mouth and seaward approaches.

The mussel fishery is closed. There is no Ministerial Bivalve Molluscs (Production Area) Designation. There are no vessels licensed to harvest the fishery and there is a government ban on all licensed salmon fishing on the river Boyne.

There is no commercial or recreational fishing at the offshore dumpsite given that it is a spoil ground port anchorages and quarantine area etc. There is no commercial fishing at the inshore dump sites given the shallow water and proximity to the low water mark.

Therefore, it can be concluded that there should be minimal impact on fisheries interest from the proposed maintenance dredging operations.

### **Navigation**

Maintenance dredging works are considered essential for the ongoing operations of Drogheda Port; a safe navigation channel must be maintained from sea to berth. Water depths particularly at the river entrance and seaward approaches are reduced by natural accretion from the coastal processes and accelerated accretion due to storm events particularly SE and NE gales. To maintain safe marine navigation depths this accreted material must be dredged on an ongoing basis. It is noted that

Drogheda Port will comply with all navigational requirements in relation to vessels used (marine notices, certification of vessels etc. as per DOT requirements) Additionally any Plant engaged in the actual dredging will comply with the International Collision Regulations and display the appropriate daytime and night time navigational signals. Dredging plant must comply with Port byelaws and directions of the Harbourmaster.

Marine activity at the Port is mainly commercial shipping with a small number of seagoing trawlers, inshore fishing boats berthing there on a daily basis. In summer months a small number of tourist yachts may visit Drogheda Port and some maritime festival/tourism related events may be organised using port facilities. In the general estuary region local day boats, fast power craft, rescue boats, rowers and canoes may be present.

Drogheda Port has a long history of dredging without impact or recorded incident on any of these marine related activities. Drogheda Port Co, within the past twenty years, has carried out two major capital dredging campaigns whereby a large number of dredging plant items were located within the wider community.

Therefore, it can be concluded that the proposed maintenance dredging operation will have a positive and beneficial impact in relation to ongoing navigational activities in Boyne channel and seaward approaches thereto.

## **Environment**

### ***Ecology***

None of the dump sites fall within any European Sites. The loading (dredging areas) however lies within the following sites:

- The River Boyne and River Blackwater SAC (002299)
- Boyne Coast and Estuary SAC (001957)
- Boyne Estuary SPA (004080)

There are also some European Sites within 15km of the loading (dredging areas) as follows:

- Clogher Head SAC (001459) – app 8.2km north
- Dundalk Bay SAC (000455) – app 13.5km northwest
- Rockabill to Dalkey Island SAC (003000) – app 15km southeast
- River Boyne and River Blackwater SPA (004232) – app 3.5km upstream and west
- River Nanny and Estuary SPA (004158) – app 3.7km south
- Dundalk Bay SPA (004026) – app 11km north
- Rockabill SPA (004014) – app 13.5km southeast

Potential impacts on these European sites area addressed in detail in the Natura Impact Statement (ref Attachment R).

This report concludes that the dredging operations will not have any effects on the conservation objectives of any European sites and considering the mitigation measures described in Section 6 there is no potential for any other plans or projects to adversely affect the integrity of any European Sites in combination with the dredging operations.

The NIS has examined and analysed the potential impact sources and pathways, how these could impact on the sites' special conservation interests species and whether the predicted impacts would adversely affect the integrity of the European Sites within the zone of influence of the proposed dredge areas and concludes that "the operations will not adversely affect (either directly or indirectly) the integrity of any European site either alone or in combination with other plans and projects".

This report concludes that with the correct implementation of mitigation measures (as set out in Section 6 of the said NIS) negative impacts on these European sites will be avoided.

### **Water Quality**

The proposed dredging works have the potential to impact on surface water quality through increasing the concentration of suspended sediment in the water column within the length of the channel to be dredged. Dredging will result in localised increased concentrations of suspended solids in the water column however the works will take place over a short time period and will have no lasting impact on water quality. The potential impact from Suspended Sediment on Water Quality is examined in the 'Environmental Report' at Section 6.3.6 where the following is noted:

*"Advanced computer modelling simulations have been undertaken of suspended sediment plumes for maintenance dredging at areas in and around Drogheda Port and the proposed dredging site. The work was undertaken using RPS existing Mike 21 models of the Boyne River estuary and the adjoining sea area. The results of the simulation of the maintenance dredging at the bar showed that away from the immediate area around the dredger, the total suspended sediment concentrations are very low at less than 80mg/l and the plume does not approach the area where the little terns nest on the northern side of the training walls. It should be noted that the area around the bar and the adjoining beaches is subject to regular storm wave events which lift sediments into suspension with concentrations of up to 380mg/l which is much higher than the levels of suspended sediment that occurs during the maintenance dredging of the bar. The simulation of the maintenance dredging of the fine silt deposits from Tom Roe's terminal berth, the swing basin, and the river channel has shown that apart from the area around the dredger, the suspended sediment plume concentrations are generally low with values typically less than 80mg/l and they further disperse relatively quickly"*

The mobilisation of contaminants is not expected at concentrations likely to cause significant impacts given that most are at typical or expected background levels within the sediment. The potential for



oil or fuel spills during the operation of dredging machinery is considered extremely unlikely (probability estimated at less than 5%).

Therefore, it can be concluded that the potential impact from the Maintenance Dredging operations on water quality should be minimal.

### ***Coastal processes and sediment regimes within coastal sub cell***

The range of potential effects have been examined in the NIS (ref Attachment R) including potential impacts of the loading and dumping operations on coastal processes and sediment regime within the coastal sub cell within which the operation is located. The RPS Report – “Maintenance Dredging License Application Hydraulic Modelling Study” dated 25<sup>th</sup> May 2019 (see Attachment B) examines this in further detail. Numerous studies of the coastal processes around the Boyne Estuary and the adjoining beaches of Counties Meath and Louth have been undertaken previously, including a report in 2012 on the impact of the entrance channel maintenance dredging on the sediment balance of the coastal sediment cell. This 2012 report was submitted as part of the 2013-2021 Licence Application and is still relevant to this Licence Application.

As part of the 2006 Foreshore Licence and Dumping at Sea Permit Application Hydrographic Surveys Ltd undertook a Drogue release survey in relation to the offshore dump site A1. The results of this survey are also still valid due to the fact that no significant change in coastline has occurred and the tidal regime is likely unchanged as a result. This drogue Release survey dated 22<sup>nd</sup> November 2006 is therefore included with the current Application documents (ref Attachment L). The key conclusion from this Drogue survey was as follows:

*‘In general the drogues travelled parallel to the coast in either a North-South or South-North direction, at no time did they travel in a direction that would indicate any shoreward direction of travel. From this it would be reasonable to assume that no sediment would come ashore when released from the designated dump site. If this exercise was to be carried out at Neap Tides the velocities would be lower and therefore even less possibility of shoreward movement.’*

In 2018 the OPW requested RPS to undertake studies to review the extreme water levels occurring along the east coast of Ireland to see if any changes had taken place in the extreme water levels since 2010. The results of the 2018 study showed that there had been no change in the extreme water levels (due to combinations of high tides and storm surge) established in 2010. The sediment transport rates along the beaches on either side of the entrance to the Boyne are driven by inshore wave climate and it is the inshore wave conditions that affect the movement of sediment along the coast. It is the occurrence of extreme water levels that are most important in determining the changes in the sediment transport rates along the shoreline.

As there has been no change in the extreme water levels, the sediment transport rates along the beach are unlikely to have changed significantly over the 7-8 years since the 2012 report. This conclusion is also confirmed by the fact that there has been no increasing trend in the amount of maintenance

dredging required since the 1990s to keep the Boyne entrance maintained to its navigational depth, thus the key conclusions to the 2012 report “Boyne Entrance Channel Dredging-Impact on Sediment Cell”, are still relevant to this Maintenance Dredging Licence Application.

This report concluded that the quantities of material which it is proposed to dredge and either dump or remove for beneficial reuse are sustainable in terms of the coastal processes and sediment regimes. Since the proposed quantities of dredged material is identical to the 2012 application the technical review of the RPS 2012 report as presented in the Engineer’s Report dated 18/6/2012, is still relevant to the present application and so the relevant extract is re-presented hereunder.

*“The works undertaken for this study indicate that there is only a small movement of the dredge sand which has been deposited in the offshore dumpsite area back towards the beaches around the Boyne entrance. Consequently, dredged material dumped at this offshore site contributes very little to the inshore coastal processes along the Co Meath and Co Louth beaches adjacent to the Boyne Estuary. Beneficial re use of this material is wholly appropriate in lieu of disposal at the offshore dumpsite given the insignificant movement of this material.”*

*The analysis of the results of the modelling undertaken for the IMAGIN project indicates a net annual bed sediment transport into Co Meath and Co Louth beach system from the SE is app 60,000m<sup>3</sup> per year. This figure is consistent with historical dredging practices and changes observed on the beaches around the entrance to the Boyne Estuary. The study concluded that in order to ensure that there are no impacts on the overall coastal cell from the dredging operations, not more than an average annual quantity of 60,000m<sup>3</sup> of dredged sand should be brought ashore for beneficial reuse. The remaining 30,000m<sup>3</sup> of material that is on average required to be dredged from the Boyne Estuary entrance is equivalent to app 0.6mm sand depth over the active beach area which is considered to be minor and insignificant. Nonetheless Drogheda PC have given an undertaking that the 30,000m<sup>3</sup> (average) of additional material to be dredged will be retained within the coastal cell either within the active system (i.e. dumped at Dump Site A2, depending on operating conditions) or placed in the offshore dump site (A1).*

*Therefore, it can be concluded that subject to the retention of at least 30,000m<sup>3</sup> of the dredged material within the coastal cells (A2 or A1) there should be minimal impact on the coastal processes and sediment regimes within the coastal sub cell within which the operation is located.”*

Advanced computer modelling simulations have been undertaken of the suspended sediment plumes for the maintenance dredging at the bar, Tom Roe’s terminal berth and swing basin as well as the river navigation channel. The work was undertaken by using RPS existing Mike 21 models of the Boyne River estuary and adjoining sea area.

The results of the simulations of the maintenance dredging at the bar, showed that away from the immediate area around the dredger, the total suspended sediment concentrations are very low at less than 80mg/l and the plume does not approach the area where the little terns nest on the northern side of the training walls. The area around the adjoining beaches is subject to regular storm wave

events which lift sediment into suspension with concentrations up to 360mg/l which is much higher than the levels of suspended sediment that occurs during the maintenance dredging at the bar.

The simulation of the maintenance dredging of the fine silt deposits from Tom Roe's terminal berth, the swing basin and the river channel has shown that, apart from the area around the dredger, the suspended sediment plume concentrations are generally low with values typically less than 80mg/l and they further disperse relatively quickly.

#### **DUMP SITES (General information) – See Also Drawing No PH190025\_D02 in Attachment I)**

The seaward dumpsite A1 has been used as the main dump site for over the past two decades for Drogheda Port maintenance and Capital dredging. Drogheda PC is the only permit holder in respect of the dump site. Two Impact Hypotheses have been undertaken at this site and each has demonstrated that this site has a reduced species diversity and abundance due to the history of use of this dump site. This site is used for both sand, silt and mud materials. This site is required for future maintenance dredging sea disposal from the berths, ship swing basins and channel etc. from town to sea and for the sand material from the river mouth and seaward approaches. The site is located within a designated anchorage of Drogheda Port in a depth of 13-15m at Chart Datum. To date there has been no significant impact or reduction on navigational depths or impacts to the overall site hydrodynamics.

The north near shore site (A2) is contained within the defined port pilotage limits of the Drogheda PC and regulated as such from a navigational and control of shipping perspective. The site has been determined by hydraulic and hydrodynamic mathematical computer modelling to be an advantageous site to aid the coastal process and beach re-nourishment – refer to ***“Drogheda PC 5 year maintenance dredging programme Sept 2001 – Kirk McClure and Morton” from previous 2013-2021 Foreshore Licence Application – (the studies and modelling output from that application are still considered relevant to the current one although Site A3 is now redundant)***

The site is only suitable for sand material from the river mouth and seaward approaches.

The depth at the site is shallow with only 4m of water at Chart Datum. Dredger access for safe material dumping is conditional on weather, state of time i.e. late flood or early ebb tide and vessel manoeuvrability.

The nearshore dumpsite A2 is used only for sand dredged at the channel and seaward approaches. The sand being part of the coastal sediment transport regime and as part of the beneficial re-use process, is deposited at the near shore site to aid the coastal process and beach nourishment. **The current Dumping at Sea Permit S0015-02 prohibits the use of this site in the months of July and August. This does not create any operational difficulty for Drogheda PC and so can also be included as a Condition in the Foreshore Licence when/if granted.**

The characteristics of the two proposed dumpsites A1 and A2 are described in more detail with reference to Attachment A “Description of Proposed Works” – ref Section 5.1 and 5.2.

### **Alternative Disposal Options**

Alternative methods for disposal of the dredged material area discussed in Section 7 – Pg. 10-17 ref Attachment A “Description of Proposed Works”, which is in accordance with the requirements of the OSPAR Convention where 3 possible sources for marine dredge material are recommended (as alternative to DAS) VIZ

- 1 Engineering Uses**
- 2 Agricultural and product uses**
- 3 Environmental enhancement**

Over previous dredging projects, both capital and maintenance, Drogheda PC has examined alternative disposal means in detail but has rejected these primarily on environmental and economic grounds.

The material within the Drogheda Port from the inner town quays to the river entrance at Mornington including, berths and swing basins comprises mostly silts and muds which contain none of the physical or chemical properties suitable for any of the 3 OSPAR suitable uses so DAS is the only commercial and environmentally acceptable option for this material. While silts and muds have no beneficial reuse value Drogheda Port has, over the previous maintenance dredging campaigns, being placing some sands from the bar and approach channel onto the near shore Dumpsite A2 subject to tides, weather, dredger manoeuvrability to assist beach nourishment.

Material at the river entrance and seaward approaches is primarily sand and some gravel. This material is considered suitable for beneficial reuse in the construction industry provided the quantities to be dredged are large, economies of scale can be applied, and market conditions are suitable. While this type of beneficial reuse is more suited to capital dredging schemes over a period of 24 months around 2010-2013 in conjunction with an aggregate company Drogheda Port Co trialled beneficial reuse of the material from the river mouth and seaward approaches with a proportion of the material going to the construction industry. The EPA were appraised of this trial at the time. The current Foreshore Licence requires the retention of at least 30,000m<sup>3</sup> within the Dumpsites A1, A2 and A3 (now redundant) which based on the modelling studies is sufficient for sustainability of coastal processes/beach nourishment. This would then allow for up to 60,000m<sup>3</sup> annually to go to beneficial reuse onshore. Attachment C “Dredging History” provides details of the volumes of dredged material sent for beneficial reuse between 2013 and 2018 which were as follows:

|                    |                            |
|--------------------|----------------------------|
| <b>May 2013</b>    | <b>36,814m<sup>3</sup></b> |
| <b>Summer 2016</b> | <b>9,463m<sup>3</sup></b>  |
| <b>Summer 2018</b> | <b>46,814m<sup>3</sup></b> |

It can be seen that all of these volumes are less than the annual volume of 60,000m<sup>3</sup> estimated for beneficial reuse based on model predictions, indeed over that 5-year period this would equate to an average of 18,618m<sup>3</sup> per annum and so is considered reasonable in these circumstances.

Drogheda Port point out that this is not considered or promoted as aggregate dredging or winning of sand with dredging of the mouth and seaward approaches primarily in response to sediment accretion caused by weather events. Between 2010 and 2013, 94,470m<sup>3</sup> of material was previously taken ashore as part of the beneficial reuse trial at the time. This is only a portion of the material dredged from here with the balance going to the seaward dumpsite. The river mouth and seaward approaches dredging and beneficial reuse project are tied together generally in response to weather events. The EPA was appraised of this trial at the time.

It should be noted that the examination of other potential beneficial reuses for which the dredged material may be used does not definitively rule out the following:

#### **Landfill Liner**

#### **Manufactured Topsoil**

However, in both cases there would be certain logistical, technical and economic constraints on its use without further onshore treatment (e.g. dewatering, desalination etc.) by the industry which may wish to use it. Indeed, Drogheda PC point out that previously some of the dredged sand has been used as cover for equestrian centres etc. and Drogheda PC also point out the "DM (sand) material brought ashore is available through the Drogheda Port contractor if sought by the industry for any of these purposes".

### **CONCLUSIONS/RECOMMENDATIONS**

Engineering is satisfied that the proposed maintenance dredging campaign will have minimal impact on fishing, navigation and subject to the mitigation measures on the environment. In particular Drogheda Port Co have demonstrated that the commercial reuse option (trialled previously with the construction industry) is not an aggregate dredging or winning of sand operation being primarily driven by the necessity to dredge the mouth and seaward approaches resulting from accretion and weather related events. The Consultants have demonstrated that subject to retention of at least 30,000m<sup>3</sup> of dredged material within the coastal cells (A2 or A1) there should be minimal impact on the coastal processes and sediment regimes within the coastal sub cell within which the operation is located.

The current Dumping at Sea Permit S0015-02 prohibits the use of site A2 in the months of July and August. This does not create any operational difficulty for Drogheda PC and so can also be included as a Condition in the Foreshore Licence when/if granted.

In conclusion Engineering has no objection to the granting of a Foreshore Licence subject to the following conditions:

- 1. Annual dredged volumes not to exceed those quantities as set out in Table on Page 6 of Attachment A "Description of Proposed Works" i.e. 220,000m<sup>3</sup>**
- 2. A companion DAS Permit being obtained from the EPA to cover the disposal of dredged material to Disposal Sites A1, A2 as appropriate when the current Dumping at Sea Permit S0015-02 expires.**
- 3. Further to 2 above the foreshore licence to run from 2021 to a date in tandem with the EPA DAS Permit period (a provisional final date of 10/04/2029 is set but this will be subject to adjustment if the EPA sets down a different DAS period with a different end date)**
- 4. The retention of at least 30,000m<sup>3</sup> of dredged material per annum within the coastal sells (A1, A2) in accordance with the recommendations as set out at 4.0 "Conclusions" in the RPS Report entitled 'Maintenance Dredging Licence Application Hydraulic Modelling Study' – dated 25<sup>th</sup> May 2019 (ref Attachment B)**
- 5. Dredged material shall not be disposed of at Dump site A2 during the months of July and August in any year for which this Foreshore Licence remains valid**
- 6. Mitigation Measures as set out at Section 6 of the Natura Impact Statement (NIS) dated 22/11/2019 (ref Attachment R) inclusive of those as set out at S 6.1.3.1 of the said NIS to be adopted where relevant unless otherwise varied by or directed by other condition in this Licence**
- 7. Where appropriate Marine notice, lighting and markings to be carried out in consultation with the Maritime Safety Directorate, Department of Transport, Leeson Lane, Dublin 2 and all vessels/plant used in association with the proposed dredging campaigns to have appropriate certification from the Marine Survey Office**

**Marine Institute Comments on Foreshore Licence Application by Drogheda Port Company – Maintenance Dredging of the commercial estuary of the River Boyne and seaward approaches at Drogheda Port (FS007028)**

Drogheda Port Company submitted an application for a Foreshore Licence to facilitate maintenance dredging within the River Boyne estuary and seaward approaches. It is also proposed to land ashore a quantity of the dredged material for subsequent sale with the remainder being disposed of sea, subject to the granting of a Dumping at Sea Permit by the EPA.

The area to be dredged is shown on the following Drawings submitted by the applicant:

- Drawing No PH19002S\_D01, Foreshore License Drawings – Dredge Area Overview Map”, Rev 02, dated 27/11/2019
- Drawing No PH19002S\_D02 “Foreshore License Drawings – Dredge Area and Offshore Dump Sites”, Rev 02, dated 27/11/2019

The area of foreshore involved is 73Ha.

Maintenance dredging is required to maintain safe navigational water depths at the seaward approaches and at the entrance to estuary, to maintain a safe navigational channel to the berthing facilities and to maintain safe berths and ship swinging area in order to allow vessels to safely enter, manoeuvre within and exit the port.

Maintenance dredging at this location has occurred on a regular basis in the past. The most recent Foreshore Licence for this activity was granted, by the then Minister for Environment, Community and Local Government, for an 8 year period commencing on 10<sup>th</sup> April 2013 (Ref. No. FS005747). This Licence allowed the dredging of 1,760,000m<sup>3</sup> (which included a contingency of 800,000m<sup>3</sup>) over the 8 year period. This volume of dredged materials is equivalent to 2,816,000 tonnes when a factor of 1.6 is applied to convert cubic meters (m<sup>3</sup>) to tonnes.

The current application is for a further 8 year period from 2021 – 2029 with the estimated amount of material to be dredged being 1,760,000m<sup>3</sup>. This quantity is comprised of 30,000m<sup>3</sup> from the port to sea as well as all berths and swinging areas, 90,000m<sup>3</sup> from the seaward approaches and a contingency of 100,000m<sup>3</sup>. The contingency is to cover unexpected or unplanned events that may impede navigation e.g. collapse of the river retaining walls that created the estuarine polder and release of material into the channel, as occurred in the year 2000. It is noted that the estimated volume of the material to be dredged during the period 2021-2029 is the same as that permitted in the existing Foreshore Licence granted in 2013.

The actual quantity of material to be dredged in any one year will vary depending on a number of factors including river flow rates, storm events and wind direction (accelerated accretion of material occurs, particularly in the seaward approaches and the entrance channel, during periods with sustained winds with a strong easterly component). The estimated volume of material to be dredged seems justified based on quantities dredged in past dredging campaigns. Based on the data on actual quantities dredged over the period 2001 to 2019 provided by the applicant, the quantity of material dredged in any one year ranged from a minimum of 74,070m<sup>3</sup> in 2008 to a maximum of 185,708m<sup>3</sup> in 2018. The annual average over this period was 108,856m<sup>3</sup>.

Samples of sediment from the area to be dredged were collected in February 2019 at the locations shown in Figure 5.8 in the document entitled "*Environmental Report for maintenance dredging at Drogheda Port, Drogheda, Co. Meath*" dated 6<sup>th</sup> December 2019, prepared by AWN Consulting and submitted by the applicant. The results of the chemical analysis of these sediment samples are, for the most part, below Action 1 level, as set out in the 2006 Guidelines for Assessment of Dredged Materials for Disposal in Irish Waters. Mercury, Aluminium, Chromium, Lithium and Manganese were all below the lower level guidance value. Arsenic was above the lower action level at stations DP 3-6 and 8-15. Cadmium was above the lower action limit for stations DP 6 and 11. Copper was above the lower action limit for stations DP 3 and 8. Lead was above the lower action limit for station DP 11. Nickel was above the lower action limit for stations DP 3-9 and 11-15. Zinc was above the lower action limit for station DP 11. All stations were below the lower action limit for all organochlorines including  $\gamma$ -HCH (Lindane). Six of the PCBs plus the sum of the 7 PCBs were above the lower action limit at station DP 16. Total extractable hydrocarbons ranged from 0.003 to 0.56 g/kg and all stations were below the lower guidance level. Tributyltin (TBT) and dibutyltin (DBT) were below the lower action limit for all stations. The sum of the 16 PAH's was below the lower action limit for all stations except DP 16. The results showed that none of the analysed samples exceeded the upper limits set out in Guidelines. On the basis of these data the Marine Institute is of the view that, from a sediment chemistry perspective, the material to be dredged can be considered to be clean and the dredging, as proposed, is not likely to have a negative impact on the marine environment.

As noted above the current Foreshore Licence application includes the proposal by Drogheda Port Company to bring ashore an annual maximum of 60,000m<sup>3</sup> of sand dredged from the entrance channel and its subsequent commercial re-use. This activity was permitted under the previous Foreshore Licence (Ref. No. FS005747) granted in April 2013. The Marine Institute has no objection in principle to this activity but, as previously stated, the Marine Institute is not aware of any clear national policy statement or policy guidelines on this activity and would recommend that these be developed without further delay.

There are no aquaculture production sites or significant sea-fishing locations within, or adjacent to, the area to be dredged and therefore there will be no impacts on these activities.

On the basis of the above the Marine Institute has no objections to a licence being granted.



Marine Survey Office (MSO)

**RE: FS007028 Drogheda Port Company**

I refer to the above and wish to advise that following careful consideration of section 6 of the application, this office is satisfied that there will be little or no adverse impact on navigational safety.

In addition to the proposed mitigating measures and public notice regime, the applicant is required to advise the U.K. Hydrographic Office of any dredging activity in order for charts to be kept up to date.

**Our Ref: FW.2.17 Drogheda Port Company – Maintenance Dredging at Drogheda Port, County Louth**  
**DHPLG Ref: FS007028**

Please see below conditions that should be included in any dumping at sea permit that issues to Drogheda Port Company

- The Department has no objections to the proposed dredging campaign, however due to the long duration of the permit sought and location within and in close proximity to SACs and Natura 2000 sites, best practice must be followed rigorously during the campaign to ensure the dredging, recovery and dumping at sea operations, as potentially disruptive activities do not adversely impact the local environment, flora and fauna as well as safe navigation and operations.
- The Department is aware of a historical mussel fishery in the area directly adjacent to the shipping channel and have no data on the current status of the sub tidal *Mystiques delis* population in the area. The applicant should consult directly with any active local fishers on their proposed maintenance dredging programme.
- It is recommended that the applicant consult with the local angling clubs. The Boyne is also one of the largest salmon producing catchments however the salmon area currently below the conservation limit for the catchment and all effort must be made to minimise the impact on the fish species and habitat in this SAC system.

### **Nature Conservation**

The proposed seabed dredging operations within Drogheda Port has been evaluated by a Natura Impact Statement and other documentation. The conclusion of the Natura Impact Statement document is that the proposed works are unlikely to pose a significant likely risk to nature conservation interests in the vicinity provided appropriate mitigation is implemented. The Department concur with this conclusion.

The proponent should also ensure that other activities not covered by the Foreshore Consent application take account of requirements for assessment under European and National legislation for nature conservation.

### **Underwater Archaeology**

No dredging shall take place within 10m of the wreck known as the "Boyne Boat" (53.72443N, 6.28670W) located in close proximity to the Queensborough navigational beacon.

No dredging shall take place within 10m of the wrecks of the four barges (053 43 09.14N, 006 18 30.22W) located adjacent to the turning area at Harbourville, Stagreenan.

Drogheda Port shall forward a chart to the National Monuments Service showing the above exclusions in relation to the proposed dredging area in advance of any dredging taking place.

## Inspector's comments

### 1. Wild Fisheries

Historically the lower stretches of the River Boyne were commercially fished for the blue mussel, *Mytilus edulis*. Following a settlement to the Mornington fishermen's group the classified mussel beds were declassified and no fishing currently takes place. The area is no longer part of the routine shellfish sampling programme in the river.

An extensive classified shellfish bed for razor clams *Ensis siliqua* occurs north and south of the mouth of the River Boyne. The razor clam fishery is prosecuted by dedicated vessels from the ports of Dundalk, Clogherhead, Skerries and Balbriggan on a regular basis. There has been no issue in the past with the SFPA conducting control activities in the area.

### 2. Shellfish Production Areas

The foreshore application area is adjacent to the classified production area of Gormanstown. The depth and type of water within the area is such that fishing for razor clams cannot be undertaken by the razor fleet and should therefore be of little concern. The razor fleet is fully aware of annual operations of the DPC dredging operations and knows the locations of the licenced dumpsites for dredged spoil.

There is no issue with the SFPA conducting official control activities during the dredging/dumping campaign.

### 3. Seafood Safety

The dredging operations have in the past caused no concern regarding both the removal and deposition of spoil on the licenced dumpsites which are adjacent to the Gormanstown shellfish production area. The current application does not differ from the methodology employed in previous campaigns and therefore should not cause any issue with the quality of harvested razor clam or any microbiological contamination. The operators regularly liaise with the SFPA Eastern region regarding operations and are also aware the need for immediate contact should a pollution event occur while the dredger is operating both in the river and at sea.

## Inland Fisheries Ireland (IFI)

### Overview

The Drogheda Port Company is requesting a foreshore licence to carry out dredging operations for the years 2021 – 2029. The dredging is carried out in the mouth of the river and in the approaches towards the port. A large body of supporting information is supplied with the application in relation to environmental assessments and the schedule of dredging operations from 2001 to 2019.

### IFI Comments

The application contained a number of detailed reports on natura and environmental assessments. The Drogheda Port Company has a 5 yearly sediment monitoring programme with the Marine Institute to assess the long-term effects of dredging on sediment in the area. This is very important to determine the impact that the disturbance of silt has especially on sea trout who can migrate along the coast and visit different estuaries.

On Pg 95 of the nature impact report there is a detailed list of fish species that are found in the estuary. IFI would request that where possible the scheduling of works takes into account the migratory window for salmon, sea trout, eel and sea lamprey. We recommend scheduling works outside the March – May period when salmon and sea trout smolts are travelling through the estuary and when shad are spawning. If works need to be undertaken in this window following extreme weather events we would request that work does not take place on a low tide as this reduces the dilution of suspended sediment in the water column.

The application states (page 116 Environmental report for dredging) that

#### **Fish**

**Assuming the full and successful implementation of the mitigations measures, there will be no significant residual impacts on the fish populations at any geographical scale**

The effect of dredging on the habitat and the noise generated during the operation while potentially significant the temporary nature of the work coupled with the occasional timings of the dredging operations (as shown in the dredging history) spread out across different months per year will mitigate the effects of the dredging. The amount of dredging can vary from 1 operation to 5 but averages at 2.5 operations per year.

There is a detailed pollution plan in place as outlined in the Natura impact statement report.

The Boyne Estuary is a well renowned angling location with particular emphasis on sea trout and bass. IFI would recommend liaising with the local angling clubs. The Boyne is also one of the largest salmon producing catchments however the salmon are currently below the conservation limit for the catchment and all effort must be made to minimise the impact on the fish species and habitat in this SAC system.