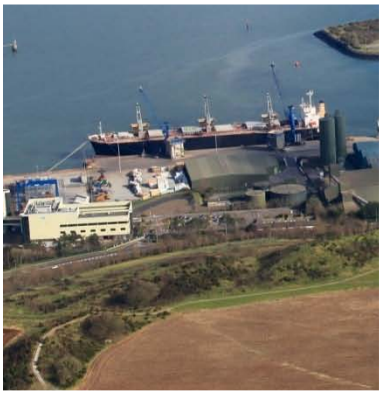
RINGASKIDDY PORT REDEVELOPMENT






Further Information in accordance with Section 37F [1]

Revisions to ENVIRONMENTAL IMPACT STATEMENT February 2015

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1.0 INTRODUCTION, SCOPING & CONSULTATION

Section 1.1 is updated as follows

1.1 Project Summary

This document has been prepared following a request from An Bord Pleanála to submit further information in accordance with section 37F(1) of the Planning and Development Act 2000 for the Ringaskiddy Port Redevelopment.

Each Chapter of the submitted EIS has been reviewed and where appropriate only the additional text has been provided.

References in blue font identify by reference to Sections whether and in what manner any changes occur to the text of the original EIS submitted in May 2014.

A revised screening for appropriate assessment has also been forwarded to the Board as requested.

The remaining text for Sections 1.1 to 1.6 remains unchanged.

2.0 NEED FOR THE SCHEME AND ALTERNATIVES

The text for Sections 2.1 to 2.2 remains unchanged.

3.0 PROJECT DESCRIPTION

The text Sections 3.1 to 3.5.7 remain unchanged. Sections 3.2.1.5 & 3.2.2.4 are included for completeness and are the exact text that appeared in the original EIS submitted at the application stage.

3.2.1.5 Dredging

Dredging works will be carried out to -13.0m CD adjacent to the new quay structures to provide sufficient water depths for vessels at all stages of the tide.

Bed conditions comprise uncompacted silts overlying gravel, clay and limestone depending on location. Dredging will be required in all materials including bedrock.

The soft overlying silt material is unsuitable for use in the works and therefore this will be removed, either by backhoe or trailing suction hopper dredger, and disposed of at a sea disposal site. The quantity involved is in the order of 90,000m³. The disposal of the dredged material will require application for a Dumping at Sea Permit from the Environmental Protection Agency, which is subject to a separate consenting process.

Bedrock and other hard strata will most likely be removed by a combination of drilling and blasting, and / or the use of use of mechanical plant working from a floating or jack-up barge. Typical floating plant is illustrated in Plate 3.2. Dredged rock and other suitable material will be re-used in the reclamation works. The total volume of rock to be removed is anticipated to be in the order of 47,000m³. Further detailed site investigations will be carried out prior to dredging to confirm the precise volume of rock to be removed.

3.2.2.4 Dredging

Dredging works will be carried out to -13.4m CD at the new berth slot in order to maintain a consistent water depth with the existing DWB. The approach to the berths will be dredged to -11.75m CD.

Bed conditions are similar to that in Ringaskiddy East however rock levels are deeper which will mean that no rock dredging will be required as part of the proposed dredging works. Dredging to the required depths will therefore either be by backhoe or trailing suction hopper dredger, and disposed of at a sea disposal site. Again, the disposal of the dredged material will require application for a Dumping at Sea Permit from the Environmental Protection Agency. Excavation of approximately 215,000m^3 of material is estimated.

3.5.8 Disposal at Sea from Dredging Operations

This is a new heading providing further information on dredging activities and disposal at sea. Refer to original EIS section 3.2.1.5 & 3.2.2.4 as set out above.

The total volume to be disposed from dredging at the Ringaskiddy West site is 215,000m^3 comprised of a combination of fine silt and sand. The total volume to be disposed from dredging at Ringaskiddy East site is 90,000m3 comprised of a mainly coarser material than at Ringaskiddy West. Further details of the nature of the material are included in revised Chapter 12 of the EIS.

The dredging will be undertaken by either a trailing hopper suction dredger (THSD) or a combination of THSD and backhoe dredger. The most likely scenario is the use of a THSD at Ringaskiddy West and a backhoe at Ringaskiddy East.

A TSHD is a self contained unit that carries out the dredging, stores the dredged material, sails to the disposal site and dumps the material by releasing through the vessel split bottom. In the case of a back-hoe dredger, the dredger excavates the material and places it in a separate disposal barge which then sails to the disposal site and dumps the material by releasing through the vessel split bottom. In both cases the method of release of material at the dump site is the same.

It is proposed that the dredged material will be disposed of at an l established marine disposal site located to the south east of the entrance to Cork Harbour at location 8° 09.00' to 8° 10.18' W 51° 43.00' to 51° 44.50' N as shown Figure 3.8.

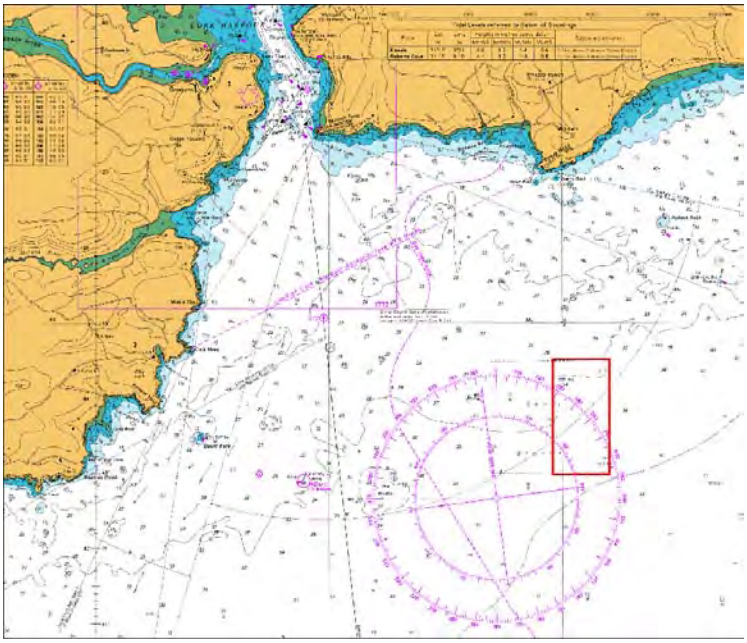


Figure 3.8 Location of disposal site

An individual dredging cycle will last approximately 205 minutes comprising 75 minutes of dredging and 130 minutes of travel and disposal time. Based on experience of previous dumping operations, it is expected that the barge will be required to dispose of the material over at least a 9 minute period while sailing around in the disposal area.

Dredging and disposal operations will be very temporary in duration and are expected to be undertaken within 20 days.

The text in section 3.6 - 3.7 remains unchanged.

4.0 PLANNING POLICY

The text for Sections 4.1 to 4.3 remains unchanged.

4.4 Harnessing Our Ocean Wealth: July 2012

Paragraphs 1 – 4 of Section 4.4 remain unchanged. The following are additional paragraphs for insertion at the end of Section 4.4:

The IMP makes no specific reference to dumping at sea, or the impacts of dredging. The policy notes that the Government is determined to ensure that our ocean wealth will be a key component of the country's economic recovery and sustainable growth and states that the IMP also aims to ensure a balance is struck between protecting our marine ecosystems and maximising the use of its resources as a source of economic growth.

Goal 2 of the IMP aims to ensure a healthy eco-system, by protecting and conserving the marine bio-diversity and ecosystems; managing living and non-living resources and implementing and complying with environmental legislation. In Ireland, compliance with environmental legislation in respect of dumping at sea is overseen by the Environmental Protection Agency (EPA).

A new Section 4.4[A] is inserted as follows:

4.4A Disposal at Sea

National and local spatial planning policy documents do not apply beyond the immediate foreshore. The foreshore extends from the high water mark out to 12 nautical miles and this area is recognised by Government as providing:

> "…a unique and important ecologically sensitive resource which supports various economic activities, public infrastructure and recreation uses." [Foreshore & Dumping at Sea (Amendment) Bill 2009]

Policy protection for the foreshore is provided by the London Convention 1972 (and subsequent Protocol of 1996), and the Convention of the Prevention of Marine Environment of the North-East Atlantic 1992 (the OSPAR Convention 1992). The London Convention 1972 has an objective to promote the effective control of all sources of marine pollution and to take all practicable steps to prevent pollution of the sea by dumping of wastes and other matter. The OSPAR Convention 1992 has an objective to protect the marine environment of the North-East Atlantic from pollution and regulate dumping at sea. In Ireland, OSPAR and London Convention requirements are implemented via the Dumping at Sea (DAS) Acts 1996 to 2012.

The OSPAR Guidelines of the Management of Dredged Material (Agreement 2014-06) provide a scientific and technical framework for dredging and associated dumping at sea. The guidelines note that:

> "Dredging is essential to maintain navigation to, within and from ports and harbours and for the development of port facilities, as well as for remediation, flood management and to maintain the carrying capacity of marine and coastal systems. Much of the material removed during these necessary activities requires deposit at sea." (p.3, Agreement 2014-06)

The aim of the Guidelines is to ensure that EU Contracting Parties take all possible steps to prevent and eliminate pollution and to protect the maritime area against adverse impacts associated with dredging. Since February 2010 the responsibility for permitting and enforcement for Dumping at Sea transferred from the Department of Agriculture Fisheries & Food to the Environmental Protection Agency (EPA). The EPA is responsible for issuing DAS permits for the disposal of dredged material.

Text for Sections 4.5 to 4.13 remains unchanged.

4.14 Summary

Paragraph 1 of Section 4.14 is revised with additional text inserted after the first sentence, as follows:

The London Convention 1972 and OSPAR Convention 1992 provide the framework for protection of the foreshore. Compliance with European legislation and guidelines related to dredging and dumping at sea is licensed by the Environmental Protection Agency.

The remainder of Section 4.14 remains unchanged.

5.0 HUMAN BEINGS

Text under Sections 5.1 to 5.3 remains unchanged.

5.4 Impact Assessment and Proposed Mitigation Measures

Text under Section 5.4 remains unchanged until sub-section 5.4.2.2.

5.4.2.2 Social Considerations - Construction Impacts

The first and second paragraphs of sub- section 5.4.2.2 remain unchanged.

The third paragraph of sub-section 5.4.2.2 is deleted and replaced with the following text.

The construction process will involve dredging and associated disposal at sea of dredged materials, as described in the project description. Dredging activity will result in circa 7 dredging cycles a day; it is expected to be completed within 20 days and will not take place during the months from May to August (inclusive). The potential impacts on social considerations relate to tourism; and recreation & amenity use of the harbour and Western Celtic Sea. These are discussed in 5.4.2.2(A).

Insert new sub-section 5.4.2.2 (A) – Disposal at Sea

5.4.2.2 (A) – Disposal at Sea – Construction Impacts

Dredging activity will take place outside the season for the main established leisure events that happen in the lower harbour – namely Cobh Regatta (August); Cork Sailing Week (early July); Ocean to City (late May / early July); or Escape from Spike Island (August). The Great Island Kayak Race takes place in December / January, but this race circumnavigates Cobh Great Island and does not at any point cross the shipping lane, so will be unaffected by the dredging works. The dredging activity and associated disposal at sea will therefore have no impact on established leisure events associated with the lower harbour.

The dredging ship (THSD) will use the existing shipping lane to exit Cork Harbour and will form part of the general commercial shipping traffic. The THSD will not impede the use of established sailing and recreational boating areas outside the shipping lane in the lower harbour. The THSD will make up to 7 trips to and from the site over the day. Typically there are 25 commercial vessels entering Cork Harbour per week (circa 1,200 – 1,300 pa). The additional shipping associated with the dredging and subsequent trips to the disposal site will, over a very short term, increase the level of commercial shipping traffic to and from Cork Harbour. Such short term increases in vessel activity are not unusual and from experience of similar and larger scale dredging activities including: Port of Cork Maintenance Dredging Autumn 2014; Lee Tunnel; and Cork Main Drainage Scheme; the Port of Cork has confirmed that there has never been an issue between dredging vessels and leisure craft due to the existing systems in place through Port Operations Centre that operates 24/7 and tracks all vessel movements (commercial and leisure) in the harbour. Further Port of Cork maintain communications with the organisers of sailing events (e.g. RCYC) as part of their operations management. Therefore the overall impact of dredging will be temporary and negligible.

The sea disposal site is off-course from existing ferry and cruise liner routes in and out of Cork Harbour and will not impede or impact on any tourism related shipping associated with the Harbour. While recreational sailing craft may occasionally traverse the disposal site the use of the existing site for disposing dredged material associated with the Ringaskiddy Port redevelopment will not impact on tourism shipping, or leisure sailing activities within the Western Celtic Sea.

5.4.3 Land Use

Text under sub-section 5.4.3 remains unchanged until sub-subsection 5.4.3.2 'Land Use – Construction Impacts'.

A new paragraph is inserted as follows:

Construction – Disposal at Sea

Disposal at Sea of dredged material will occur at an existing site, licenced by the EPA. There is, therefore, no impact on land use (which in this instance refers to use of the sea-bed and waters).

5.5 Cumulative Impacts

The first two paragraphs of sub-section 5.5 remain unchanged. The following new paragraph is inserted after the second paragraph.

In relation to construction dredging and associated disposal at sea, permitted projects with a potential cumulative impact have been identified as Monkstown Marina; Cobh Marina; Haulbowline Remediation; and Cobh Cruise Berth improvements. Proposed plans with a potential cumulative impact have been identified as a possible second cruise berth at Cobh; and development of a link from Haulbowline Island to Spike Island. When considered in combination the permitted projects and proposed plans do not have a cumulative impact on the Human Beings discipline. Monkstown Marina is the only project currently identified as having any potential significant dredging activity associated with its construction programme.

The remaining paragraphs under this sub-section remain unchanged. The following new paragraph is inserted at the end of Section 5.5.

Should construction dredging activity for Monkstown Marina and the proposed Ringaskiddy Port redevelopment coincide there would be a concentrated increase in commercial shipping within the Lower Harbour. This concentrated increase in commercial shipping would have a short term impact on recreational activity in the Lower Harbour, but it is considered that any cumulative negative impact would be negligible. Any cumulative impact would be very short term, with construction dredging and disposal at sea activities for the proposed Ringaskiddy Port redevelopment anticipated to be complete within 20 days. None of the other permitted or proposed plans within Harbour waters are considered to have a potential cumulative impact in relation to the Human Beings discipline.

5.6 Summary of Impacts and Mitigation Measures

Text under Section 5.6 is unchanged.

6.0 CULTURAL HERITAGE

Text for Sections 6.1 to 6.6.2 remains unchanged.

6.6 Impact Assessment

The following additional subsection has been inserted at the end of Section 6.6.

6.6.3 Impacts during Dumping at Sea

The licensed marine disposal area is well established, since 1978, and lies southeast of the entrance to Cork Harbour, as indicated on Figure 3.8 in Chapter 3.0 Project Description. The location is in an area of deep water, extending from depths of 28m in its northern sector, to below 45m in the south.

There is one possible wrecksite recorded historically as being located within the disposal area, in its northwest corner (Figure 6.15). The Admiralty Chart indicates the site as an 'obstruction' (Figure 6.16). The Historic Shipwreck Inventory maintained by the National Monuments Section at the Department of Arts, Heritage and the Gaeltacht qualifies this record as being a target identified by the UK Hydrographic Survey (UKHO reference 011500530). The UKHO record indicates that the anomaly measures 35m long by 20m wide, and rises 1.6m from the seabed. The record concludes that it is an obstruction that is a probable natural feature.

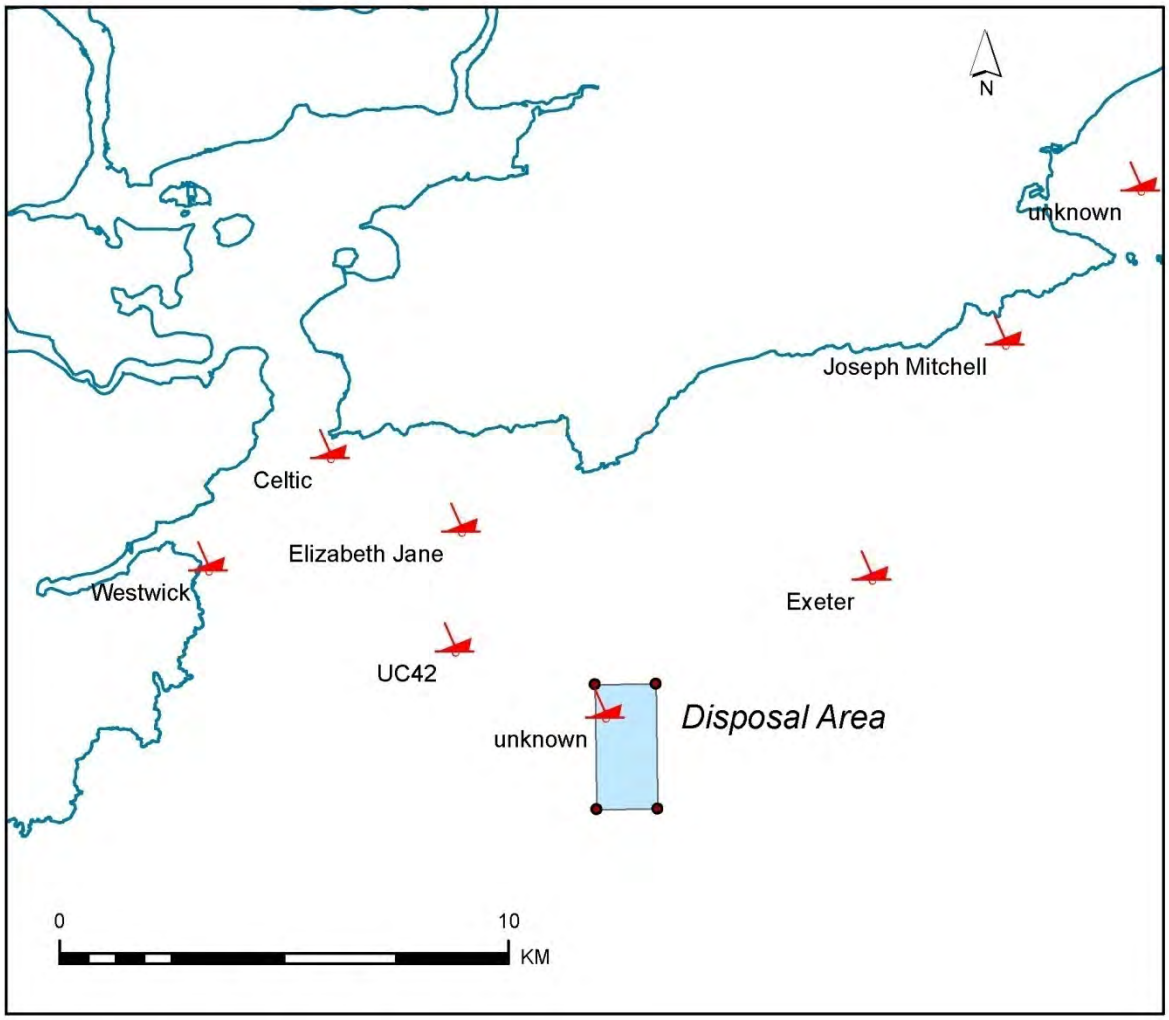


Figure 16.5 Shipwreck Locations in vicinity of disposal area.

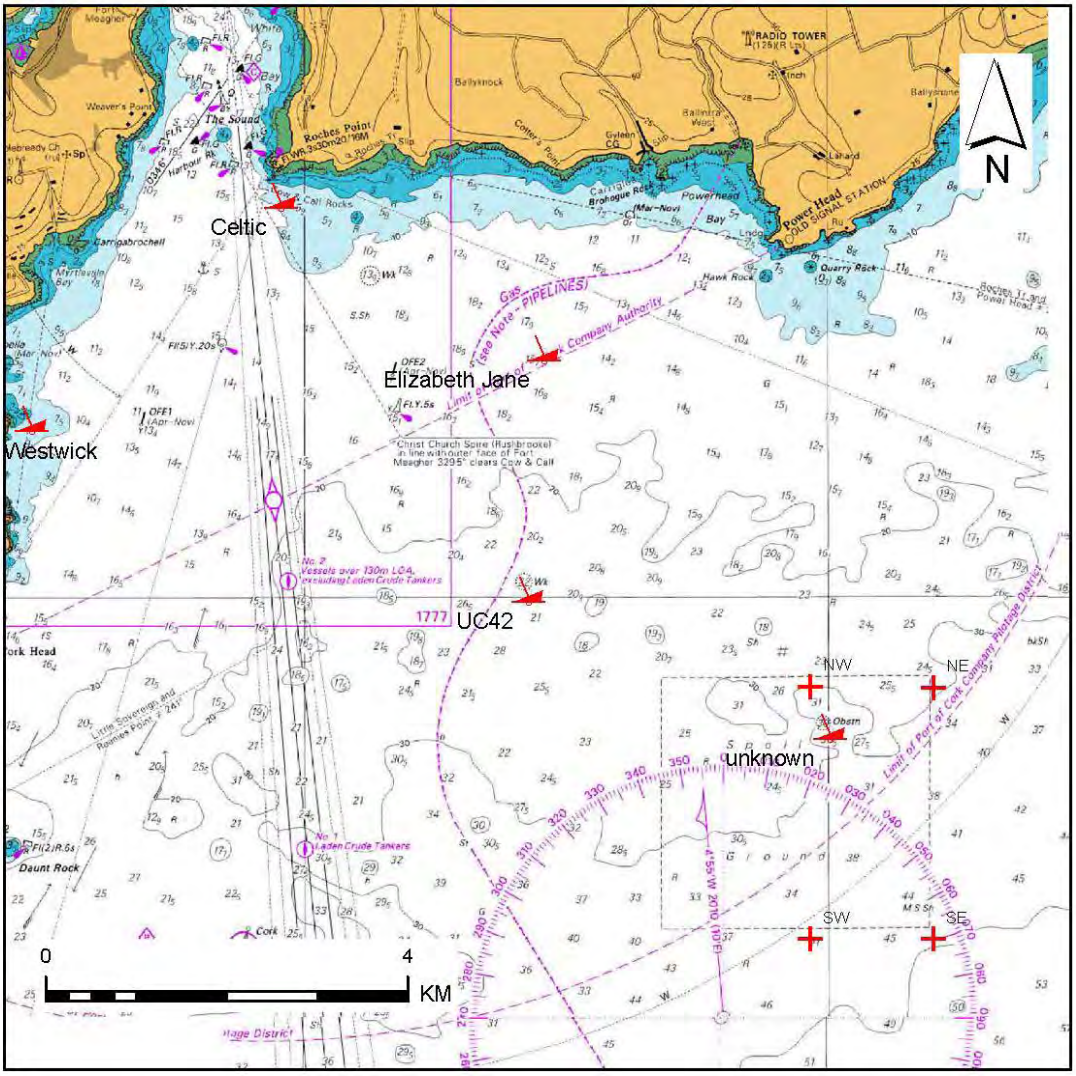


Figure 16.6 Admiralty Chart indicating shipwrecks.

There are no other known or possible shipwreck sites or features of archaeological significance within the disposal area. The next nearest feature is the wreck of German submarine UC42, which lies 3.1km northwest of the disposal area. It is a genuine wreck of the First World War, measuring 45m long and was lost in 1917. The submarine lies in 27m of water.

The Port of Cork has carried out marine geophysical survey of the disposal area. In 1999, an archaeologically-informed survey was conducted, comprising side-scan sonar and magnetometry surveys (Irish Hydrodata,'Cork dredge spoil disposal site, archaeo-geophysical survey', 1999). No indication of shipwreck were observed in this survey.

In 2013, a multibeam echosounding survey was carried out to identify expanses of areas within the disposal site that consist of exposed bedrock and surface sediments (Irish Hydrodata,'Cork dredge spoil disposal site, impact hypothesis update 2013'). The information was then compared with that from earlier surveys.

In addition, the state-sponsored INFOMAR survey of the seabed by the Geological Survey of Ireland has included the marine disposal area within its survey of the Cork coastline in 2008. That work included multi-beam echosounding and sub-bottom profiling surveys.

The results of this succession of comprehensive and detailed survey work indicates that there is no clear evidence of shipwreck within disposal area. The surveys also indicate that the seabed at the

disposal area consists predominantly of large expanses of exposed bedrock, some of which are associated with cobble spreads, and some of which are in high relief. The UKHO 'obstruction' may in fact be a high-relief exposure of bedrock. There are also expanses of sediment, which both intermixes with the bedrock in places, and which forms its own discrete spreads and channels. The sediment reaches 2m depth in places but is generally in the order of 1m deep.

Comparison of the data sets over time was most robust when examining those from 2008 and 2013, as both data sets were acquired using comparable equipment. Some 272,075m^3 of dredged material was disposed of here between those years. The survey data indicated that there was little or no change in the expanse of sediment on the seabed surface within the dump site.

The impact on this area from the proposed dredging associating with the Ringaskiddy harbour redevelopment project will see further disposal of dredged spoils within the dump site. The dredged quantities will be 215,000m^3, from Ringaskiddy West, and 90,000m^3 from Ringaskiddy East. These quantities are equivalent to those that have been dumped at the site between 2008 and 2013. The former quantities are considered to have resulted in little or no change in the expanse of sediment on the seabed surface. It is concluded in the assessment that the same will be case in the present instance. Consequently the impact assessment from the perspective of cultural heritage is that the impact will be slight to negligible. There is no archaeological reason why the proposed work should not proceed.

There is no requirement for further archaeological work prior to dredging commencing. The physical dredging at Ringaskiddy will be archaeologically monitored as part of the Environmental Commitments submitted at the Oral Hearing (see Chapter 17).

Text for Section 6.7 remains unchanged.

Section 6.8 has been revised as follows;

6.8 Cumulative Effects

Cumulative impacts consider the following projects and proposed projects from a cultural heritage perspective:

- Cobh marina
- Monkstown Marina
- Haulbowline Remediation Project
- Cobh Cruise Berth Upgrade/Mooring Dolphins
- Spike Island Masterplan
- Cobh Second Cruise Berth

The cultural heritage narrative of the lower harbour area is informed by the standing remains of coastal defensive works and related structures. Among the specific projects identified, including Ringaskiddy, the most substantial cultural heritage assets are on the islands of Haulbowline and Spike, where the historic forts and their later developments remain centrally important to the present-day landscapes.

The Haulbowline Remediation Project on Haulbowline Island will be meeting conditions required to preserve the archaeological heritage during construction works, and this can be expected as part of the Spike Island Masterplan as well.

The archaeological potential at all of these project locations also lies in the buried sediments on land and at sea. The potential remains unqualified. To address this issue, and where construction impacts will be significant, the implementation stages of the projects will have comprehensive archaeological monitoring programmes as part of their construction management plans.

Archaeological monitoring that is licensed by the Department of Arts, Heritage and Gaeltacht (DAHG), is the single most useful mitigation when working in locations that do not have visible or known archaeological features in the immediate area, as it safeguards any cultural heritage material that may be discovered as a result of new construction works, and it ensures that such material is recorded and

archived in the most effective manner. Such measures are in fulfilment of requirements set by the National Monuments Section of the DAHG, which are made on the basis of conserving the archaeological heritage of a site and securing the preservation and protection of any remains that may exist within the site.

The cumulative impact of this mitigation strategy across the projects will be to generate a new baseline of information that will inform the wider cultural heritage narrative of Cork Harbour. This impact can be considered a positive long term result.

Text for Section 6.9 remains unaltered.

7.0 LANDSCAPE AND VISUAL

Text for Sections 7.1 to 7.5.6 remains unchanged.

Text for Section 7.5.7 has the following paragraph added.

7.5.7 Construction Phase Impacts

The proposed activities associated with dredging as part of the construction of the Ringaskiddy Port Redevelopment has been included in Chapter 7 of the submitted EIS. The activities required for the transfer of dredged material to the licensed disposal site will be completed by the dredging vessel. The transfer will require the dredged vessel to move back and forth from Ringaskiddy to the licensed site until completion of dredging works. The dredging works will be temporary in duration. There are numerous vessels coming and going from Cork Harbour and the addition of the dredging vessel will not cause any significant landscape or visual impacts.

No significant landscape and visual effects are predicted for the transfer and disposal of dredged material from the proposed Ringaskiddy Port Redevelopment.

The text of Section 7.5.8 is replaced as follows:

7.5.8 Cumulative Impacts

A review of the planning history for the area to establish projects that might have a potential cumulative impact with the proposed Ringaskiddy Port Redevelopment and the proposed dumping at sea. Amongst the permitted projects included in the cumulative assessment are the Monkstown Marina; the five large single wind turbines being developed by Cork Lower Harbour Energy Group; Cobh Marina; Cobh Cruise Berth; and Haulbowline Remediation Project.

Permitted Projects

Monkstown Marina

The permitted scheme includes for a 285 berth marina at the location of the existing marina that has 82 berths and is located on the opposite side of Monkstown Creek from the proposed redevelopment. This area has numerous leisure craft currently berthed and launched from slipways at Monkstown. The proposed redevelopment will be observed from Monkstown in the context of leisure craft in the foreground and there will be little noticeable change to the aspect of views from the Monkstown area with the addition of the new marina. Dredged material will be disposed of at sea but similar vessels and activities take place in the harbour and in-combination visual impacts are not predicted.

Due to the separation distance and the existing use of the wider harbour area for leisure craft there will be no significant cumulative landscape and visual effects.

Cork Lower Harbour Energy Group Single Wind Turbines

The construction of the turbines had commenced at the time of the assessment for the proposed redevelopment and these turbines formed part of the baseline for the landscape and visual impact assessment within the submitted EIS. The turbines have increased the perception of the landscape character in the Ringaskiddy area as an industrialised landscape. The turbines are observed as separate and distinct features from the proposed redevelopment and are more dominant in the wider landscape.

When viewed in combination with the proposed redevelopment it is the turbines that are the tallest and dominant features with no significant cumulative landscape and visual impacts caused by the proposed redevelopment.

Cobh Marina

The permitted scheme includes for a 74 berth marina at Cobh and is located on the opposite side of Cork Harbour from the proposed redevelopment. The permitted scheme is small in scale and at a location which is currently used for leisure craft. No dredging is proposed for this project and there is no potential for in-combination visual impacts for disposal at sea. There is limited potential for in-combination views due to the separation distance between the two sites and within views from Cobh where such in-combination views are possible, it will be the berthed leisure craft in the foreground that are more noticeable that the more distant proposed redevelopment.

No significant cumulative landscape and visual impacts will be caused by the proposed redevelopment.

Cobh Cruise Berth

The permitted scheme is remote from the Ringaskiddy area and not visual linked due to the small scale of the permitted works. No dredging is proposed for this project and there is no potential for in-combination visual impacts for disposal at sea. Cruise liners currently berth at the deepwater quay in Cobh and this will continue to be the case with the permitted scheme.

There will be no significant cumulative landscape and visual impacts caused by the proposed redevelopment due to the separation distance and small scale of the permitted works.

Haulbowline Remediation Project

The permitted remediation project at Haulbowline Island will result in the creation of a new park and recreation facilities that will result in a beneficial landscape and visual impact. No dredging is proposed for this project and there is no potential for in-combination visual impacts for disposal at sea. The project is remote from the proposed Ringaskiddy redevelopment and there is very limited potential for in-combination effects.

Overall no significant cumulative landscape and visual impacts will be caused by the proposed redevelopment.

Planned Projects

With regards to planned projects the following have been assessed; Spike Island Masterplan; Cobh Second Cruise Berth.

Spike Island Masterplan

The Masterplan has considered many options and is broad in its approach requiring more detailed design work. However the most likely area for potential cumulative landscape and visual effect relates to the proposal for a new link between Haulbowline and Spike Islands. This could be created by a causeway or a new bridge. With either option the new crossing point would be remote from the proposed Ringaskiddy redevelopment and with significant land mass and urban development located between the two sites.

Therefore no significant cumulative landscape and visual impacts caused by the proposed redevelopment.

Cobh Second Cruise Berth

Ifa second berth is constructed at Cobh there would be no significant change in the existing landscape and visual context of the Cork Harbour area as cruise liners currently berth at the deepwater quay in Cobh and there will be no significant cumulative landscape and visual impacts caused by the proposed redevelopment due to the separation distance and small scale of the permitted works.

In conclusion no significant landscape and visual cumulative effects are predicted for the combination of any permitted or proposed projects within the vicinity of the proposed Ringaskiddy Port Redevelopment.

Text for Sections 7.6 to 7.7 remains unchanged.

8.0 TRAFFIC & TRANSPORTATION

Text for Sections 8.1 to 8.7 remains unchanged.

Text for sub-section 8.7.4 is revised as follows;

8.7.4 Cumulative Impacts

For the construction phase assessment in 2017, cumulative traffic volumes includes for other permitted construction projects including Monkstown Marina, Cobh Marina, Haulbowline Remediation Project and the proposed N28 Upgrade.

For the operational phase assessment of the proposed redevelopment, cumulative traffic volumes have been included in the predicted traffic levels for future years 2018 and 2033. The same NRA traffic growth figures that were used for the Dunkettle Interchange Assessment have also been used for this traffic assessment. These future traffic levels allow for permitted and proposed projects such as the Monkstown Marina; Cobh Marina; Haulbowline Remediation Project; and Cobh Cruise Berths.

The cumulative traffic volumes do not result in any changes to the predicted impacts in the submitted EIS. The proposed dredging and disposal to a licensed dump site, as part of the Ringaskiddy Port Redevelopment, has no impact on traffic. Further the proposed redevelopment and other permitted and proposed projects are already considered and assessed in the Traffic and Transportation chapter of the EIS.

9.0 NOISE AND VIBRATION

Text remains unchanged for Chapter 9 with the exception of new or amended text in Sections 9.4.2 and 9.5.5.

9.4.2 Predicted Impact of Construction Noise from Proposed Redevelopment

Text below to be inserted after the last paragraph in Section 9.4.2.

Dredging activities associated with the proposed Ringaskiddy Port Redevelopment have been assessed and included in the detailed noise assessment described in Sections 9.4.1 and 9.4.2. There will be a requirement for dredged material from the construction site to be transported to and disposed of at a licensed marine disposal site located to the south east of the entrance to Cork Harbour.

It is estimated that an individual dredging cycle will take approximately 3-4 hours, which incorporates the dredging, transport to and from the disposal site and the disposal activity. On account of the busy nature of the shipping channel between the entrance of Cork Harbour and Ringaskiddy Port, one dredging cycle movement every 3-4 hours along this channel will not generate any significant change to the noise environment in the vicinity of the channel.

On account of the distance between the disposal site and the nearest noise sensitive properties on the coastline facing the disposal site, noise levels from the disposal activities will be below existing background noise levels (i.e. L_{A90}) at these properties and will not generate any significant noise impact at any property.

9.5.5 Cumulative Noise Impacts

Text in Section 9.5.5 of the EIS to be replaced with the text below.

There are a range of projects in the study area that are in different stages of planning/construction and have the potential to influence the noise environment in the vicinity of the proposed redevelopment. These have all been considered in the context of the proposed redevelopment and the potential for cumulative noise impacts at the nearest noise sensitive receptors.

Current or future projects that have the potential to alter the noise environment in the study area include the East Tip Remediation Project at Haulbowline Island, the construction of 5 wind turbines by the Cork Lower Harbour Energy Group, the Spike Island Masterplan, Monkstown Marina, Cobh Marina and Cobh Cruise Berth.

The proposed Monkstown Marina has the potential to generate significant localised noise impacts during the construction phase on account of its proximity to properties along the R610. Section 9.4 demonstrated that there will be no significant construction noise impact at Monkstown as a result of the proposed Ringaskiddy Port Redevelopment and therefore, any cumulative noise impact from both projects should they be constructed at the same time, will be as a result of the construction works at the proposed Monkstown Marina site only.

The baseline survey for the proposed Ringaskiddy Port Redevelopment was completed prior to the construction of the Cork Lower Harbour Energy Group single wind turbines that are now present in the study area. Therefore, a quieter noise environment was recorded against which the proposed Ringaskiddy Port Redevelopment was assessed (i.e. worst-case scenario). The noise sensitive receptors most impacted by the wind turbines are not the same receptors that will be impacted by noise associated with the proposed Ringaskiddy Port Redevelopment. There will be no significant cumulative noise impact from the wind turbines and the proposed Ringaskiddy Port Redevelopment at any of the nearest noise sensitive properties.

The Cobh Marina project is on a smaller scale than that proposed at Monkstown. On account of the nature of the proposed structure, there will be no significant construction phase noise impact from this

project and hence no significant cumulative noise impact from this project in tandem with the proposed Ringaskiddy Port Redevelopment.

On account of the distance between the proposed works at the Cobh Cruise Berth (and the potential Second Cruise Berth) and the proposed development at Ringaskiddy Port, there is no potential for significant cumulative noise impacts at properties adjacent to these projects.

The Haulbowline Remediation Project at Haulbowline Island will generate significant localised noise impacts during the construction phase. If the construction phase for this project were to proceed at the same time as the proposed Ringaskiddy Port Redevelopment project, there is limited potential for significant cumulative noise impacts as there are no properties that are sufficiently close to both projects as to experience such a cumulative impact.

The Spike Island Masterplan is currently being progressed. On account of the distance between Spike Island and Ringaskiddy Port, the number and relative location of receptors between the two sites and the topography between the sites, there is no likelihood of significant cumulative construction phase noise impacts from both sites.

In summary, all of the potential and planned projects in the lower Cork Harbour area have been considered as part of the assessment to determine the potential for cumulative noise impacts associated with the proposed Ringaskiddy Port Redevelopment in tandem with other projects.

It is concluded that there no potential for any significant cumulative noise impacts from the proposed redevelopment in combination with other projects.

10.0 AIR QUALITY & CLIMATE

A new sub-heading (*10.4.1.6*) has been added addressing specifically the impact of dumping at sea.

The second paragraph of text in section 10.8 of the original EIS has been replaced to clarify cumulative impacts.

All other text within Chapter 10 of the original EIS remains unchanged.

10.4.1.6 Dumping at Sea Impact Assessment

This is a new subheading.

The activities required for the transfer of dredged material to the licensed disposal site will be completed by the dredging vessel. The transfer will require the dredged vessel to move back and forth from Ringaskiddy to the licensed site until completion of dredging works. Dredging and disposal operations will be very temporary in duration and are expected to be undertaken within 20 days.

There are numerous vessels coming and going from Cork Harbour and the addition of the dredging vessel will not cause any significant air quality (including odour) & climate impacts.

In conclusion, no significant air quality (including odour) & climate impacts effects are predicted from the transfer and disposal of dredged material for the proposed Ringaskiddy Port Redevelopment whether 'in combination' or otherwise as part of the proposed development.

10.8 Cumulative Impacts

The following text is the replacement text for the second paragraph of text in section 10.8 of the original EIS:

Cumulative impacts may arise from the combined effects of a number of different projects, in combination with the project being assessed, on a single receptor/resource. This can include multiple impacts of the same or similar type from a number of projects upon the same receptor/resource.

A review took place of the planning history for the area to establish projects that might have a potential cumulative impact with the proposed Ringaskiddy Port Redevelopment. Amongst the permitted projects included in the cumulative assessment were the Monkstown Marina; the five large single wind turbines being developed by Cork Lower Harbour Energy Group; Cobh Marina; Cobh Cruise Berth; and Haulbowline Remediation Project. With regards to planned projects the following have been assessed; Spike Island Masterplan; a potential Cobh Second Cruise Berth.

The air quality and climate assessment has taken into consideration cumulative impacts that takes account of all proposed developments or those that are planned. The contribution of airborne contaminants from site vehicles and plant during the construction phase to local air quality is predicted to be negligible, and effects transient. The cumulative impacts from the permitted projects (Monkstown Marina; the five large single wind turbines being developed by Cork Lower Harbour Energy Group; Cobh Marina; Cobh Cruise Berth; and Haulbowline Remediation Project) and the planned projects (Spike Island Masterplan and Cobh Second Cruise Berth) on air quality and climate are predicted to be negligible.

A range of projects have been taken into consideration as part of the cumulative assessment.

In conclusion no significant air quality and climate cumulative effects were predicted for the combination of any permitted or proposed projects within the vicinity of the proposed Ringaskiddy Port Redevelopment.

11.0 SOILS AND GEOLOGY

Text for Sections 11.1 to 11.4 remains unchanged.

The following text has been added to subsection 11.4.3.

11.4.3 Cumulative Impacts

A range of permitted projects; Monkstown Marina; Cobh Marina; Cobh Cruise Berth and Haulbowline Remediation Project; and proposed projects; IMERC Masterplan; Spike Island Masterplan; Cruise Second Cruise Berth; has been taken into consideration as part of the cumulative assessment. When these projects have been considered as part of this assessment, no significant cumulative effects are predicted due to the separation distance between the proposed Ringaskiddy Port Redevelopment and the permitted and proposed projects that limits potential pathways and also due to the construction and operational phase mitigation measures for the proposed Ringaskiddy Port Redevelopment, as submitted to the Oral Hearing.

Text for Section 11.5 and 11.6 remains unchanged.

12.0 COASTAL PROCESSES

Text for Sections 12.1 to 12.3 remains unchanged.

12.3 Sediment Modelling and Water Quality

The following Section 12.3.2 is inserted after Section 12.3.1 of the original EIS.

12.3.2 Dumping at Sea

The impact of the proposed 2007 Oyster Bank Strategic Infrastructure Development (Ref: 04.PA0003) on the hydrodynamic regime of the dredge material disposal area was assessed using computational modelling techniques based on the MIKE 21 suite of coastal process modelling software developed by the Danish Hydraulics Institute.

That model was run on the basis of a greater quantum (385,000m^3) of dredge material than is currently proposed (300,000m^3), but where the material in Oyster Bank exhibits similar characteristics to the material in Ringaskiddy Basin. The authors of the 2007 EIS Coastal Processes chapter are the same authors of the 2014 Ringaskiddy Port Redevelopment EIS Coastal Processes chapter. We can confirm that the model used then is wholly applicable to the current proposal to dispose at sea of material dredged in Ringaskiddy Basin. We can confirm that disposal patterns of disposed dredge material are identical for the present project.

The model accurately simulated the tidal flows and water level variations in the area. The tidal model was run for a period from late February to early April 2005 so that the hydrodynamic data would include a large equinoctial spring tide. The results of those simulations are shown below in terms of the deposition footprint on the seabed and the maximum concentration envelope. The maximum concentration envelope shows the peak value that occurs at any time during the simulation at the particular point in the model area and is generated in the model as the plume from the dredged material disposal washes over the area in response to the varying tidal flow conditions. The concentrations shown in the figures will therefore not be experienced simultaneously.

Figure 12.48 shows the net deposition footprint on the seabed for the disposal of the 385,000 m^3 of material from the dredging. The deposition thickness on the seabed in millimetres may be estimated by dividing the kg/m^2 value by 1.5. It will be noted that the thickness of the deposited sediment outside the dump site area is generally less than about 50 mm and that no measurable amount of material is deposited further than about 4 kilometres from the centre of the site.

Figure 12.49 show the maximum instantaneous suspended sediment concentration envelope averaged over the whole of the water column that occurs at any time during the dumping operations. Figure 12.50 shows maximum instantaneous suspended sediment concentration envelope in the top 10m of the water column that occurs at any time during the dumping operations. It can be seen from the maximum suspended sediment concentration figures that the plume from the dumping of the dredge material, even at very low concentration values, does not extend a great distance from the disposal site.

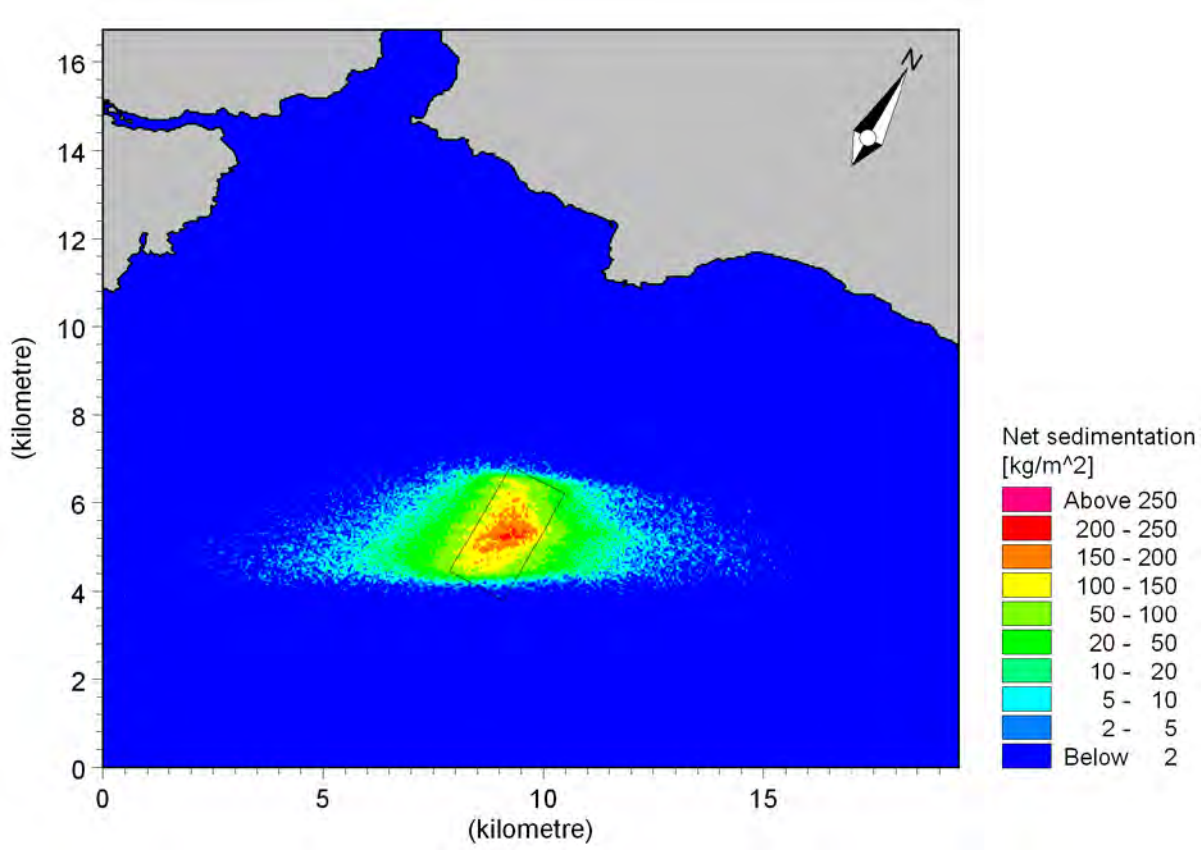


Figure 12.48 Deposition Footprint for dumping of 385,000 m^3 of sediment from Oyster Bank and related area

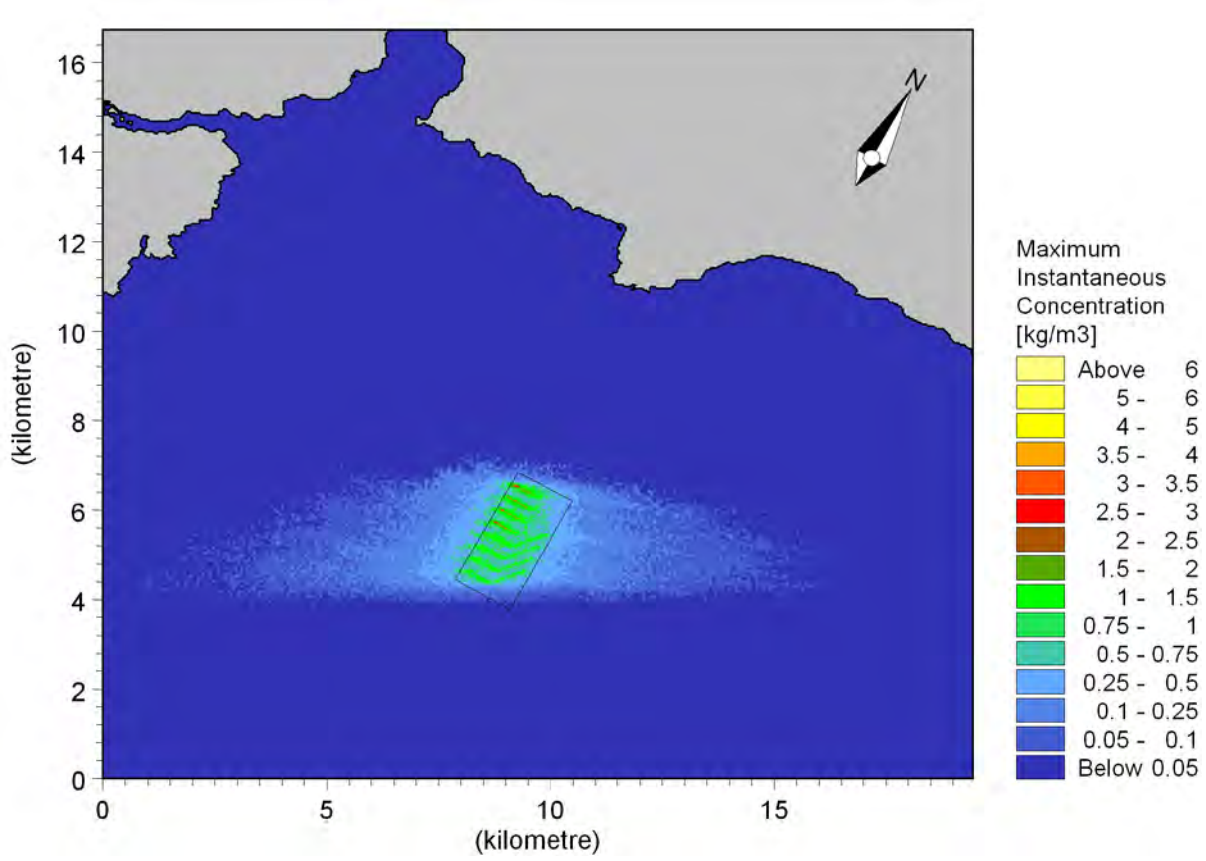


Figure 12.49 Maximum Concentration Contours (instantaneous) of suspended sediment averaged over the of water column dumping of 385,000 m^3 of sediment from Oyster Bank and related area

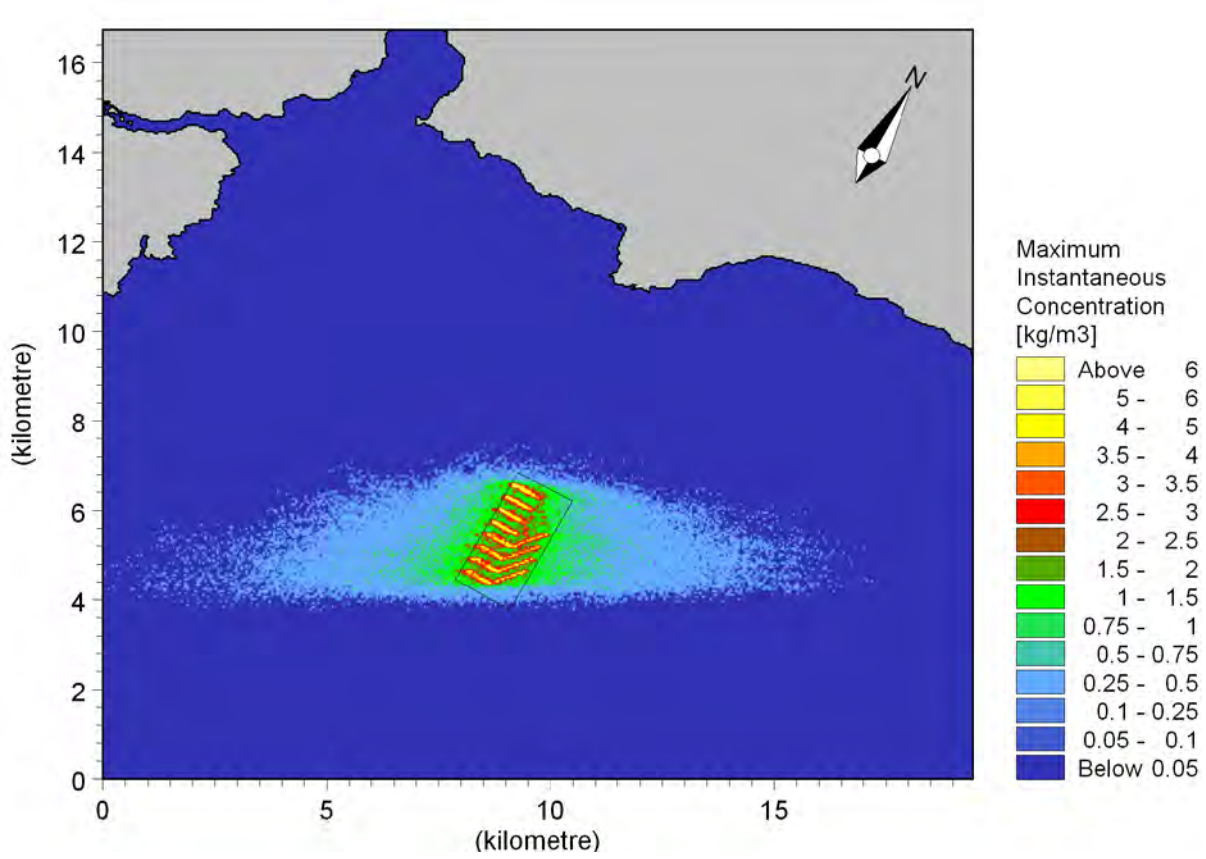


Figure 12.50 Maximum Concentration (instantaneous) of suspended sediment in top 10 metres of water column dumping of 385,000 m^3 of sediment from Oyster Bank and related area

12.4 Cumulative Effects

Add new text at the end of this section.

The Cove Sailing Club was granted planning permission for a 74 berth marina located at Whitepoint, Cobh.

As part of the planning process a hydrodynamic study was undertaken by Cronin Millar Consulting Engineers in January 2010 on behalf of the Cove Sailing Club. The following conclusions are reproduced from this study:

a) It is envisaged that the proposed marina development will not impact on the flow regime in Cork Harbour or at the site of the proposed marina.

b) The proposed marina site is very sheltered from offshore wave conditions (swell). It is anticipated that offshore swell will have negligible (if any) affect on the development.

c) The marina will be subject to locally generated wind waves. Highest waves are generated by winds blowing from the East. A design incident wave height of 1.1m with a corresponding wave period of 3.63sec was calculated for the site. It was estimated that wave transformations (diffraction, refraction and shoaling) will be negligible.

d) A floating concrete breakwater is proposed as wave protection to the marina. The wave characteristics for the marina have been calculated for a 1 in 50 year wind event. The design significant wave (1.1m height) is attenuated by the breakwater resulting in a transmitted wave height of 0.385m. This wave height satisfies the recommended upper limit of 0.300 to 0.400m wave height in a marina.

e) Dredging will not be required for this marina development, therefore there will not be any impact on the natural sediments regimes.

In reference to point a) if the development will not have an impact of the flow regime then there cannot be the potential for in combination effects with the proposed Ringaskiddy redevelopment. Likewise, as outlined in point e) if there is no dredging works relating to the marina project there cannot be any in combination effects on suspended sediment levels.

No further relevant plans or projects were identified, additional to those outlined above and in the EIS document which include coastal process alteration or dredging.

12.5 Summary and Conclusions

Replace third paragraph with the following text.

The study of the dispersion of the marine disposal of dredge material at a site to the south east of Cork Harbour has been undertaken to investigate the fate of the material dredged from the proposed development at Oyster Bank and related areas. In the study 385,000 m^3 of material was deposited over the shortest possible time, i.e. 1 load every 205 minutes for 15 days, to give the highest possible suspended sediment concentrations in the water column.

The results of the studies have been shown in terms of the footprint of the deposited material on the sea bed together with the maximum concentration envelopes for the whole of the water column and for the top 10 metres of the water column. The results of the study of the proposed sea disposal of the dredge material from the three sites show that the depth of the deposited material which is likely to deposited outside the dump site area will be less than 50 mm and that no measurable amounts of material will be deposited further away than about 4 kilometres from the centre of the site.

Proposed and permitted marine projects adjacent to the Ringaskiddy redevelopment have been considered in respect of cumulative impacts. There is a proposed marina at Monkstown and a proposed marina at Whitepoint, Cobh, both of which have been shown to have no significant impact on the coastal processes and there is a remedial operation planned for the eastern end of Haulbowline Island. The impact from both projects is not anticipated to cause a cumulative effect in conjunction with the proposed redevelopment.

13.0 WATER ENVIRONMENT

13.2.1.1 Study Area

The following two paragraphs are added to Section 13.2.1.1 as the fifth and sixth paragraphs.

The location of the proposed dump site lies partly within the Western Celtic Sea coastal water body (IE_SW_010_0000) in the South Western River Basin District (SWRBD). This large coastal water body is fed by numerous coastal and transitional water bodies along the south coast of Ireland, The water body is a large over 500 km^2 in area, and extends along the southern coastline from Brow Head County Cork to Ram Head, County Waterford.

In terms of the impact assessment the Western Celtic Sea water body is considered to be a feature of extremely high importance based on the evaluation of significance set out in the original EIS. The significance of the water body is extremely high as sections of the water body are protected by EU legislation, i.e. Natura 2000 sites (European Sites) designated under the Birds Directive (2009/147/EC).

13.2.2.1 WFD Classification

The following paragraph is added to Section 13.2.2.1 of the EIS as the seventh paragraph.

The Western Celtic Sea coastal water body (IE_SW_010_0000) has not been assigned a classification for ecological or chemical status under the Water Framework Directive as the coastal and estuarine monitoring programmes have yet to be fully implemented. The completion of the classification for coastal waters will be completed as soon as the Environmental protection Agency deems sufficient monitoring data is available (South Western River Basin Management Plan (2009-2015), 2010). Based on a precautionary approach and recognising the location of Natura 2000 sites and shellfish designated waters in the water bodies discharging to the Western Celtic Sea coastal water body it has been assumed that the status for this water body is high.

13.2.2.2 WFD Objectives

The following paragraph is added to Section 13.2.2.2 of the EIS as the third paragraph.

As the classification of the Western Celtic Sea water body has not yet been completed a WFD objective has not been established. However on the assumption that the status is high it is a requirement to prevent the deterioration of the status

13.2.4.1 Construction Phase Impacts

The following paragraphs are added to Section 13.2.4.1 of the EIS as a new subsection after the subsection on Suspended Sediment.

Dumping at Sea of dredge material

The Marine Institute provided details of 12 sampling locations where they requested an extensive suite of parameters for analysis of the sediment including heaving metals. As outlined in the original EIS and clarified in the Oral Hearing the results of this analysis demonstrated that the sediments were uncontaminated and therefore they can be considered as suitable for disposal at sea.

Considering the limited dispersion of the dredged sediment from the proposed dump site as outlined in the coastal processes chapter of this addendum and the uncontaminated nature of the sediment, the dumping at sea will not have a significant impact on the chemical status of the Western Celtic Sea water body or on those physic-chemical elements supporting ecological status.

In terms of the biological elements that contribute to ecological status the marine ecology chapter has concluded that there will only be a minor negative impact that will be temporary in nature. Given that the majority of the dump site is located outside the Western Celtic Sea coastal water body and the

minor nature of the impact which will be confined to the footprint of the dumpsite and the immediate adjoining areas this will not result in an overall deterioration in the ecological status of the water body.

When assessing the ecological status of a water body the protected area status should also be considered Given the uncontaminated nature of the dredged sediment and the limited dispersion within the Western Celtic Sea water body there is no potential for impact on the protected areas in adjacent water bodies such as the Ballycotton Bay SPA, Cork Harbour SPA or Great Island Channel SAC.

Taking this into consideration the impact on the water quality, ecological and chemical status of the Western Celtic Sea water body and adjoining water bodies is considered to be negligible and there will be no risk of deterioration in status therefore the WFD objective for this water body will not be compromised.

Oil and Chemicals

The following paragraph is added to the subsection on "*Oil and Chemicals*" under Section 13.2.4.1 of the EIS as the third paragraph.

Pollution from oils, diesels or chemicals from the barge used to transport the dredge material to the dump site during the dumping at sea operations is also a potential impact. Any fuel spillages would potentially have adverse impacts on water quality in the area depending on the volumes released. However with the mitigation measures in place , as proposed in Chapter 17 of the Environmental Commitments and updated at the Oral Hearing, the risk of accidental spillage of oil and diesel will be mitigated and the potential impact is considered to be negligible.

13.2.5 WFD Assessment

The following paragraph is added to the subsection on the "*Achievement of WFD Objectives"* under Section 13.2.5 of the EIS as the second paragraph.

The assessment of the dumping at sea activities will not alter the conclusion of the WFD assessment.

The uncontaminated nature of the sediments and the short term impact on the biological elements of ecological status will not cause a deterioration in the ecological or chemical status of the relevant water bodies.

13.2.8 Cumulative Impacts affecting Water Quality

The following paragraphs replace those under Section 13.2.8 of the EIS".

An assessment of the cumulative impact of the following projects has been undertaken in the context of the Ringaskiddy Port Redevelopment and the proposed dumping at sea.

- *Cork Lower Harbour Energy Group*
- *Hammond Lane Metal Company*
- *Haulbowline Remediation Project, Haulbowline Island*
- *Monkstown Marina*
- *Port of Cork Maintenance Dredging*
- *Cobh Marina*
- *Cobh Cruise Berth Upgrade/Mooring Dolphins*
- *Spike Island Masterplan*

Cork Lower Harbour Energy Group

There are three applications approved for five wind turbines to be developed by the Cork Lower Harbour Energy Group. The structures will be developed on existing industrial zones land within the facilities of a group of healthcare manufacturing sites in the Ringaskiddy and Currrabinny areas. Where available the EIS for the developments have been reviewed to establish the water quality impacts. These developments do not require dredging or dumping at sea. Given the nature of the

development and the proposed programme of mitigation to be put in place it has been concluded that there will be no significant cumulative impact from these developments

Hammond Lane Metal Company
Planning permission was granted in 2012 for demolition, new build, upgraded facilities, new processing plant etc at the Hammond Lane Metal Company located adjacent to the N28 opposite the proposed eastern entrance to Port lands at Ringaskiddy. The EIS prepared for this project was reviewed and there is no potential for cumulative impact and there is no dredging or dumping at sea proposals.

Haulbowline Remediation Project, Haulbowline Island
The primary objective of this project is to remediate the East Tip thereby ensuring that potential risks to humans and the wider environment are minimised. It is proposed the waste at the site will be contained by constructing an engineered capping system on top of the waste and a perimeter engineered structure (PES) around the waste body. . The project additionally seeks to widen the access road and construct a slipway and floating pontoon. The Environmental Impact Statement prepared in support of the application concludes that there will be negligible impacts on the hydrogeology with the mitigation proposed during the construction phase. During the operational stages the water quality impacts are positive with the PES reducing groundwater discharge from the site to the marine waters in Cork Harbour. The PES will require some excavation works but no dredging will be proposed nor is there any need for dumping at sea. There is no potential for cumulative impacts with the proposed Ringaskiddy Port Redevelopment.

Monkstown Marina
The marina comprises car-parking, retail, office and landscaping, with a requirement to dredge part of the seabed (70,000 m^3) in the shallower parts of the marina and in a band paralleling the shore to enable safe access by craft during all states of the tide. The EIS prepared for the development outlines the suite of mitigation measures proposed to address water quality impact and concludes there will be no significant impact. The volume of dredge material from the Monkstown Marina and the proposed Ringaskiddy Port Redevelopment is slightly less than that modelled for the Oyster Bank Strategic Infrastructure Development (Ref: 04.PA0003) as outlined in the coastal processes chapter.

Taking the limited dispersion as outlined in this modelling exercise and the uncontaminated nature of the deposits from Ringaskiddy the potential for cumulative effects on water quality and the coastal water bodies in the vicinity is not significant.

Port of Cork Maintenance Dredging
The coastal process modelling has concluded that the redevelopment of the Port will not change the existing maintenance dredging requirements in Cork Harbour. The habitats directive screening statement prepared for the latest maintenance dredging application (Port of Cork, 2014) has also concluded that the current maintenance dredging regime and disposal will not have a significant impact on water quality.

Therefore based on the assessment of the capital dredging works proposed for the Port redevelopment and the maintenance dredging assessment, no cumulative impacts are predicted.

Cobh Marina
There is no dredging works relating to the marina project and there cannot be any cumulative effects on suspended sediment levels either within the Cork Harbour or the dump site in the Western Celtic Sea coastal water body. The documentation for the development outlines that an Environmental Management Plan will be put in place for the development which will ensure that the potential for any pollution of the marine environment will be avoided. In addition the marina will operate as a “blue flag marina” where a berth holder’s hand book will be provided which informs of all guidelines in relation to health safety and the environment. No cumulative impacts are predicted in combination with the proposed Ringaskiddy Port Redevelopment.

Cobh Cruise Berth Upgrade/Mooring Dolphins
For the permitted works at Cobh Cruise Berth there is no dredging proposed with this activity and the works will be undertaken in accordance with the CIRIA Guideline C584 Coastal and Marine Environmental Site Guide. Materials arising from the piling operations will not be allowed to enter the

aquatic environment and will be removed from site to a licensed facility. Environmental best practice in relation to fuel and chemical handling, accidental spillages and the adherence to the Coastal and Marine Environmental Site Guide as outlined in the further information submitted as part of the planning documentation will ensure that there will be no impact on water quality and therefore there will be no cumulative impacts with the Ringaskiddy Port Redevelopment.

Spike Island Masterplan
The Masterplan outlines a number of objectives in relation to sustainable water management. These include:

- Sustainable urban drainage systems
- Rainwater harvesting and use of grey water
- Reduced water usage by using efficient fittings and appliances
- Design integrated wastewater treatment systems encouraging recycling of nutrients and water as well as minimal discharge to natural water bodies (water table, ocean and surface water).

This sustainable use of water will ensure minimal impact on the water environment in Cork Harbour and therefore there is no potential for cumulative impacts with the proposed Ringaskiddy Port Redevelopment.

Overall, the impacts on water quality from Ringaskiddy Port Redevelopment and the dumping at sea activities in combination with the above permitted and proposed projects does not change the conclusion of the cumulative effects in the original EIS.

14.0 MARINE ECOLOGY

[The text under Sections 14.1.1 to 14.1.3 remains unchanged.]

14.1.4 Impact Assessment

[All text in Section 14.1.4 remains unchanged. Add new text after last paragraph.]

Impact of dumping at sea
The current licensed dumpsite site is approximately 4km^2 in area and is situated 4.5 km south of Power Head and 7.5 km south east of Roche's Point at the entrance to Cork Harbour. It has been in use since 1996, however, it formed the eastern half of a dump site that had been in use since 1978 of dredge spoil disposal. The current reduced-size dump has received considerable amounts of dredge spoil since 1996, initially every 2 years and in recent times every 3 years. Most recently in late 2014 the volume of spoil for which a license was granted was 352,000m^3. On the 4 previous occasions, the volume of spoil dumped was as follows –

- 2011 = 272,025m^3
- 2008 = 253,848m^3
- 2005 = 133,979m^3
- 2003 = 441,931m^3

Source: Port of Cork Maintenance Dredging Habitats Directive Assessment, Screening Statement (RPS, 2014)

These figures indicate that the disposal at sea volumes proposed from the Ringaskiddy Port Redevelopment will not mark a departure from the regular disposal activity at this site over the past decade.

A number of previous surveys at the site have shown that much of the site area comprises exposed bedrock rock, interspersed with areas of sediment making up the remainder of the site. Cobbles and boulders are also very common. It's exposure to the Atlantic with huge fetches from the south east, south and south west means that it susceptible to storm surges and this combined with tidal currents combine to make it a dynamic site from which sediment rapidly disperses into the surrounding area. Such sites are generally the fastest to recover from disturbance to their benthic communities following dredge spoil disposal.

In 2004 the dumpsite site was surveyed using a drop-down video camera and benthic grab samples (RPS, 2007). This confirmed that the bottom comprised a mosaic of habitat types dominated by exposed bedrock and coarse substrate (cobble and boulders) with large patches of sandy mud and muddy gravel. Furthermore, habitats adjoining the site to the east, west and north were of a similar mix.

The year prior to the 2004 survey, 441,931m^3 of dredge spoil had been disposed at the site and the imagery in the 2004 survey suggested that layers of silt and remained on and between the bedrock in places. Nevertheless, identifiable fauna e.g. Devonshire cup corals (*Caryophyllia smithii*), urchins (*Echinus esculentus*), starfish and brittle stars along with encrusting species including bryozoans, hydroids and sponges were frequently encountered on rock outcrops, cobbles and boulders within and adjoining the site. In sedimentary areas of sandy mud and gravel, crabs were frequently noted. These areas also had visible infaunal burrows. A range of fish species including wrasse and gadoids were noted in the camera survey also. The grab survey in and adjoining the site revealed a fauna dominated by polychaete worms and bivalve molluscs with an average of 24 different families represented across the sampling sites. A typical indicator of disturbed organic-rich sediments, the polychaete worm *Capitella capitata*, was present in elevated numbers at just one site toward the centre of the disposal area and this was thought possibly to relate to the disposal activities of the previous year.

It is important to note that the disposal site, in common with all sites which regularly receive dredge spoil undergoes regular 2-3 year cycles of disposal followed by an intervening period of 2-3 years in which recovery can take place. Immediately after the disposal, areas of rock and sediment which receive deep cover of disposed sediment will suffer a drop in the biomass and diversity of their benthic communities followed by a recovery period which will last until the next scheduled disposal event, during which the deposited layers of sediment will disperse aided by tidal currents and storm evens and be

incorporated into the surrounding areas of fine sediments. During this period the site will be recolonised by fauna which survive the disposal in patches not completely covered or only thinly covered, and by seasonal settlement of new recruits from the overlying plankton supplied by the same species in the surrounding non-impacted benthic habitats. The 2004 dump site survey (RPS, 2007) which was carried out a year after a typical disposal event, would suggest that even in this short time interval, the site shows many signs of being a fully functional benthic ecosystem, albeit still in a state of recovery. It is expected that the dumpsite will react in a very similar way to the disposal of the 300,000m^3 associated with Ringaskiddy Port Redevelopment. In this respect it is important to note that this sediment carries a very low contaminant burden, a factor which should reduce its impact and improve the rate of recovery.

Overall, the impact on the local benthic ecology of the site is assessed as being minor, negative and temporary and confined mainly to the footprint of the dumpsite and the immediate adjoining areas.

14.2 FISHERIES

[The text under headings 14.2.1 to 14.3.3 remains unchanged.]

14.2.4 Impact Assessment

All text in Section 14.2.4.1 remains unchanged. Add new text at end of Section 14.2.4.2.

Impact of dumping at sea
Modelling of a very similar disposal volume (385,000 m^3) at the dumpsite undertaken in 2007 by RPS (refer to Chapter 12) included a simulation of suspended solids in the water column resulting from the disposal exercise. This indicated that within the upper water column and close to the dredger, very high suspended solids levels (2,000-5,000 mg/l) were estimated to occur which then rapidly dissipate away from the dredger disposal track falling to hundreds of mg/l toward the edges of the box and beyond (Refer to Figures 12.49 and 12.50 of Coastal Processes chapter). These simulations however present the worst case because they give the maximum instantaneous concentrations across the whole dumping period but in reality each dumping event will be associated with a unique plume which while it will give rise to suspended solids within these ranges they will only persist over a few hours and within a much more restricted area, with the highest concentrations persisting for the least time. That notwithstanding, fish and especially shoaling pelagic species such as herring or sprat would likely avoid such plumes in the area in and around the dump site if they were present in the area during the proposed dumping period, which may run to 20 days. Demersal and benthic species such a pollock and wrasse would also likely avoid these plumes and during the 3-weeks disposal period. Overall fish biomass in the immediate area of the dumpsite may be reduced. However, within hours or days of the cessation of disposal the suspended solids levels will rapidly decline to background levels and cease to cause avoidance reactions in fish. In this regard therefore the impact of the disposal on pelagic and demersal species is expected to be minor and consist of temporary avoidance of the area at the time.

The current state of commercial fishing activity at the disposal site is unknown. However the rocky nature of the substrate means that trawling could not be safely undertaken at the site. Potting or bottom netting could be undertaken there but it is extremely unlikely that fishermen would let static gear at this site during periods of disposal as their gear would be in danger of being smothered by spoil. Outside of the very short disposal periods fishermen would be unlikely to use the site (given the distance offshore) unless it proved a more productive area than more easily accessible inshore sites for target species such as crab, lobster and demersal fish.

In conclusion, given the long history of the sites' use as a disposal area, fishermen will have adapted their fishing practice at the site to these periodic 2-3 year cycles of disturbance, either avoiding the site entirely or concentrating in periods outside of the dumping and early recovery phases.

Remainder of Section 14.2.4 is unchanged.

14.2.5 Mitigation

All text remains the same.

Insert new section before 14.2.6 Residual Impacts

14.2.6 Cumulative Impacts

Other approved development in the area has been considered for potential to result in cumulative impacts with the proposed Ringaskiddy Port Redevelopment.

Monkstown Marina development is for a 285 berth marina at Monkstown overlapping the footprint of the existing 82 berth marina. The proposed new marina includes both foreshore reclamation and dredging. The area to be reclaimed comprises intertidal and subtidal components which will be used for car parking and marina buildings. The actual areal extent of the reclamation isn't given in the document but was estimated based on drawings in the EIS at approximately 1.25ha. As part of the marina project a total 70,000m^3 of dredge material will be removed from the site to facilitate mooring vessels of various drafts. The coarser portion of this material will be used in the reclamation with the balance of finer material being disposed of at the same licensed dumpsite as would be used for Ringaskiddy Port Redevelopment. The marina EIS concludes that the loss of habitat associated with the development will be minor because of the widespread occurrence of similar habitats in Cork Harbour. It also indicates that the impact will be partly offset by the building of a rock armour perimeter around the seaward side of the reclamation area, which would be quickly colonised by a broad range of marine species.

A proposed marina development in Monkstown in Cork Harbour (Planning No. 089317) which has been granted permission will require the disposal of up to 70,000 m^3 of dredge spoil. This volume of spoil, even when added to the 300,000m^3 arising from the proposed Ringaskiddy redevelopment remains within the range of disposal volumes that have been placed on the dumpsite over the decades. Furthermore it is it is also accommodated within the volume modelled by RPS previously i.e. 385,000m^3.

Remediation of the East Tip on Haulbowline Island has been granted permission by An Bord Pleanála and more recently has been granted a waste license by the EPA. The aspect of that project that might have cumulative impacts was adjudged to be the construction of a PES or Perimeter Engineered Structure which is a narrow berm or trench around the outer edge of the tip designed to radically reduce exchange of water between the tip and the waters of the harbour and vice versa. The PES will be faced with rock armour on its external side to prevent it being eroded by wave action. This structure will be built along the eastern foreshore and will impinge slightly on the intertidal area along the eastern side perimeter of the Haulbowline Island. The exact area of the encroachment isn't given in the EIS but can be roughly estimated at 1 to 2 hectares based on a perimeter length of about 800m and a base width of 15-25m. In this particular case the fact that the width of shore affected is narrow and the that the rock armour facing will be rapidly re-colonised by marine life and provide a more stable and potentially less contaminated environment locally, means that the impact of that development will be minor, possibly neutral/positive on benthic habitats.

In summary, the cumulative impacts of the Monkstown Marina, the East Tip remediation and the current proposed redevelopment at Ringaskiddy and Paddy's Point are considered overall to be minor negative, in the context of the benthic marine habitats of Cork Harbour. The same conclusion can be drawn regarding wild fisheries. In terms of commercial fisheries, the Monkstown Marina EIS states that no commercial fishing is undertaken in the footprint of that development, while the East Tip documents indicate that all residual impacts on recreational and commercial fishing are likely to be negligible and temporary, therefore no cumulative impacts are anticipated between these two projects and that proposed for Ringaskiddy.

Two other developments, a 74-berth marina at White Point in Cobh (permission granted in 2011) and proposed additional moorings for Cruise Liners at Cobh (under construction) are not considered likely to have any cumulative or in-combination adverse impacts with the proposed Ringaskiddy development. In the case of the new marina, there would be no habitat reclamation involved and no dredging, with the proposed floating pontoon held in place using a chain and anchor system. Furthermore many of the berth holders will be existing swing mooring users at the site. In this regard there will be no significant intensification of berth numbers in Cork Harbour. In the case of the Cobh liner terminal mooring

upgrade, there will be no habitat reclamation required for the new mooring dolphins and no dredging, so that no change to the local habitats or their ecology is anticipated.

Subsequent Section on Residual Impacts (14.2.6) to be renumbered as 14.2.7, but text remains the same.

14.3 MARINE MAMMALS

All text in Sections 14.3.1 to 14.3.4 remains the same.

14.3.5 Impact Assessment

All text in Sections 14.3.5.1 and 14.3.5.2 remains the same. Insert new text at end of Section 14.3.5.2.

Dumping at Sea

A marine mammal risk assessment[1] was prepared in March 2014 (IWDG, 2014) and submitted to the Environmental Protection Agency by Port of Cork as part of a Dumping at Sea application for maintenance dredging. That risk assessment provided the following:

- A baseline description of the presence of seals and cetaceans using the waters of Cork Harbour and surrounding the licensed disposal site.
- An assessment of the background noise levels currently operating within Cork Harbour and at the Dump Site on a regular basis through shipping.
- Scientifically supported consideration of the potential impacts from the operation of the dredger both while dredging, while travelling to the dump site and while undertaking dumping operations in terms of perceived noise levels and the potential disturbance impact upon seals and cetaceans.

That marine mammal risk assessment considered the proposal to dump 1,136,000 m^3 of dredge material from Cork Harbour over the next 7 years up to 2020; and specifically including 352,000 m^3 of material in 2014. Ringaskiddy Port Redevelopment requires disposal of 300,000 m^3 of dredge material. The IWDG report is summarised here as it is wholly applicable to the present request from An Bord Pleanála to consider the environmental effects of dumping at sea.

NPWS (2014) provides guidelines on mitigating the impact of sound sources on marine mammals, including from dredging activity. Dredging is defined as "*the excavation of sand, gravel, loose rock and other material from the seabed*". The concern for dredge activities is due to the potential of the operation to produce noise sources up to 190 dB re 1 µPa and at frequencies which can overlap with some marine mammal hearing and therefore has the potential to impact and disturb these species (NPWS, 2014).

Sound produced from dredging has the potential to impact on aquatic life and it is assumed that most of these impacts would concern disruption of communication due to masking or alteration of behaviour patterns. However, cumulative and long-term exposure leading to TTS has to be considered for marine mammals, but PTS or other auditory injuries are unlikely. Previous studies on sound production by TSHDs in silt/mud substrates have found that maximum source levels from different activities associated with TSHD dredging (including the dredging process, transit to dump site, placement, pumping and rainbowing) were very similar with dredging itself not producing louder sounds than those produced by the dredger during transit (De Jong *et al*., 2010). Therefore marine mammals occurring at the site over the durations of the works will be exposed to sound equivalent to an additional ship in the area. Given that the dump site is adjacent to one of the busiest shipping lanes in coastal Irish waters, marine mammals frequenting the site will be well accustomed to shipping noise.

[1] Available at http://www.epa.ie/licences/lic_eDMS/090151b2804e2f34.pdf

In summary, the presence of an additional vessel and associated noise, is extremely unlikely to have significant impact. During dredging, and dumping at the spoil grounds, the dredge vessel moves slowly between 0-3 knots, making the risk of collision extremely unlikely.

Renumber Sections 14.3.5.3 and 14.3.5.4

14.3.6 Cumulative Impacts

Replace with the following text

No cumulative impacts are expected to occur between the proposed Ringaskiddy Port Redevelopment and associated disposal of dredge material and the development of a marina at Monkstown, a marina at White Point, new cruise berth moorings at Cobh or the capping of a spoil heap at the East Tip Remediation Project on Haulbowline Island. The Natura Impact Statements prepared for the Monkstown Marina, Haulbowline Remediation project, White Point Marina and Cobh Cruise Berth developments do not predict significant effects upon marine mammals. In that regard, the non-significant effects of this project will not act in combination or cumulatively with the effects of those projects. No dredging or dumping at sea is proposed for the White Point Marina and Cobh Cruise Berth projects. The scale and distance of these marina and berthing developments and the nature of the Haulbowline development are not considered to result in cumulative effects.

The remainder of the chapter is unchanged.

15.0 TERRESTRIAL ECOLOGY & ORNITHOLOGY

Text for Sections 15.1 and 15.2 remains unchanged.

15.3 Baseline

Revise Section 15.3.1.1 with the following text.

15.3.1.1 European sites

The proposed development does not directly impinge upon any Natura 2000 sites but lies within 100m of Cork Harbour SPA [Site Code: IE0004030] and within 5km of The Great Island Channel SAC [Site Code: IE0001058]. The next nearest Natura 2000 site is Ballycotton Bay SPA [Site Code: IE0004022], located over 15km from the proposed disposal at sea site and 26km from Paddy's Point.

Cork Harbour SPA [Site Code: IE0004030]
Cork Harbour SPA is located approx 60m to the west of the proposed redevelopment footprint at its nearest point, being the base of the breakwater where it meets the ADM Jetty. The main breakwater arm is 125m northwest of the proposed DWB quay wall extension.

Cork Harbour qualifies for designation under the Birds Directive by regularly supporting over 20,000 waterbirds including internationally important populations of wintering Black-tailed Godwit *Limosa limosa* and Redshank *Tringa totanus* along with nationally important wintering populations of Little Grebe *Tachybaptus ruficollis*, Great Crested Grebe *Podiceps cristatus*, Cormorant *Phalacrocorax carbo*, Grey Heron *Ardea cinerea*, Shelduck *Tadorna tadorna*, Wigeon *Anas penelops*, Teal *Anas crecca*, Pintail *Anas acuta*, Shoveler *Anas clypeata*, Red-breasted Merganser *Mergus serrator*, Oystercatcher *Haematopus*, Golden Plover *Pluvialis apricaria*, Grey Plover *Pluvialis squatarola*, Lapwing *Vanellus vanellus*, Dunlin *Calidris alpina*, Bar-tailed Godwit *Limosa laponica*, Curlew *Numenius arquata*, Black-headed Gull *Larus ridibundus*, Common Gull *Larus canus* and Lesser Black-backed Gull *Larus fuscus*. The site also qualifies for designation by regularly supporting a nationally important breeding population of Common Tern *Sterna hirundo*.

Ballycotton Bay SPA [Site Code: IE004022]
Ballycotton Bay SPA is located 15.2km northeast of the disposal at sea site, and 26km around the coastline from Paddy's Point. The site is an east-facing coastal complex. The site comprises two sheltered inlets which receive the flows of several small rivers. The principal habitat within the site is inter-tidal sand and mudflats. The inter-tidal flats provide the main feeding habitat for the wintering birds. Sandy beaches are well represented, and salt marshes fringe the flats in the sheltered inlets and these provide high tides roosts.

The Birds Directive pay particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are in their own right a Special Conservation Interest (SCI) - Wetlands & Waterbirds [A999]. Table 15.5 provides a summary of Cork Harbour SPA and Ballycotton Bay SPA SCIs.

Table 15.5: Cork Harbour and Ballycotton Bay SPA SCIs

Cork Harbour SPA	Ballycotton Bay SPA	**SPA Special Conservation Interests**	**Season**	**Qualifying Population[1]**	
				Cork Harbour SPA	Ballycotton Bay SPA
X		Little Grebe Tachybaptus ruficollis	Wintering	68	
X		Great Crested Grebe *Podiceps cristatus*	Wintering	218	
X		Cormorant *Phalacrocorax carbo*	Wintering	620	
X		Grey Heron *Ardea cinerea*	Wintering	47	
X		Shelduck *Tadorna tadorna*	Wintering	1,426	
X		Wigeon *Anas penelope*	Wintering	1,750	

Cork Harbour SPA	Ballycotton Bay SPA	SPA Special Conservation Interests	Season	Qualifying Population[1]	
				Cork Harbour SPA	Ballycotton Bay SPA
X	X	Teal *Anas crecca*	Wintering	807	903
X		Pintail *Anas acuta*	Wintering	84	
X		Shoveler *Anas cylpeata*	Wintering	135	
	X	Turnstone *Arenaria interpres*	Wintering		179
X		Red-breasted Merganser *Mergus serrator*	Wintering	90	
X		Oystercatcher *Haematopus ostralegus*	Wintering	791	
X	X	Golden Plover * *Pluvialis apricaria*	Wintering	805	2,383
	X	Ringed Plover *Charadrius hiaticula*	Wintering		167
X	X	Grey Plover *Pluvialis squatarola*	Wintering	66	124
X	X	Lapwing *Vanellus vanellus*	Wintering	3,614	2,782
X		Dunlin *Calidris alpine*	Wintering	4,936	
X	X	Black-tailed Godwit *Limosa limosa*	Wintering	412	136
X	X	Bar-tailed Godwit * *Limosa lapponica*	Wintering	45	175
X	X	Curlew *Numenius arquata*	Wintering	1,345	853
X		Redshank *Tringa totanus*	Wintering	1,614	
X		Black-headed Gull *Larus ridibundus*	Wintering	948	
X	X	Common Gull *Larus canus*	Wintering	2,630	584
X	X	Lesser Black-backed Gull *Larus fuscus*	Wintering	261	1,293
X		Common Tern * *Sterna hirundo*	Breeding	69 pairs	
X	X	Wetlands & Waterbirds	n/a	2,587 ha	281 ha

Key to Table
[1]No. Of individuals as obtained from Standard Natura Data Form.
*Species listed on Annex I of The Birds Directive.

Great Island Channel SAC (Site Code: IE0001058)
The Great Island Channel SAC is located c.4.8km to the North of the proposed development footprint at its nearest point. The main habitats of conservation interest are the sheltered tidal sand and mudflats and Atlantic salt meadows. Both habitats are listed on Annex I of the EU Habitats Directive. Table 15.6 provides a summary of the Great Island Channel SAC SCIs.

Table 15.6: Great Island Channel SAC SCIs

Great Island Channel (0001058) SCIs		% Cover[1]
[1140]*	Mudflats and sandflats not covered by seawater at low tide	62
[1330]*	Atlantic salt meadows	2

Key to Table
[1]As obtained from Standard Natura Data Form.
*Habitat listed on Annex I of The Habitats Directive.

15.4 Impact Assessment

15.4.1 Potential Impacts on Statutory Designated Sites for Nature Conservation

Add the following paragraph at the beginning of sub-section *15.4.1.1 Construction*

The revised screening for appropriate assessment considers the proposed Ringaskiddy Port redevelopment and the associated disposal at sea of dredged material for likely significant effects upon European sites. It concluded at screening stage that no significant effects are likely on Ballycotton Bay SPA.

Add the following paragraph at the beginning of sub-section 15.4.1.2 Operation

The revised Screening assessment for the Natura Impact Statement concluded at screening stage that no significant effects are likely on Ballycotton Bay SPA.

15.4.3 Ornithological Impact Assessment

The following sub-section is added at the end of sub-section *15.4.3.1 Construction*

Disposal at Sea
A review of the research report prepared for Irish Petroleum Infrastructure Programme on Seabirds of Ireland's Atlantic Margin (Cetaceans and Seabirds of Ireland's Atlantic Margin. Volume I – Seabird distribution, density & abundance) (Mackey *et al*, 2004) concluded that there are no significant aggregations of seabirds using waters at the licensed disposal site. Given that the disposal site is adjacent to one of the busiest shipping lanes in coastal Irish waters, seabirds frequenting the site will be well accustomed to shipping noise. Therefore, the temporary presence of an additional vessel and associated noise is extremely unlikely to have significant impact. No significant effects are predicted upon seabirds at this marine site.

15.5 CUMULATIVE IMPACTS

The following text replaces all text in section 15.5.

Potential cumulative effects with other projects and the proposed Ringaskiddy Port Redevelopment and the associated disposal at sea of dredged material has been considered in this assessment.

Port of Cork Maintenance Dredging
Port of Cork submitted an application to the EPA for a maintenance dredging programme in February 2014. That application was accompanied by a Natura Impact Statement (NIS) which was reviewed as part of this analysis. The dredging campaign extends from the City Quays and Tivoli Docks in Cork City, out to Roche's Point. Coastal hydrodynamic modelling was undertaken as part of that assessment to help determine the spread of the dredge plume. The NIS concluded that all of the potential impacts identified will be avoided, and that the proposed maintenance dredging would not have a significant negative impact on either European Site being considered. The permit was issued by the EPA and the maintenance dredging and related disposal at sea campaign was completed in the autumn of 2014 which was outside of the important breeding tern or core overwintering seasons. Future dredging campaigns will also occur in that same seasonal window. No significant disturbance impacts upon birds, bird habitats or otters was predicted. In the absence of any significant impacts as a result of that project, there is no pathway of additive effect for cumulative or in-combination effects between the maintenance dredging project and the Ringaskiddy Port Redevelopment and its associated disposal at sea of dredged material.

Monkstown Marina
Proposals for a new marina at Monkstown were submitted for planning permission and that application included a NIS. The project is located 750m north of Ringaskiddy West, being separated by Monkstown Creek. The project received planning approval in 2010 subject to 77 no. conditions. It includes for a 285 berth marina at the location of the existing marina that has 82 berths. The project additionally comprises car-parking, retail, office and landscaping, with a requirement to dredge part of the seabed in the shallower parts of the marina and in a band paralleling the shore to enable safe access by craft during all states of the tide. A coastal process modelling assessment submitted with that application showed that there would be no effect on the coastal processes with no change in tidal levels and the effect on the tidal currents restricted to the project area with changes of not greater than 0.04m/s. The coastal processes chapter author for this EIS has confirmed that the marina development will not have a cumulative effect with coastal processes as a result of implementing the proposed Ringaskiddy Port Redevelopment. The marina NIS concluded that the marina at Monkstown will not result in the loss of any feeding areas or roosting sites for wintering waterfowl or waders, and that the marina would be principally used outside of the overwintering season. It concludes that the Monkstown Creek bird population is unlikely to be affected by activity in the marina as those activities

would be confined, predictable and that habituation would be expected to occur quite rapidly. The EIS and NIS for that project predict no impact on the qualifying interests for Cork Harbour SPA. A planning condition associated with this approved development notes that construction related or maintenance dredging shall not be carried out between September to April, but that the requirement may be varied to comply with the Port of Cork maintenance dredging programme for the main channel. The effect of this condition is that either dredging will not occur over the sensitive winter season or that it will be associated with a POC dredging campaign and thus the effects of dredging will not be felt by the overwintering species assemblage. In the absence of any significant impacts as a result of that project, there is no pathway of additive effect for cumulative or in-combination effects between the Monkstown Marina project and the Ringaskiddy Port Redevelopment and its associated disposal at sea of dredged material.

Haulbowline Remediation Project, Haulbowline Island
The Haulbowline Remediation Project on Haulbowline Island is 550m northeast of Paddy's Point. The primary objective of this project is to remediate the East Tip thereby ensuring that potential risks to humans and the wider environment are minimised. It is proposed the waste at the site will be contained by constructing an engineered capping system on top of the waste and a perimeter engineered structure around the waste body. The project additionally seeks to widen the access road and construct a slipway and floating pontoon. An EIS and NIS were prepared for that application. That assessment concluded after screening that two potential pathways of effect upon the qualifying interests of Cork Harbour SPA remained, and Stage 2 assessment was undertaken. It concluded that there was no potential for significant negative impacts upon the integrity of Cork Harbour SPA arising either alone or in combination with any other plans or proposals from the proposed East Tip Remediation Project at Haulbowline Island. No displacement of local bird or otter populations was predicted to occur as a result of the Haulbowline Remediation Project. This project is too far from the Ringaskiddy Port Redevelopment for simultaneous or consecutive construction effects to give rise to cumulative or in-combination effects between the remediation project and the Ringaskiddy Port Redevelopment and its associated disposal at sea of dredged material.

Hammond Lane Metal Company
Planning permission was granted in 2012 for demolition, new build, upgraded facilities, new processing plant etc at the Hammond Lane Metal Company located adjacent to the N28 opposite the proposed eastern entrance to Port lands at Ringaskiddy. The ecological impact assessment prepared for this project was reviewed. One badger sett is located within the Hammond Lane lands and will be lost to that development. No badger setts and no significant badger foraging were recorded within Ringaskiddy Port. No significant negative impacts upon the integrity of Cork Harbour SPA were predicted. . In the absence of any significant impacts as a result of that project, there is no pathway of additive effect for cumulative or in-combination effects between the new processing plant project and the Ringaskiddy Port Redevelopment and its associated disposal at sea of dredged material.

Cork Lower Harbour Energy Group
Five large single turbines being developed by the Cork Lower Harbour Energy Group have been given planning permission. Three had been erected by April 2014. The structures are being developed on existing industrial zones land within the facilities of a group of healthcare manufacturing sites in the Ringaskiddy and Currrabinny areas. The EIA and NIS documents prepared for these turbine applications were reviewed which included an assessment on avifauna. That analysis concluded that there would be no displacement of any species which is a qualifying interest of the SPA, and no significant impact on the integrity of Cork Harbour SPA was predicted. The turbines have been constructed, and there have not been any collision risks identified through the ornithological analysis for that application. Simultaneous or consecutive construction effects cannot occur. The turbines are located at a distance from the Port. There is no likelihood of cumulative or in-combination effects with the Ringaskiddy Port Redevelopment and its associated disposal at sea of dredged material.

Spike Island Masterplan
Spike Island is 2km east of Ringaskiddy East and 700m east of Paddy's Point. The Spike Island Masterplan envisages use of Spike Island for public events, concerts etc. In the long-term it is hoped that the island could attract 300,000 visitors per annum. The Masterplan also identifies Haulbowline as

a possible future ferry access point. The Masterplan has considered many options and is broad in its approach requiring more detailed design work. It promotes Cork Harbour as a Green Infrastructure asset. This would likely give rise to an increase in coastal recreational activity and boating which would have the potential to increase disturbance to the qualifying features and conservation objectives of Cork Harbour SPA. The development of a number of ferry trails within the harbour together with a substantial network of new recreational berthing facilities at a number of locations around the harbour would increase boating traffic and disturbance in proximity to component parcels of the SPA. The SPA itself comprises the shallow intertidal areas and boat traffic is not likely to enter into the SPA with any recurring frequency. The development of the harbour as a facility for water based sport and leisure activity would also increase disturbance. The Cork Harbour Cycle Trail is proposed adjacent to parts of the SPA. The transport strategy presents a series of options to facilitate access to Spike Island including a floating bridge, half-tide causeway, cable cars, passenger ferry or roll-on roll-off ferry. The proposed redevelopment of Spike Island considers extensive works to the entire Island. Defined effects of Spike Island Masterplan are difficult to predict with accuracy in the absence of fixed and defined proposals. The thrust of any increased pressure on Cork Harbour SPA conservation objectives is likely to be as a result of an increase in recreational use of the harbour by people and vessels. The magnitude of this effect is not predicted to be significant across the SPA. This project is too far from the Ringaskiddy Port Redevelopment for simultaneous or consecutive construction effects to give rise to cumulative or in-combination effects between implementation of the Spike Island Masterplan and the Ringaskiddy Port Redevelopment and its associated disposal at sea of dredged material.

Cobh Marina

The permitted scheme includes for a 74 berth marina at Whitepoint, Cobh and is located 1.1km to the northeast of Ringaskiddy East across the harbour. The NIS for the marina was reviewed and concludes no significant impact on European sites given the small footprint of the proposed project, the use of a point anchoring system and no overall increase in boating activity in the harbour. In the absence of any significant impacts as a result of that project, there is no pathway of additive effect for cumulative or in-combination effects between the Cobh Marina project and the Ringaskiddy Port Redevelopment and its associated disposal at sea of dredged material.

Cobh Cruise Berth Moorings

This project is located 2.2km northeast of Ringaskiddy East, and across the Harbour at Cobh. Cruise liners currently berth at the deepwater quay in Cobh. The NIS Screening Assessment of the Cobh Cruise Terminal Upgrade was reviewed. It concluded no significant negative direct or indirect effects on the European sites assessed given the distance between the proposed project and the European sites; the size and scale of the proposed project in the context of existing activity within Cork Harbour and absence of the qualifying features within the area of study. This project is under construction, and simultaneous or consecutive construction effects cannot occur. Due to distance, the small scale nature of the works and the absence of dredging, no significant cumulative effects are predicted in combination with the proposed Ringaskiddy Port Redevelopment and the associated disposal at sea activity

Cobh Second Cruise Berth

No design is available for this potential project. If a second berth was constructed at Cobh, it is not expected to result in additional pressures upon the qualifying features and conservation objectives of Cork Harbour SPA. No significant cumulative or in-combination effects between this proposal and the Ringaskiddy Port Redevelopment and the associated disposal at sea of dredged material are expected to adversely affect the flora, habitats and fauna of Ringaskiddy.

Sections 15.6 and 15.7 remain unchanged.

16.0 ENVIRONMENTAL INTERACTIONS

The text for Sections 16.1 to 16.2 remains unchanged.

The following repeats the text of the Schedule of Environmental Commitments submitted to the Oral Hearing.

17.0 SCHEDULE OF ENVIRONMENTAL COMMITMENTS

17.1 Introduction

17.2 Human Beings

☐ Environmental Improvements shall be implemented at Paddy's Point Amenity Area to include new landscaping and enhanced facilities for casual amenity.

☐ Paddy's Point Amenity Area shall provide a pier and slipway in place of the existing Ringaskiddy Pier. The new slipway and pier will provide access to the six established moorings in Ringaskiddy (which will remain in their current location) with improved parking facilities and provision for boat storage.

☐ Relocation of the Sculpture Garden to another site in Ringaskiddy in consultation with the original artist.

☐ Construction access shall be restricted to existing port access road.

☐ Construction site shall be established within and restricted to existing, undeveloped lands within Port of Cork ownership.

☐ Prior to construction, a preliminary Health and Safety Plan will be completed by the Project Supervisor Design Process (PSDP). During the construction process all areas will be delineated and will be under the control of the Project Supervisor Construction Stage (PSCS). A safety plan will be maintained throughout the duration of the project.

- The Port of Cork will provide an apportioned development contribution towards the provision of a footpath from the entrance to the Irish Maritime College to connect with the proposed footpath to be provided by the Department of Agriculture Food & the Marine (immediately north of Gobby's Beach car-park) as shown on attached map.

☐ In line with existing procedures, all site access, both vehicular and pedestrian shall be logged during construction.

- The Port of Cork will continue to implement 'Integrated Pest Management' procedures and fully comply with any recommendations from the HSE in relation to pest control.

17.3 Cultural Heritage

☐ The area of impact on the Prospect Villa boundary wall will be recorded archaeologically in advance of its destruction, which will be monitored archaeologically.

☐ Archaeological monitoring by a suitably qualified and experienced maritime archaeologist licensed by the Department of Arts, Heritage and Gaeltacht (DAHG) shall be conducted during all seabed, inter-tidal/foreshore and terrestrial disturbances associated with the development. An archaeologist experienced in maritime archaeology will be retained for the duration of the relevant works.

☐ All necessary permits shall be in place before site works commence.

☐ In the event of archaeologically significant features or material being uncovered during the construction phase, machine work will cease in the immediate area to allow the archaeologist/s to inspect any such material; full archaeological recording of significant material will be in accordance with archaeological license requirements.

☐ If it is not possible for the construction works to avoid the material, full excavation will be in accordance with archaeological license requirements. A suitable archaeological team will be on standby to deal with any such rescue excavation.

☐ Machinery traffic during construction will be restricted to avoid any identified archaeological site/s and their environs.

☐ Spoil will not be dumped on any of the selected sites or their environs.

17.4 Landscape & Visual

☐ The proposals for the pier and slipway and amenity area at Paddy's Point shall be implemented as outlined within drawing nr. 1004.1.02.

☐ Planting shall be provided in the form of tree-lines and woodland screen planting adjacent to the southern site boundary and internal roads to provide screening, as per drawing nr. 1004.1.03. Further planting will be provided on the northern boundary, as per drawing nr. 1004.1.04.

- Plant species will be suitable for a coastal location and include; Poplar tree species including Aspen; Pioneer tree species including Alder and Birch: Pioneer shrub species including Broom and Willow species; Pine tree species; and Gorse.

☐ Cranes will be mid-grey in colour, based on existing landscape and predominant sky colour.

☐ Directional downlight style cut-off luminaries shall be implemented to prevent up lighting and reduce glare and sky glow.

☐ Down lighting style cut-off luminaries shall be used on any crane superstructures to prevent up lighting and reduce glare and sky glow.

☐ Lighting control systems shall be used to reduce amount of light spill, sky glow, and visual appearance during periods of low activity during the construction phase.

☐ The use of flashing, moving, strobe, or blinking lights will be kept to a minimum.

17.5 Traffic & Transportation

- The Port of Cork Company will not operate Phase 3 of the redevelopment until the completion of the Dunkettle Interchange and N28 upgrades.

- The Port of Cork Company will implement a Ringaskiddy Mobility Management Plan (RMMP) which will be used to manage HGV traffic entering the road network to and from the Port. This will be a mandatory system with which all hauliers serving the port must comply.

- The RMMP systems and measures will include:-

  - A Vehicle Booking System (VBS) to manage the discharge of HGV traffic onto the strategic road network, to minimise the impact of Port traffic on peak traffic periods and to reduce truck queuing in and out of the Port.

  - Each haulier shall be required to register an arrival/ departure through the RMMP website. Hauliers collecting/ dropping off cargo shall be required to book an arrival/ departure time. Only hauliers with pre-booked slots will be allowed access into the Port.

  - A gate system will be introduced to regulate HGV traffic flows into and out of the Port which will restrict HGV traffic flows to do-minimum levels during peak periods.

  - Gated entry and exit lanes will be sited a significant distance back from the public road, allowing sufficient room for HGV queuing within the Port of Cork boundary.

  - IT solutions will be used to transfer information and to communicate with hauliers.

  - An information service for customers will be introduced to provide information regarding port operations and road/ traffic conditions to hauliers.

- A monitoring and evaluation programme shall be agreed with Cork County Council and shall include:

  - Annual monitoring, in order to be able to adjust the measures set out in the RMMP according to changing circumstances

  - The results of this monitoring will be evaluated and the RMMP will be updated if required.

- During the construction phase, mitigation measures shall be implemented by the contractor responsible for the construction and overseen by the Port of Cork. The contractor shall also be required to develop a mobility management plan to ensure that construction workers travel to

the site outside of peak periods. The effectiveness of these measures can be monitored by Cork County Council and the construction traffic restrictions increased or decreased as deemed necessary.

- Construction and operational traffic will be the subject of a planning condition. Please refer to proposed schedule of draft conditions numbers 5, 6 and 7.

17.6 Noise & Vibration

☐ During the construction phase, the Contractor shall adhere to all of the recommendations for reducing noise included in British Standard *BS5228:2009 – Noise and vibration control on construction and open sites: Part 1 – Noise.*

☐ Three 4m noise barriers as illustrated in Figure 9.15 (EIS, Volume II) will be built prior to the commencement of operations associated with the proposed redevelopment; these barriers shall be maintained during the operational phase.

☐ During operational phase, a noise threshold limit of 100dB Lw (95dB Lw with tone) will be set for alarm systems associated with the plant/equipment on-site by the introduction of 'Smart' Broadband alarm systems.

17.7 Air Quality & Climate

☐ During the construction phase, a site dust monitoring programme will be put in place with secure monitoring locations to ensure compliance with dust deposition limits.

☐ An odour management plan will be adopted during the construction phase of the proposed development to mitigate potential odour issues and implement remedial action through agreement with Cork County Council. The management plan will include but not be limited to odour monitoring proposals, odour control mechanisms and odour complaint procedures.

☐ Within the management plan, monitoring proposals for odour emissions will be submitted for agreement to the planning authority prior to the commencement of dredging activities in the construction phase of the proposed development.

☐ A Construction Environmental Management Plan (CEMP) will be developed and implemented. The CEMP will provide a framework for the management and implementation of construction activities incorporating the mitigation measures identified in the relevant chapters of this EIS, including dust and odour. The CEMP will be reviewed regularly, and revised as necessary, to ensure that the measures implemented are effective.

☐ During the operational phase, emissions to air from berthed shipping will be controlled by strict international limits. Good cargo unloading practices will minimise the impact of exhaust fumes from HGVs.

☐ Bulk grain cargo unloading will be carried out in a manner that minimises cargo spillage. To this effect all loading/unloading will be subject to operation specific control and containment protocols as adhered to by Port of Cork. The current method of handling cargoes will be continued and extended to service the proposed berth extension and dust monitoring at site peripheries will be continued.

- Protocol will include; Operational best practice and preventative measures will be adopted at the proposed Deep Water Berth extension. All Cargo Handling Equipment (Cranes, Hoppers and Dust Suppression Units) will be tested in advance of operations. Prior to operations Dust Suppression Units (Dust Boss and Road Sweeper) are pre-positioned according to the prevailing wind in order to limit and prevent Dust Migration. This is monitored continually throughout the unloading operation. Hopper Operators will load trailers in accordance with procedure and in particular avoid creating cones of product above the trailer "waterline" which can result in dust spill. Hopper operators will also ensure that the plant is in full working order with regards to dust extraction before commencing work.

- Staff will monitor transport units on terminal with regards the heights of product in trailers and also the integrity of the tail gates of trailers. Any issues will be raised and remedial action sought. Lorries drawing feed from the stores off terminal will be required to use the truck wash in order to remove excess product which may have gathered on equipment. In addition trailers will be covered prior to release from the terminal to the main road.

- The Building Research Establishment (BRE) Guidance on the Control of Dust from Construction and Demolition Activities will be followed and that a site dust monitoring programme will be put in place during the construction phase to manage dust deposition.

- Refer also to proposed schedule of draft conditions numbers 9, 10 and 11.

17.8 Soils, Geology & Contamination

☐ At construction stage, a Groundwater Management Plan based on CIRIA C515 Groundwater Control – Design and Practice will be implemented by the contractor.
☐ Any contaminated groundwater encountered during earthworks or piling shall be disposed off site to a licensed waste disposal facility or treated by passing it through a three stage interceptor and discharged to sewer under license from the Local Authority.
☐ Material imported onto the site will be assessed to ensure that contamination is not introduced to the site.
☐ Topsoil which is imported onto the site will be chemically analysed and screened against generic screening values for a commercial end use to ensure that it does not pose a risk to human health.
☐ Fill material imported onto the site will undergo Waste Acceptance Criteria (as per BS 12457/3) testing to ensure that the material is classified as inert and does not pose a risk to the underlying groundwater.
☐ The existing Port of Cork Oil Spill Contingency Plan shall continue to be implemented on site.

- Fill material will not comprise marine aggregates extracted from Cork Harbour.

- The existing Port of Cork Company Environmental Management Plan will be updated to include a Waste Management Plan for the operational phase of the redevelopment.

17.9 Coastal Processes

- Dredging will be undertaken by either a trailing hopper suction dredger or a backhoe dredger.

17.10 Water Environment Water Quality

☐ Water quality monitoring will be carried out by the main contractor with continuous in-situ monitoring carried out in advance of the works to establish a water quality baseline and during the dredging activities to ensure effective response to any incidents that may impact on water quality at sensitive sites.
☐ A protocol for regular communication with statutory agencies such as National Parks and Wildlife Service (NPWS) and Cork County Council and other third parties shall be established to ensure all pollution incidents or potential incidents are reported in an efficient and timely manner;
☐ Management and auditing procedures, including tool box talks to all personnel, shall be put in place to ensure that any works which have the potential to impact on the aquatic environment are being carried out in accordance with required permits, licences, certificates and planning permissions.
☐ Existing and proposed surface water drainage and discharge points shall be mapped on a site plan which shall also include the location of existing and proposed measures such as monitoring points, sediment traps, settlement lagoon and oil interceptors.
☐ An appropriate dredging regime will be implemented with due regard to best practice.
☐ Dredge material will be transported in closed systems to prevent overspill.
☐ Contractors shall implement best practice and relevant guidance to ensure silt laden or contaminated surface run-off from the entire construction site; i.e. the Container Berth / Multi-purpose Berth, Deepwater Berth extension, road upgrades, site compound and Paddy's Point pier and slipway, does not discharge directly to the Harbour.
- Port of Cork Oil Spill Contingency Plan will be adhered to by all staff including those employed to carry out construction works on behalf of the Port. Its primary purpose is to set in motion the necessary actions to stop or minimise an accidental discharge of oil and/or Hazardous Noxious Substances (HNS) and to mitigate its effects.

- ☐ Imported fill material required to complete the infilling behind the quay walls will be clean graded stone sourced from local quarries.
- ☐ Concrete use and production shall adhere to control measures outlined in PPG 6 Working at demolition & construction sites (Environment Agency, 2012).
- ☐ For the sections of concrete that are under water, pre-cast units shall be used for construction. Where the use of pre-cast units is not possible, where *in situ* stitching is required or where concrete is to be placed under water or in tidal conditions, specific fast-setting mix is required to limit segregation and washout of fine material / cement.
- ☐ In relation to fuel and chemical storage the control measures outlined in PPG 26 "*Safe storage – drums and intermediate bulk containers"* (Environment Agency, 2011a) shall be implemented. The safe operation of refuelling activities shall be in accordance with PPG 7 *"Safe Storage – The safe operation of refuelling facilities"* (Environment Agency, 2011b).
- ☐ With regard to potential oil spills during dredging operations, an emergency spill kit and oil spill containment equipment will be held on board by the dredging operator;
- ☐ A contingency plan for the works shall be prepared in accordance with *PPG 21 Pollution Incident Response Planning* (Environment Agency, 2009).
- ☐ Operations shall be undertaken in compliance with the existing Port of Cork Oil Spill Contingency Plan.
- ☐ The following shall be adhered to with respect to vessels at berth or travelling through the Port of Cork:
  - Bilge water shall be treated in accordance with Marpol standards;
  - Ballast water management shall comply with the appropriate National and International Maritime Organisation guidelines;
  - Vessels shall be equipped with oil-water separation systems in accordance with Marpol requirements;
  - Spills on deck shall be contained and controlled using absorbing materials;
  - Vessels without sewage treatment systems shall have suitable holding tanks and will bring waste onshore for treatment by licensed contractors;
  - Chemicals shall be stored in suitably bunded areas and with material safety data sheets.

Sewage and Storm Water Infrastructure

- ☐ The proposed redevelopment will connect to the new Cork Lower Harbour Main Drainage Scheme and therefore will receive appropriate treatment prior to discharge to coastal waters. Should the proposed sewer upgrade works not proceed as intended or occur beyond the timescales indicated, then the Port of Cork will install an on site waste water treatment works in order to appropriately treat sewage from the proposed redevelopment prior to discharge to the marine environment.
- ☐ All surface drainage waters, including road drainage, will be presumed to be contaminated and will be routed through highway quality oil interceptors and sediment traps prior to discharge into the sea.

17.11 Marine Ecology

During the construction phase:

- ☐ Vehicles will not be allowed to traverse the mussel bank during construction.
- ☐ Refuelling of plant will be undertaken away from the intertidal area to minimise the effects of possible fuel spillage.
- ☐ Standing machinery will be placed on drip trays to avoid spillages.
- ☐ No overflow from the dredger shall be permitted during dredging.
- ☐ A qualified Marine Mammal Observer shall be appointed to implement mitigation measures derived from '*Guidance to manage the risk to marine mammals from man-made sound sources in Irish waters'* (NPWS, 2014).

During the operational phase:

- ☐ Surface water will be collected in drainage channels and gullies, and passed through oil interceptors prior to discharge.
- ☐ Port of Cork will contribute to an environmental education programme for local primary schools concentrating on the marine environment. To that end they will engage with Inland

Fisheries Ireland, and with the relevant educational institutions on the initiative with a view to agreeing a programme to commence within 18 months of project commencement should it be approved.

17.12 Terrestrial Ecology & Ornithology

☐ A suitably qualified Ecological Clerk of Works will be appointed prior to the commencement of any works to ensure the mitigation is implemented in the manner for which it is intended and to act as a liaison between Port of Cork and NPWS.

- The mitigation measures set out in Section 3.3 of the Natura Impact Statement will be implemented in full.

☐ Landscaping will prioritise the use of native species in keeping with habitats immediately adjacent to the proposed development footprint.

☐ A pre-construction re-survey of the shoreline will be undertaken by a suitably qualified Ecologist to identify otter activity prior to construction.

☐ Construction works at the shoreline adjacent to the ADM Jetty shall be restricted to daytime hours in order to allow otters and other waterbirds to forage at dusk, through the night and at dawn.

☐ Construction of the DWB extension shall be screened from the ADM Training Wall and ADM Jetty for a distance of 40m along the ADM Jetty. A temporary visual screen will be draped under the ADM Jetty between the piled structures for the duration of works at shoreline level.

☐ Light spill will be reduced during construction and operation through the use of directional lighting at locations set out in Planning Drawings IBM0474-GA-400 to 405.

- Predator (gull and heron) perching deterrents will be placed on new lighting columns.

☐ Vegetation clearance and topsoil stripping will be undertaken outside of the breeding bird season i.e. it will not take place between 1st March - 31st August.

- Prior to construction works commencing at the Container Berth and Multipurpose Berths, in the event that these works are likely to commence during the period 1st March - 31st August, a deterrent to breeding plover will be put in place to avoid destruction of active nests or young, or disturbance of active breeding birds.

☐ Mature trees within the application site will be retained where possible. If any are to be removed they will be felled during the months of September to November inclusive subject to re-survey and inspection for bats by a suitably qualified Ecological Clerk of Works.

☐ Any ivy-covered trees which require felling will be left to lie for 24 hours after cutting to allow any bats beneath the cover to escape.

☐ Dredging will not be undertaken between May and August inclusive.

☐ The construction of the internal Port road between the existing security hut and the existing Ro-Ro ramp will not take place between April and August inclusive unless a visual barrier to screen works is in place before construction works commence.

- Placement of infill and erection of a visual barrier to screen Port road construction between the existing security hut and the existing Ro-Ro ramp will be undertaken between September and March.

☐ A 4m visual barrier to screen works will be constructed as part of the permanent works along the northern perimeter of the internal road at the location shown in Planning Application Drawing 0474-PL-0802. This screen will include predator perching post deterrents.

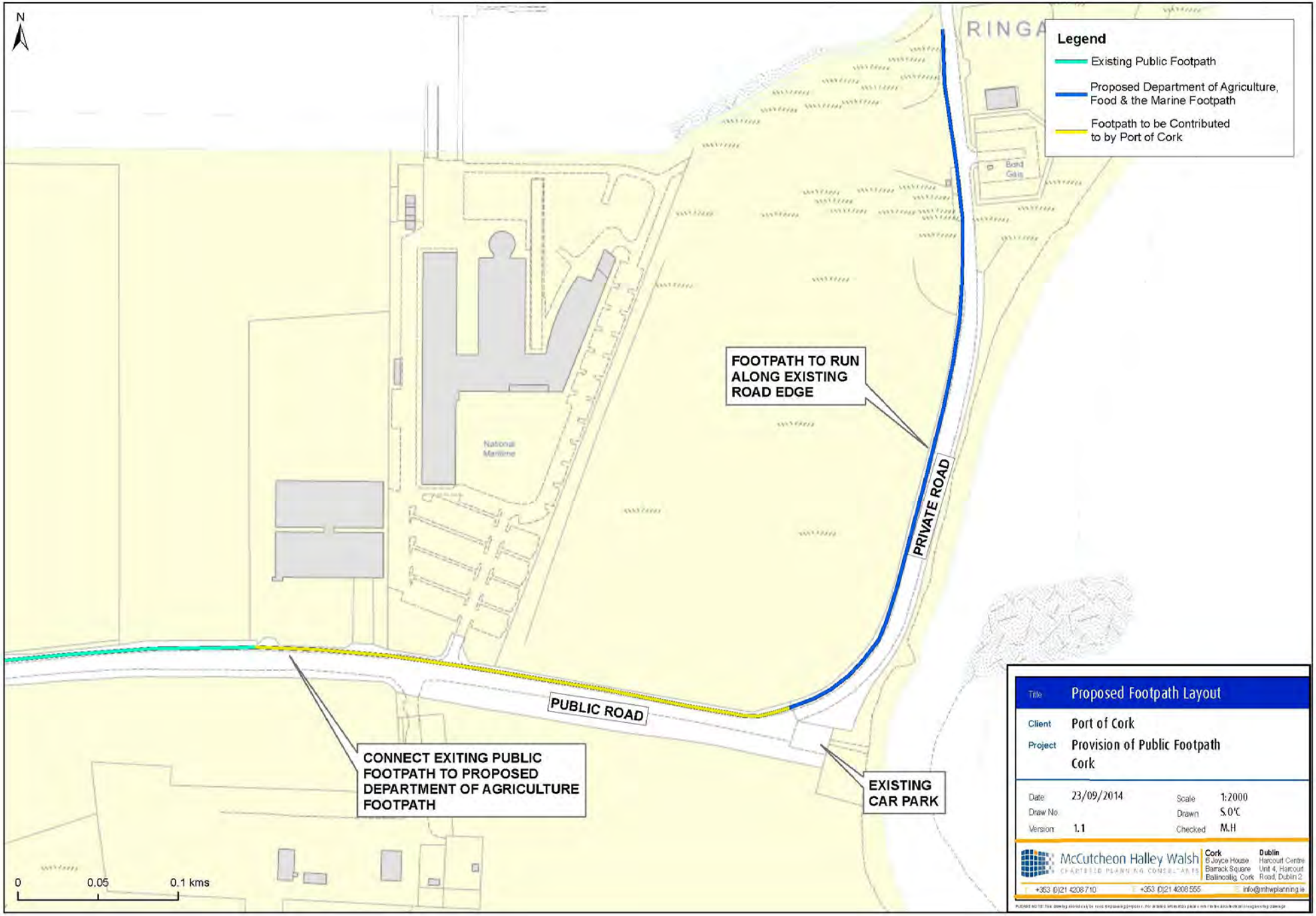
- Sound levels from pile-driving will be ramped up initially by starting at less than full power and increasing to full-power gradually.

- Use of the three mooring dolphins upon which Common Tern breeds by vessels directly or indirectly associated with the port development will not commence until a nesting platform has been constructed to the southern side of each of the three mooring dolphins and northernmost terminal dolphin of the ADM Jetty as specified in the Recommendations Report '*Recommendations on Common Tem nesting habitat improvement measures in Cork Harbour'*. Each of the new nesting platforms will provide at a minimum, equal nesting habitat extent as occurs on the existing dolphins, fitted with a wooden or metal perimeter edge (c.30cm height) to create a secure bund. A series of internal wooden baffles and built-in chick

shelters will be constructed and the floor will be covered with a layer of suitable coarse aggregate and mussel shells as nesting substrate.

- Upon commencement of both port construction and the breeding season of common terns, monitoring of the use of the mooring dolphins by breeding terns will be carried out by one or more competent and experienced ornithologists, in order to confirm the predictions of no adverse effects of construction disturbance. The monitoring will also include estimates of hatching and fledging success. The monitoring will be continued for the duration of construction, and during the first year of operation. If, on the basis of the ornithological monitoring of the mooring dolphins and additional nesting site(s), unforeseen abandonment by some or all breeding terns of the port nesting sites occurs, then the long-term phase of the Recommendations Report '*Recommendations on Common Tem nesting habitat improvement measures in Cork Harbour'* will be implemented and an alternative nesting site constructed as soon as possible.

- A Construction Environment Management Plan (CEMP) will be prepared incorporating the mitigation measures set out in the EIS.


N
RINGA
Legend
Existing Public Footpath
Proposed Department of Agriculture, Food & the Marine Footpath
Footpath to be Contributed to by Port of Cork
FOOTPATH TO RUN ALONG EXISTING ROAD EDGE
PRIVATE ROAD
PUBLIC ROAD
CONNECT EXITING PUBLIC FOOTPATH TO PROPOSED DEPARTMENT OF AGRICULTURE FOOTPATH
EXISTING CAR PARK
National Maritime
0
0.05
0.1 kms
Title Proposed Footpath Layout
Client Port of Cork
Project Provision of Public Footpath Cork
Date 23/09/2014
Scale 1:2000
Draw No
Drawn S.O'C
Version 1.1
Checked M.H
McCutcheon Halley Walsh
CHARTERED PLANNING CONSULTANTS
Cork
6 Joyce House
Barrack Square
Ballincollig, Cork
Dublin
Harcourt Centre
Unit 4, Harcourt
Road, Dublin 2
+353 (0)21 4208710
+353 (0)21 4208555
info@mhwplanning.ie