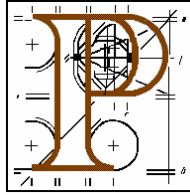


An Bord Pleanála



Inspector's Report

DETAILS OF THE APPEAL

Case Reference No:	29N.PA0007
Proposed Development:	Extension to Dublin Port comprising reclamation and dredge/berth creation to provide for RoRo and LoLo facilities
Location:	Dublin Bay, to east of existing northern port area.
Applicant:	Dublin Port Company Limited.
Planning Authority:	Dublin City Council.
Application Type:	Strategic Infrastructure, Section 37E, Planning and Development Act 2000 (as amended)
Submissions/Observations:	Yes.
Inspector:	B. Wyse.

Table of Contents

<u>Section</u>	<u>Page</u>
1.0 Introduction	3
2.0 The Application	4
3.0 The Planning Framework	29
4.0 The Planning Authority Report	49
5.0 Prescribed/Other Public Bodies Submissions	54
6.0 Submissions/Observations (General Public)	59
7.0 Further Information	90
8.0 Submissions in Relation to Further Information	110
9.0 Oral Hearing	123
10.0 Assessment	210
11.0 Conclusion	289
12.0 Recommendation	291
Appendix A	292

1.0 INTRODUCTION

1.1 The Site (See Map and Photographs)

The site of the proposed development is located at the eastern extremity of the north port area of Dublin Port within Dublin Harbour. It generally comprises a mix of intertidal and subtidal foreshore and includes a small part of the adjacent existing port land. The main shipping channel is immediately adjacent to the south. Land access is via Alexandra Road extension and the port rail network includes a line to this adjacent land.

The Poolbeg Peninsula, including the southern port area, the Poolbeg Generating Station and the South Bull, is approximately 500 metres to the south across the shipping channel. To the north the closest point of the Clontarf seafront is approximately 1,000 metres away. The North Bull Wall is approximately 1,000 metres to the north-east.

1.2 Pre-Application Consultation

The Board's Notice to the applicants under Section 37B (4) (a), Planning and Development Act 2000 (as amended) indicated that the following should be taken into consideration in lodging an application for permission:

1. The impacts of the proposed development on the designated areas in the vicinity (SPA, cSAC etc).
2. The alternatives to the proposed development.
3. The traffic impacts of the proposed development.

1.2 The records of the pre-application meetings, copied to the applicants, also referred to the following issues as likely to be relevant to the consideration of the application:

- The configuration/sourcing and transport of any fill material.
- Construction traffic impacts.
- Visual impacts of the development.
- Projections for use of rail.
- Effects on residential amenity.
- Potential underwater archaeology.
- Implications for the area under the planning control of the Dublin Docklands Development Authority.

2.0 THE APPLICATION

2.1 Documentation

The application documentation includes the following:

- Planning Report.
- Community Gain Proposal
- EIS.

2.2 Development Description

By reference to the public notices the proposed development consists of the reclamation of 21 hectares of foreshore within Dublin Port for port purposes with access to deepwater berths.

The development includes the following:

- 21 hectares of hard standing to accommodate containers, heavy and other goods vehicles and cars awaiting embarkation and goods vehicles awaiting collection following disembarkation. Areas to accommodate the following:
 - 559 no. goods vehicles parking bays.
 - 6,290 linear metres of queuing lanes.
 - capacity for 5,635 no. full containers stacked 5 high (12.95 metres overall height).
 - capacity for 1,440 no. empty containers stacked 6 high (15.54 metres overall height).
 - 60 no. staff parking bays.
- 1,025 metres length of solid quay wall to the east and southern sides of the reclamation area.
- A 500 metre long rock armour revetment to the northern side of the reclamation area.
- A 340 metre long berthing pier and 2 no. double-tier link span roll-on/roll-off (ro-ro) ramps and approach structures projecting from the eastern quay.
- 4 no. 60.5 metre high container handling cranes.
- 3 no. reefer gantries and 6 no. rubber tyred gantries, both types being 25 metres high to their highest point.
- Buildings comprising:

- 2 storey terminal services building, 831 square metres floor area.
 - Single-storey gate control office, 109.13 square metres floor area.
 - 2 storey lift on/lift off (lo-lo) operations office, 285 square metres floor area.
 - Single-storey port operator's office, 4.5 square metres floor area.
 - 2 storey maintenance building, 698.4 square metres floor area.
 - 3 no. single-storey electricity sub-stations, two of 61.8 square metres and one of 99 square metres floor area.
- Extension to existing railway line to secure connectivity to the national rail network.
 - Extension to existing roadways.
 - Demolition of pre-fabricated office building.
 - A 500 metre stretch of landscaping screen and gabion wall with a crest height of + 14 metres over chart datum (CD) along the northern side of the reclamation area.
 - Fencing around the development.
 - 9 no. 45 metre high mast lights on the southern side of the hardstanding and 25 no. 25 metre high mast lights on the northern side of the hardstanding.
 - Dredging over an area of 220,000 square metres (22 hectares) involving a volume of 1.475 ml cubic metres of materials at the southern and eastern berths and approaches from the main channel.

The proposed development is stated to be adjacent to an existing Special Protection Area (SPA) and within an area which has been proposed for designation as an SPA.

The application relates to a development that will also require:

- A Waste Licence.
- A Foreshore Licence.

2.3 Planning Report

Includes the following:

- Proposed development is designed to cater for the transshipment of goods in containers by both lo-lo and ro-ro. It also has the capacity to deal with passenger cars, likely to occur with combined cargo/passenger vessels, and with cruise vessels although the intention is to concentrate these vessels further upriver in a dedicated area at Alexandra Basin.

- The statement of need is set out in detail in Paragraph 1.2 of the EIS. It is stated that the growth in unitised trade through Dublin has increased substantially and will increase even more in the future. New port facilities must be provided if Ireland is to continue to grow as a trading nation and these must be provided in a timely fashion and in the most environmentally sustainable fashion. The proposed development will meet these objectives.
- Appendix 1 – “Socio-Economic Assessment of Dublin Port Reclamation Proposal,” Jim Power Economics.

Proposals are stated to be consistent with public policy by reference to:

(a) Trade Policy

“Trading for Economic and Social Development”, National Trade Policy Statement 2005, Department of Enterprise, Trade and Employment.

(b) Transport Policy

“2020 Vision: Sustainable Travel and Transport” Consultation Document.

“Statement of Strategy 2008 – 2010”, Department of Transport.

“Ports Policy Statement 2005”, Department of Transport – primary policy document in relation to ports.

The Planning Framework for the development is stated to include:

• **National Spatial Strategy (NSS) 2002-2020.**

It is stated that the NSS is clearly supportive of the consolidation and development of Dublin Port but that it does not offer any short-term solution to the principal growth area of unitised trade which is an immediate and pressing requirement. It is stated that its encouragement of more port business to other nationally strategic ports is not a sustainable solution and would unnecessarily increase Ireland’s carbon footprint and neither is it an economic solution.

• **Regional Planning Guidelines for the Greater Dublin Area (RPG, GDA) 2004 – 2016**

It is stated that while the RPG recognises the port as the most important in the country, its suggestions for dealing with increased demand are already being implemented as essentially long-term actions and cannot meet the pressing requirement for additional berthage and storage areas for unitised trade.

- **Dublin City Development Plan (CDP) 2005 – 2011**

It is stated that objective CUF6, to prepare a plan for the inner part of Dublin Bay, has been overtaken by events in the legal sense in that the Dublin Gateway Project has been deemed to be strategic infrastructure by An Bord Pleanála. It is stated that the applicable CDP Policy is that to support the continued development of Dublin Port (Policy E24).

- **National Development Plan (NDP) 2007 - 2013**

It is stated that the “Port’s Sub-Programme” of the NDP acknowledges that the broad conclusions of a port capacity project, published October 2006 (The Fisher Report), demonstrates that the projects being proposed by the port sector, including Dublin Port, have the potential to deliver adequate capacity for the island.

- **Transport 21**

It is stated that this does not envisage large-scale property development on Dublin Port lands.

- **The South Bank – Strategic Development Framework 2002**

It is stated that this was predicated on the disappearance of the main utility users and the port from the Poolbeg Peninsula. It is noted that the then proposed planning scheme has not yet issued, even in draft form.

- **Dublin Docklands Area Master Plan 2003**

It is stated that the plan recognises the vital role of the port in the economic infrastructure of the city and as an employment generator and that planning for Docklands must proceed on the basis that Dublin Port will continue to play its vital role.

- **Dublin Docklands Area Draft Master Plan 2008**

It is stated that while the draft reiterates supportive policies in relation to the port. Dublin Port Company is opposed to proposed rezonings on the Poolbeg Peninsula, involving lands with deep water access and lands currently used as container yards being earmarked for property development use. Such rezonings would greatly diminish the ports’ capacity and, in such an eventuality, the proposed development would be utterly critical if only to maintain capacity.

Studies currently underway and that have a direct impact on Dublin Port include:

- **“Dublin Bay – An Integrated Economic, Cultural and Social Vision for Sustainable Development”, Dublin City Council (DCC)**

It is stated that this study in effect advocates the use of Port Company lands for property development while not including lands currently owned by DCC or the ESB. It is predicated on the belief that the city has no other room to grow and that these lands are to be the city’s “lebensraum”. The study is criticised in relation to the following:

- it does not take account of the planned public transport proposals for the Greater Dublin Area (GDA) and the development associated with them.
- it does not recognise that redundant port lands have been, since 1987, and are in the process of development mainly within the Dublin Docklands Development Authority Area.
- it does not deal comprehensively with the impact that such a somewhat sectional proposal would have on the trading economy of the country as a whole or the Dublin Region in particular.
- no alternative locations are assessed.
- it ignores recent trends in expanding existing ports in cities based on economy and sustainability.

- **“Dublin Port Study” Department of Transport**

This to be completed by April 2009.

- **The Special Task Force on Dublin Bay established by the Minister for the Environment, Heritage and Local Government.**

This was set up at the end of May 2008 and has yet to undertake its substantive work.

The Strategic Plan for Dublin Port by Dublin Port Company

It is stated that the Dublin Port Company has sought to meet demand by its reclamation proposal through the available legal and planning processes in the past. Only now, with its acceptance as strategic infrastructure under the Strategic Infrastructure Act, is there a clear statutory process that it can follow.

The broad vision is to consolidate unitised trade close to deepwater to either side of the channel with the reclamation of additional lands and an acquisition programme to acquire short and long leases from existing lease holdings that are not in core cargo handling activities, as they become available.

Planning issues arising in the context of the proposed development are identified as follows:

- **The Proposed SPA**

The proposed development would be within the reconfigured SPA for Dublin Bay as proposed recently by the Minister for the Environment, Heritage and Local Government should it be adopted.

It is stated that this is the third time that the area has been configured and the ornithological basis for it is purportedly based on studies carried out by the Dublin Port in 2002 as part of the EIS for a Foreshore Licence. The Dublin Port Company has written to the Minister objecting to the latest configuration on the basis that there are no scientific grounds on which it would be justified. Further surveys for the EIS accompanying this application confirm this view. Even if the designation was justified, the EIS concludes that the impacts would not be significant and would not threaten the integrity of the existing or planned SPA.

It is stated that the proposed development involves the provision of additional port capacity for overriding national interest to meet Ireland's requirements as a trading nation and in particular to meet the requirements of the Dublin Region as the engine of economic growth in the country.

- **The Waddenzee Judgement**

It is stated that in preparing the application the best scientific knowledge has been sought and, as concluded in the EIS, the proposed development will not adversely affect the integrity of the existing or proposed SPA area.

- **Alternatives**

These are dealt with in detail in the EIS (see section 2.5 below).

- **Visual Impact**

It is indicated that the assessment in the EIS concludes that impacts are largely negligible to moderate. The view from Clontarf is identified as the one that would be of most concern. The backdrop of existing port and associated facilities and the proposed mitigating landscape treatment to the foreshore facing Clontarf are referred to.

- **Rail Access**

It is stated that Dublin Port has the best access to the national rail network compared to other ports in Ireland. While use of the existing connection is confined to one shipment from Tara Mines in Navan, the Port Company recognises that rail is likely to play a far more significant role in the future given rising fuel costs and depleting fossil fuel reserves. The proposed

rail extension to the new quay side is part of strategic planning. It is anticipated that current physical constraints outside the port on transporting containers by rail could be rectified provided national policy positively encourages a distinct move towards rail transport.

It is estimated that at present 10% of goods could be moved by rail if the infrastructure was adapted and in the context of co-ordinated planning between the Department of Transport and Iarnród Eireann.

- **Community Gain**

See community gain proposal (section 2.4 below).

2.4 Community Gain Proposal

Includes the following:

- Proposal made in the context of Section 37 G(7)(d) Planning and Development Act, 2000, as inserted by Section 3, Planning and Development (Strategic Infrastructure) Act, 2006.
- Proposal to hand over lands on the Bull Island in perpetuity to the public under the control of Dublin City Council and to provide funds for the maintenance of the land to preserve/reinforce its ecological characteristics.
- The lands comprise c.14 hectares at the southern end of Bull Island and immediately north of the Bull Wall.
- The proposal would include an ecological evaluation of the lands in order to develop a management plan commensurate with its status within a designated SAC and SPA.
- The financial commitment would amount to €200,000 to fund proposed studies and €100,000 per year for 10 years to fund recommended works and for maintenance.

2.5 The EIS

The main issues/impacts arising from the EIS are summarised in the following sections: -

2.5.1 Background (EIS Section 1.1)

Most of the anticipated growth in traffic through Dublin Port will occur in unitised trade, i.e. ro-ro vehicles and lo-lo containers. The strategic plan to handle this trade involves:

- Investment in infrastructure to optimise the utilisation of existing areas suitable for unitised operations;

- The recovery of other lands, under long term lease, that would be suitable for unitised operations; and
- An extension of the Port area on the northern side of the Liffey by reclaiming 21 hectares of foreshore.

The northern foreshore was chosen as the preferred location for the proposed extension of port land, because of:

- Its proximity to the deep water needed to accommodate the increasingly larger vessels that are a feature of modern sea freight;
- Its predicted minimal visual impact when viewed from the shoreline and other receptors where it would be seen against the existing industrial and port areas on the southern side of the Liffey;
- Its ease of access to rail and road; and
- The predicted absence of any significant impacts on the natural environment (although it was acknowledged that this should be tested through detailed environmental impact assessment).

2.5.2 Statement of Need (EIS Section 1.2)

Dublin Port is the premier multi-modal port in Ireland. In 2007, it handled approximately 40% of the national trade, including 63% of national lo-lo trade and 80% of national ro-ro trade.

The proposed development is urgently required because:

- Even with a low growth forecast, trade volumes through the port in 2015 are predicted to be 37% higher than 2007.
- Lo-lo capacity could run out as early as 2015 with other unitised operations, especially in ro-ro, experiencing capacity constraints at peak times.
- The increasing size and capacity of ships.
- The need to reduce waiting times for ships.
- The absence of alternative port capacity reasonably close to Dublin.
- The undesirable environmental impacts and increased economic costs of diverting traffic to other ports.
- The absence of an alternative port that can deliver freight services in exposed north easterly wind conditions.

- Dublin Port is a key component of the NSS and the City Development Plan.
- Located at the hub of the national road and rail systems the port is of national strategic importance.

A fundamental objective is to maximise competition within the port. This requires sufficient capacity so that individual operators can handle their goods efficiently.

The predicted demand for capacity in the unitised area is based on:

- Average growth rates experienced over the past 10 years,
- Projected economic activity over the next 20 years, and
- The level of trade enquiries from customers seeking to locate in Dublin.

Projected growth rates for unitised trade are adopted on the basis of a medium growth scenario related to projected changes in national GDP over the period to 2028. These growth rates are considered to be conservative. On this basis capacity deficits at the port are predicted to occur c.2015-2017 for both lo-lo and ro-ro.

In relation to ro-ro it is noted that there are already existing capacity problems at certain peak times due to the specific operational requirements associated with this type of cargo.

Current (2007) unitised freight throughput at the port is as follows:

Lo-Lo: 743,937 TEU's (Twenty Foot Equivalent Units)

Ro-Ro: 733,141 FU's (Freight Units).

Current total operational capacities at the port are as follows: -

Lo-Lo: 1,080,000 TEU's (Twenty Foot Equivalent Units)

Ro-Ro: 1,100,000 FU's (Freight Units).

The Dublin Gateway Project would have the following operational capacities:

Lo-Lo: 338,000 TEU's

Ro-Ro: 432,000 – 904,320 * FU's

*Depends on configuration adopted and size/nature of vessel.

In terms of lo-lo, the proposed additional capacity, in conjunction with some further capacity expected to come on stream c. 2022, is projected to be sufficient to meet demand at the port up until c.2024-2025.

In terms of ro-ro, the proposed additional capacity is projected to be sufficient to meet demand at the port up until c.2028.

The new berths and associated ro-ro and lo-lo facilities are designed to service existing large ships and the next generation of ro-ro vessels and the larger feeder container (lo-lo) ships now on order for operation in European waters. These latter vessels will carry in excess of 2,000 TEU and have a draught of up to 10.5 metres.

2.5.3 Appropriate Assessment (EIS Sections 1.2.5-1.3.7)

It is stated that given the nature of the proposal and its location in relation to SPA's and SAC's an appropriate assessment would be required under the Habitats Directive and that this has been incorporated in the EIS. An assessment of the implications of the proposed development for the European sites is stated to be contained in Sections 7 (Flora) and 8 (Fauna)

2.5.4 Alternatives (EIS Sections 4.2 – 4.9)

Options examined:

1. Do-nothing scenario.
 2. Use of other locations within the port area.
 3. Intensification of use within the port.
 4. Creation of other additional port areas.
 5. Other possible reclamation areas.
 6. Alternative east and south coast port locations.
 7. Other locations for ports.
 8. Proposed reclamation.
- In relation to 1) the critical importance of port and shopping services to Ireland as an open trading nation without land or bridge connections means that this is not a viable option.
 - In relation to 2) it is noted that:
 - total existing Port Company landbank extends to 209 hectares.
 - c.111 hectares are let on long-term (>10 years) leases.
 - c.14 hectares are let on short-term (month to month) leases.
 - c.60 hectares are licensed.
 - c.19 hectares are vacant.
 - c.4.5 hectares are under the control of Dublin Port Company.
 - The port has operated a policy of recovering suitable lands from leaseholders for unitised operations and it intends to continue this policy.

- The examination of vacant and short-term let lands as to their suitability for Lo-Lo and Ro-Ro facilities concludes that a total of just 4.89 hectares is likely to be available over the next two years. Beyond this further growth would be determined by the availability of lands held on long lease.
- In relation to 3) it is stated that current operations are virtually at capacity.
- In relation to 4) and 5) it is stated that the only other lands within the port area that could be reclaimed are those to the north, into the Tolka Estuary, or to the south, fronting Sandymount Strand.
- In relation to 6) and 7) it is concluded that the only ports likely to have spare utilised capacity or increased capacity within the short to medium term are Belfast, Waterford, Greenore and Cork (the latter two subject to Board approval under S.1). It is stated that they are all too distant from the Dublin market to be economic and that their use would:
 - impact negatively on national competitiveness due to increased costs.
 - involve unsustainable traffic movements with a rise in fuel consumption and environmental emissions.
 - cause unnecessary impacts on the carrying capacity of the national road system.
- In relation to Bremore Port it is noted that this is currently before the Board for designation as a strategic infrastructure development – An Bord Pleanála Ref. PL06F.0039. It is stated that the proposal is, as yet, an unquantifiable concept on economic, archaeological and environmental grounds and that it would involve unnecessary additional traffic movements and consequent increased emissions.
- In relation to 8), the chosen option, it is stated that:
 - Dublin Port, by contrast to other existing ports or port proposals, can serve its market efficiently with the smallest carbon footprint. It has the advantage if a dedicated port tunnel and is at the heart of the national railway system.
 - The proposed development offers the only realistic solution within an immediate term and it is apparent that there is no existing alternative that competes on either economic, planning, access, capacity or environmental grounds.

2.5.5 Development Construction (EIS Section 4.11)

The full Construction Logistics Report is included in Appendix 8.

- The construction programme is anticipated to take approximately 3 years.

- It is intended to re-use suitable material won from the capital works dredging as fill within the reclamation.
- Dredging is expected to take about 7 months.
- Of the total volume of dredge material of approximately 1.475 ml m³ it is estimated that approximately 40%, or approximately 600,000 m³ would be unsuitable as fill material and this would be disposed of at the Burford Bank, the current licensed disposal site for the Port's maintenance dredging. This volume is approximately double the volume typically disposed following maintenance dredging every 18 months.
- Suitable fill material would also be sourced from the ongoing maintenance dredgings within the port. This may include contaminated material subject to suitable treatment/appropriate consents.
- Other potential sources of fill material include; spoil from other projects, including Metro North, Dart Interconnector; maintenance dredge from other ports; material from local quarries; and material from designated Irish or UK dredge sites.
- The bulk (80% plus) of imported material to the site would be by sea with less than 20% to be delivered by road or rail.
- Concrete would be batched on site with sand and stone aggregate delivered in bulk by sea. Other major construction elements such as piling would also be delivered by sea.

2.5.6 Human Beings (EIS Section 6.0)

This includes; socio-economic effects; traffic effects; and effects on recreational activities.

A full Traffic Impact Assessment is included in Appendix 9.

Future baseline scenarios include the following:

- While a marked slowdown in economic activity is noted for 2008, it is expected that growth in merchandise trade will continue to expand at a reasonable pace to 2020.
- Assumed traffic growth rates of 3.0% per year to 2013 (first year of operation for the proposed development) and 2018 and 2.0% per year to 2028 based on the DTO's Saturn Model for the port area and on estimated trade figures from the Dublin Port Company. Road infrastructure assumptions include:
 - No Eastern By-Pass.

- Samuel Beckett Bridge over the River Liffey and the Dodder Bridge over the Grand Canal Dock reducing traffic levels along North Wall Quay and East Wall Road.
- Layout modifications required to the North Wall Quay/East Wall Road junction for 2028 traffic conditions include; four-lane carriageway across the East Link Bridge; a left slip lane onto North Wall Quay; an additional southbound lane on East Wall Road.

Impacts during construction include:

- Land based construction material sources programmed to arrive over a 40 week period with deliveries over a 12 hour day, between 07:00 and 19:00 hours over a seven day period. Total HGV traffic would be 300 two-way trips per day with a maximum of 350 two-way trips per day for all associated vehicles. Access to the port would be via Promenade Road and the increase in passenger car equivalent traffic would be not more than 5% along this route or less than the threshold identified in the NRA guidelines on the assessment of road impact. No noticeable obstruction or delay to traffic would be expected. A short-term negligible negative impact is anticipated.
- In relation to recreation the main area of potential conflict lies in the displacement of sailing activity from the reclamation area. Given that the area is typically covered by shallow water and occasionally exposed and only represents a small proportion of the area available for sailing in the bay the impact is considered to be of negligible negative significance.

Impacts during operation include:

- All road junctions on the surrounding network would operate below maximum capacity in 2013 and 2028 with the development in place.
- A negligible impact is predicted due to the permanent loss of 21 hectares of potential sailing area.

2.5.7 Flora (EIS Section 7.0)

This includes impacts on terrestrial habitats; transfer of invasive species during reclamation; and impacts on inter-tidal and sub-tidal habitats.

The majority of the species identified within the terrestrial habitat are common and not of particular botanical interest with the exception of Sea Pea which is protected under the Flora (Protection) Order 1999. Any alteration to its habitat requires a license from the NPWS.

Impacts during operation include:

- The permanent removal of the bund to the eastern extremity of the existing reclaimed area would result in the loss of habitat supporting the

Sea Pea. To mitigate it is proposed to create new habitat along the northern boundary of the proposed development which would include translocation of this species.

- This new habitat area would also include new woodland and additional intertidal rocky habitat would also be created along the northern revetment.

2.5.8 Fauna (EIS Section 8.0)

This includes impacts on; benthic fauna; fish and migratory species; and wildfowl and waders.

An Ornithology Report is included in Appendix 13 and benthic survey data reports are included in Appendices 11 and 12.

Current baseline findings include the following:

Benthic Fauna

- Site characterised by low species diversity and none of the species recorded are of significant conservation interest.
- The intertidal communities within the northern part of the study area may offer some limited feeding resource for waterfowl and may have some importance for the integrity of the SPA.
- The species present are typical of those that characterise fine sediment habitats within impacted or disturbed estuarine areas. As such, they are tolerant of fluctuating environmental conditions such as periodic sediment disturbance due to storms and are not considered sensitive in this respect.

Natural Fish Resource

- The Liffey is one of the foremost salmonid systems in the region.
- The river is closed to all salmon and sea trout angling for 2008. The rivers Tolka and Dodder are closed to fishing for salmon and sea trout over 40cm and commercial net fishing has been banned since 2006.
- Surveys at North Bull Island indicate fish species found to be common to other North Western European estuaries.
- The coastal and inshore habitats around Dublin Bay provide nursery areas for commercially valuable species such as herring, cod, haddock, whiting and lemon sole, as well as spawning grounds for lemon sole and sprat.
- The Liffey system supports a regionally significant population of Atlantic Salmon, a species listed under Annex II and V of the EU Habitats Directive.

- Shads, lampreys and eels also referred to. Twaite shad have been recorded in the River Liffey and they are listed in Annex II of the EU Habitats Directive. Lampreys are protected in designated SAC's.

Ornithology

- Of 33 waterfowl species identified four species make regular feeding usage of the site – Oystercatcher, Curlew, Turnstone and Common Tern.
- Oystercatcher, curlew and turnstone are amongst the species for which the SPA is designated.
- Common Tern is an Annex I species.
- Applying a tidal adjustment factor (assumed at 10%), to take account of the fact that the site is only exposed on a small proportion of low tides, the cumulative use of the site is estimated at 4-6% of the bird usage of the Liffey Estuary by Oystercatcher, Turnstone, Common Gull and Herring Gull and 1-1.5% for Curlew, Common Tern and Black Headed Gull.
- The comparative figures for Dublin Bay are 0.2% - 0.9% for Oystercatcher, Curlew and Turnstone.
- Applying these percentages to five year mean peak data for Dublin Bay (1998-2003) it is predicted that the development would be the equivalent to the loss of intertidal feeding habitat for about 30 Oystercatchers, three Curlews and three Turnstones. In addition all of these species make use of a wide range of habitats around the bay.
- The aggregate cumulative use of the site by these three wader species is 0.55% of their total aggregate use of Dublin Bay. In the context of the use of Dublin Bay by all waders and Brent Geese their use of the site constitutes 0.039% of the total or one part in almost 2,560 of the total wader and goose usage of Dublin Bay, at most.

Impacts during construction include:

- Disturbance to benthic invertebrate communities within the footprint of the capital dredge area. Given expected recovery impact considered minor negative. Communities identified are not of conservation importance.
- Potential impact on benthic ecology from sedimentation in the intertidal area to the north of the dredge area to be limited by carrying out dredging in the northern third of the dredge area on spring tides only. Negligible negative residual impact anticipated.
- Sediment Mitigation Strategy (SMS) to be developed, in liaison with appropriate regulatory authorities, to minimise the impact on marine

benthos from contaminated sediment arising from dredging activity. Outcome – minor negative impact anticipated.

- Direct disturbance to fish during dredging likely to impact mostly on smaller, more vulnerable benthic species such as gobies, the most common bottom living fish in most estuaries. Larger species, such as salmon, with high swimming speeds will be able to escape the dredger head. Overall impact considered negligible negative.
- It is not anticipated that larger estuarine fish would be significantly impacted by the temporary increased levels of suspended sediment.
- Any potential noise impact from piling on migratory fish to be mitigated, including the avoidance of piling during peak salmon runs (July to August), and the application of ‘soft start’ techniques.
- Additional disturbance to birds from the reclamation works and subsequent construction is predicted to have a short-term, negligible negative impact.

Impacts during operation include:

- The reclamation area of c.21 hectares constitutes 7% of the intertidal and subtidal area within the Tolka Estuary and there would be a permanent loss of benthic communities within its footprint. Given the typical characteristics of these communities the impact of their loss in the wider context of Dublin Bay is rated as minor negative.
- Hydrodynamic modelling indicates that the area to the north of the proposed development area and dredge area would experience changes to bed shear stress. These areas are all situated within the intertidal and subtidal areas of the Tolka Estuary. However, due to the areas existing highly dynamic conditions, the existing benthic communities are likely to be relatively tolerant to high currents and any associated scouring or deposition. Anticipated small changes to wave heights and tidal surge would not have any effect on benthic communities. Overall impacts from changes to the hydrodynamic regime on marine communities are predicted as negligible negative.
- Given the relatively small size of the area involved and the presence of other intertidal area within Dublin Bay the impact of habitat loss on the fish community is rated as minor negative.
- The loss of intertidal feeding habitat for birds from the scheme footprint, taking account of the tidal exposure factor, would equate to 0.2% of the Tolka Estuary feeding area. A long term, minor negative impact is predicted for the three species of waders and a negligible negative impact is expected for waterfowl.
- The erosion and deposition that could be experienced in the lower intertidal and subtidal areas is considered to represent a negligible

negative impact in relation to the bird feeding habitat available in the Tolka Estuary.

- It is recommended that monitoring of the benthic fauna and ornithology is undertaken during and after construction.

Impacts during operation on birds are also referred to in Chapter 7 of the EIS at Sections 7.4.1 – 7.4.16. These include:

- All of the primary species for which the SPA's are designated (Brent Goose and Bar-tailed Godwit) make negligible and infrequent use of the development site.
- Oystercatchers, Curlew and Turnstone are secondary species for which the SPA's are designated (occurring in nationally important numbers).
- The development would result in the direct loss of 23.3 hectares of very low intertidal habitat.
- The detailed assessment in Appendix 13 identifies that there would not be a significant adverse effect on any bird species as a result of the proposed development and, consequently, there would not be a significant adverse effect on the integrity of the South Dublin Bay and River Tolka Estuary SPA and North Dublin SPA.
- Several recent pipeline projects across the bay have not yet been shown to have had a significant adverse impact on birds and monitoring is continuing. In-combination effects, therefore, are considered not likely to be significant.

2.5.9 Soils and Geology (EIS Section 9.0)

This considers the nature of the intertidal and subtidal sediments in the study area particularly with respect to the potential mobilisation of contaminated sediments.

Associated sediment sampling and analysis reports are included in Appendices 14-16.

Impacts during construction include:

- The sediment contamination burden shows that there are elevated levels of copper, nickel and arsenic across the entirety of the sampled area. As a result of the predicted sediment remobilisation and subsequent deposition there is potential for a moderate negative impact on the sediment quality in Dublin Bay.
- Sediment Mitigation Strategy (SMS) to be developed to reduce this impact to an acceptable minor negative level. This would include further investigations to determine the current sediment contamination burden of

the potential wider receiving areas of Dublin Bay. Further methods to limit the dredge plume will also be explored and reported as part of the application for a Foreshore Licence.

- In relation to the capital dredging operations there is a risk that historical contaminated sediments may be exposed with a potential for moderate to major negative impacts in the post dredged area. Further investigations are recommended to assess the full extent of the contamination burden of the sediments and these will form part of the SMS. The anticipated outcome is to reduce the impact to minor negative.

Impacts during operation include:

- Increased bed shear stresses in the Tolka Estuary are liable to cause the re-suspension of fine material and potentially increase overall turbidity. Erosion of mudflats in this area could also release historic contamination. Further information is needed on the contamination burdens of these areas and this will be addressed in the SMS. It is not expected that these processes would release large quantities of contaminants in the short term. The anticipated impact would be minor negative at worst.
- It is recommended that monitoring be carried out post construction for a five year period and following any maintenance dredging. Further monitoring can also be determined subsequent to the SMS.

2.5.10 Water (EIS Section 10.0)

This includes impacts in relation to; hydrodynamics, including wave, current and tidal regimes, erosion, deposition and suspended sediments and flood risk; and water quality.

The Hydrodynamic, Wave and Sediment Modelling Reports are included in Appendices 17-19.

Observations in relation to the current baseline conditions include:

- The second most common wind direction is from the southerly quadrant and these have the greatest effect on wave heights and water levels within the port. These wind conditions, in combination with extreme tides and waves, are factors most likely to cause flooding along the Clontarf coastline. Such conditions occurred on 1 February 2002 resulting in the worst recorded coastal flooding in Dublin. Flooding in Clontarf in October 2004 was associated with winds from an easterly direction.
- For the purposes of the study extreme wind events for return periods of 1 in 1 year, 1 in 10 years and 1 in 50 years and for easterly, south easterly and southern wind directions were used.
- The Spectral Wave (SW) Model was run for a combination of water levels (MHWS to 1 in 200 year plus sea level rise), wave heights (1 in 1 year to 1 in 100 year) and wave directions.

Observations in relation to the future baseline include:

- In order to take account of potential future water levels the hydrodynamic model was run for a 1 in 200 year event plus surge.

Impacts during construction include:

- As a consequence of dredging the sediment plume modelling indicates noticeable suspended sediment concentrations (SSC's) moving northwards on flood tides into the relatively shallow water north of the port. Overall SSC's above existing average maxima occur only within close proximity to the dredging activity with concentrations around the average being reached within approximately 300 metres of the dredging points. Overall a minor negative impact on water quality is expected for the duration of the dredging.
- Sediment deposition could occur in the area north of the navigational channel and to the north and north-west of the proposed development. Except within approximately 200 metres of the dredge point estimated deposition is less than 2 millimetres after five days continuous dredging. This is considered to be a worst case scenario and a minor negative impact is expected.
- Mitigation is proposed through restricting dredging in the northern third of the eastern dredge area to spring tides only to avoid deposition of material to the north and minimise lost dredge material within the intertidal area. The resulting impact would be negligible negative residual.
- The impact on water quality arising from re-suspension of contaminated sediments is considered as minor negative at worst due to the fall back to baseline levels of SSC's away from the immediate vicinity of the dredge points and dilution and dispersion processes.

Impacts during operation include:

- The development would result in a small reduction in tidal range and tidal surge inside the Liffey entrance, including on the model run for a 1 in 200 year surge, from the Irish Sea. This is a minor positive impact.
- Increased current speeds due to the proposed development result in a localised change to an area immediately to the north of the proposed reclamation (an area used by recreational vessels) such that a localised moderate negative impact is predicted during the peak of the ebb and flood spring tides. This may be of concern for less manoeuvrable (sailing) vessels. Mitigation would include excluding such vessels from this area during these periods.

- Significant wave heights predicted for the Clontarf frontage would be reduced by up to 1.06 metres during an extreme event due to the sheltering effect of the development. This would be a minor positive impact.
- There is a predicted increase in bed shear stress to the north and east of the reclamation near the edge of the dredged area and a decrease in the area where the capital dredging is to be undertaken, in a small area between the port and Clontarf and along the navigational channel. The former could result in erosion, the latter in deposition. The extent of high bed shear stress, and consequently erosion, is limited in both area and depth, because the area has already been subjected to relatively high bed shear stresses. The “drag-on” effect could be limited as the area of high bed shear stress is small and isolated from the main intertidal area.
- The total areas likely to be subject to a net increase in bed shear stress are estimated at approximately 10.75 hectares and are mainly in the lower intertidal, comprising silty sands and gravels. The impact from erosion is considered minor negative in relation to the scale of the area affected in the Tolka Estuary.
- In the long-term the proposed dredge area and the fairway towards the entrance suffer from deposition if there is net sediment supply from Dublin Bay and the port may have to carry out maintenance dredging.
- The potential for erosion to occur along the eastern boundary of the development may result in a limited area of scour. Monitoring, including regular bathymetric surveys, is recommended. This is also recommended for the areas to the north of the development. Eroded areas could be recharged using material won during the maintenance dredging regime.

2.5.11 Air (EIS Section 11.0)

This includes impacts in relation to; emissions from on and off road traffic; vessel emissions; dust; and odours.

An Air Quality Monitoring Report is included in Appendix 20.

In relation to existing baseline conditions, it is indicated that air quality in Dublin is generally good. The main sources of emissions to atmosphere in the vicinity of Dublin Port are road traffic, ocean-going and harbour vessels and industrial processes. Sensitive receptors are located within a 2 kilometre radius of the development site and in close proximity to some roads outside the port. The area surrounding the development site is mainly industrial in nature.

Impacts arising across all the tests applied, and including in some instances, the implementation of mitigation measures, range from minor negative, through negligible negative to no impact for both the construction and operational phases.

2.5.12 Noise and Vibration (EIS Section 12.0)

In relation to potential vibration impacts, the separation distances between the site, principal construction access routes and potentially sensitive receptors indicate that ground borne vibration would not be a cause of concern. This matter, therefore, is not assessed any further.

In relation to noise impacts those considered include both constructional and operational emissions from both within the port and from road, rail and shipping traffic beyond the port but associated with it.

Appendices 21-23 include a glossary of Environmental Noise Terminology, a Background Noise Survey Report and a Noise Modelling Report.

In relation to baseline conditions, it is indicated that the nearest and potentially only significant potential noise sensitive locations (NSLs) to the proposed development are on the north side of Clontarf Road in the vicinity of the yacht club jetty.

Impacts arising across all the tests applied are rated as negligible negative for both construction and operational phases. The latter assumes 24 hour operation of the facility.

Although no specific mitigation measures are identified as necessary best practice is identified as desirable. During construction it is recommended that particular attention be paid to piling activities as these give rise to the greatest noise emissions. It is stated that any requirement to operate piling rigs outside the standard hours of 07:00 to 19:00 Monday to Friday should be agreed with the local authority beforehand. During operation the heavy handling of containers is identified as a noticeable source of off-site noise. It is stated that training of the container handling operators in the best way to minimise container placement noise.

Taking account of mitigation measures the residual noise impacts are rated as negligible.

2.5.13 Climate (EIS Section 13.0)

This includes impacts in relation to greenhouse gas emissions, particularly from vehicular road traffic.

In relation to the construction phase, it is stated that it is not possible to assess the factors that would contribute to greenhouse gas emissions in any detail at this stage of the process.

In relation to the operational phase, the assessment was carried out to estimate the effect of the proposed development on national emissions compared to the do-nothing scenario wherein as Dublin Port reaches capacity freight would divert to alternative ports resulting in an increase in freight unit-kilometres.

The effect of failing to extend the capacity at Dublin Port is stated to increase emissions from associated freight by some 11% corresponding to 0.02% of total national greenhouse gas emissions.

2.5.14 Landscape (EIS Section 14.0)

This includes impacts in relation to visual amenity and landscape character.

In relation to the current and future baseline, it is noted that attention is drawn to the backdrop in views to the proposed site formed by the existing industrial development associated with the port and the future impact of the permitted Dublin Waste Energy Facility at Ringsend.

In relation to the construction phase, short-term moderate to significant negative impacts are identified in views from the north, along Clontarf Road, from the east on Bull Wall Road, and from the south, along the Great South Wall.

Impacts during operation include:

- Moderate to significant neutral in terms of landscape character given the existing port/industrial character of the site context.
- The character of existing views would not significantly change in the medium to long term as the proposed extension would be perceived as part of the existing port/industrial activities.
- From the perspective of residential properties along the Clontarf Road the proposed development would likely be perceived as a negative and cumulative visual impact associated with an increase in the industrial character of the area and the obstruction of views to Killiney Hill and the Wicklow Mountains. In the medium to long term, as the planting to the northern boundary matures the impact would be reduced to moderate negative.
- From the perspective of residential properties on the Bull Wall Road the proposed development would initially register a moderate, negative and cumulative impact in the medium term as a consequence of increased proximity. In the medium to long term this would reduce to slight and neutral as the development becomes an accepted element of the existing view.
- Impacts on views from the Clontarf Road and Bull Wall Road would be similar to those referred to above.
- In terms of other visual receptors the impacts on views from the Great South Wall are likely to vary from significant, negative and cumulative in the short term to moderate and neutral in the medium term as the reclaimed area becomes an integral part of views of the port.

- The principal mitigation measures are the planting/boundary treatments proposed along the northern perimeter of the development.

2.5.15 Material Assets (EIS Section 16.0)

This includes impacts in relation to land use; infrastructure; navigation; and port operations.

The only significant impact identified is a major positive arising from the creation of additional usable land for port facilities.

2.5.16 Cultural Heritage (EIS Section 17.0)

This includes impacts in relation to known and unknown/unidentified archaeological sites and wrecks.

Associated geophysical and dive survey reports are included in Appendices 24-27.

The principal outcome of the archaeological investigation was the discovery of a shipwreck, possibly 18th or early 19th century in date, within the area proposed for reclamation.

The main potential impact of the development, therefore, is identified as the destruction of this wreck. Mitigation, through archaeological excavation and record, is recommended. On completion of analysis it is recommended that the excavated components of the wreck should be re-buried within a designated seabed area adjacent to the proposed development. All mitigation measures to be subject to the approval of DoEHLG. It is stated that a potential major negative impact would, in this way, be converted to a moderate positive impact.

Other mitigation measures recommended include appropriate marking of the reburial site and a dredging protocol and ongoing monitoring of areas of potential erosion to the north of the development site in relation to potential impacts on unknown archaeological wreckage.

2.5.17 Interactions (EIS Section 15.0)

This section identifies the dominant interactions between each of the key social, economic and environmental influences as described in the various sections of the EIS.

Key interactions identified within current baseline conditions include:

- The negative impact of increased human activity on bird presence within a localised area. The interaction is characterised as weak and reducing with distance.

- A potentially strong interaction between alterations to the hydrodynamic regime (resulting in erosion) and buried archaeological remains.
- A strong interaction between the economy and port trade.
- A multiple phase interaction between changes to hydrodynamic processes on benthic fauna and fish leading to a further indirect interaction with feeding birds. It is stated that such interactions are difficult to quantify.

No significant impacts arising from interactions are identified for either the construction or operational phases of the proposed development.

2.5.18 Dredge Disposal Area (EIS Section 18.0)

This refers to the existing licensed disposal site at the Burford Band. Subject to its suitability for offshore disposal, it is anticipated that up to 600,000 tonnes of capital dredge material, approximately double the volume disposed during a maintenance dredge programme every 18 months, would be disposed of to this site.

Survey, modelling and monitoring reports for the Burford Bank site are included in Appendices 28-32.

Given the sediment sampling results identified in EIS Section 9.0, and which indicated elevated levels of copper, nickel and arsenic in many of the samples, it is stated that it may not be possible to dispose of all the dredged arisings offshore. This matter is to be examined further as part of the dumping at sea licence application and for which a sediment mitigation strategy is to be developed in conjunction with Marine Institute and the Marine Licensing Vetting Committee.

Impacts identified range from negligible to minor and temporary negative.

It is indicated that in relation to material deemed not suitable for offshore disposal alternatives will need development, either through treatment, containment or alternative disposal methods.

2.5.19 Conclusions and Recommendations (EIS Section 19.0)

This includes a proposed Construction Environmental Management Plan (CEMP) to be a contract between the applicants and the construction contractor.

The draft CEMP is presented in Appendix 33 and it contains all the mitigation measures proposed. It is considered as a draft as it is intended that it would continue to be added to following applications for permissions and licence, as well as further consultation, up to commencement of construction.

The section includes a summary list of all the mitigation measures proposed in the EIS. It also details proposed post-development monitoring.

The section outlines the other approvals/permissions required as follows:

- Foreshore Approval
- Agreement/licence in relation to shipwreck
- Dumping at sea permit
- Waste Licence

3.0 THE PLANNING FRAMEWORK

3.1 Ports Policy

3.1.1 Ports Policy Statement 2005, Department of Communications, Marine and Natural Resources

This is the primary policy document in relation to ports in Ireland.

Key statements/policies include:

- Private sector involvement in providing port services has increased and is welcomed as ports move towards the “landlord” model.
- The ports are essential pieces of public infrastructure, carrying 99% by volume of the islands foreign trade.
- Current policy is to require ports to operate commercially without Exchequer support and to provide adequate in-time capacity for the future needs of the economy; private sector investment is encouraged.
- It is expected that ports would ensure seamless onward connections to road and rail transport.
- The provision of adequate and efficient capacity into the future is a crucial strategic objective.
- Most recent capacity requirement predictions point to a lower than previously anticipated shortfall. Nevertheless, a shortfall of 12.2 million tonnes is predicted over the next 10 years.
- Given long lead in times and the need to have in-time capacity in place it is essential that a policy framework within which to identify, fund and progress any new capacity additions is put in place as soon as possible.
- The Minister envisages a process aimed at identifying a small number of projects to meet the capacity deficit identified. The aim of the process will be to involve all stakeholders with limited Exchequer recourse as a residual financier only where clearly demonstrated as essential to progress the project.
- The Department intends to maintain competition as a foremost policy driver and capacity provision clearly will have significant implications in this regard.
- Within ports the Department will aim to ensure that there is an arena large enough for competition to existing among private sector providers and shipping companies.

- Between ports the Department will seek to ensure that sufficient high quality capacity is provided at ports to allow for vibrant competitive conditions. This will inevitably require ongoing capacity surpluses in order to attract new business together with forward planning to ensure that projected deficiencies are dealt with in sufficient time.
- Competitive conditions are present both within and between ports. Dublin does not experience significant competition from outside but does accommodate vibrant competition conditions within the port.
- The Minister will seek to ensure that capacity constraints do not lead to dominant or monopolistic conditions in services and/or capacity availability.
- The Minister intends to maximise private sector involvement (including funding) in the ports.
- The Minister regards, as a guiding principle, the maintenance of open and competitive conditions in ports and the avoidance of monopolies, either public or private.

3.1.2 Information Paper based on Report of Fisher Associates Consultants regarding future seaport capacity requirement for unitised trade in Ireland, 2006, Department of Transport (The Fisher Report)

Though published by the Department the conclusions are stated to be those of consultants and not necessarily those of the Department. It is also indicated that material considered to be of a commercially sensitive nature has been excluded from the paper. The report of Fisher Associates was commissioned following on the commitment in the Ports Policy Statement 2005 to put in place a policy framework for the delivery of additional port capacity.

The objective of the report was to advise the Department whether the anticipated capacity requirement for unitised cargo to 2014 and beyond could be efficiently and adequately met by implementation of some combination of key projects being progressed at that time by the port companies.

The projects examined were at

- Greenore Port
- Bremore Port
- Dublin Port
- Roslare Europort
- Port of Waterford
- Port of Cork
- Shannon – Foynes

Conclusions included:

- In the base case scenario of assumed lower growth rates lo-lo capacity would be fully utilised by 2014 and ro-ro would require additional capacity of 69,000 units by that date.
- The projects being progressed by the ports sector have the potential to deliver adequate port capacity going forward in line with the Government's ports policy.

3.1.3 National Development Plan (NDP) 2007 – 2013

The promotion of balanced regional development based on the National Spatial Strategy Framework is a key strategic goal of the plan.

The Ports sub-Programme includes the following: -

- Ireland's commercial sea ports are tidal transport arteries, carrying 99% by volume of the island's external trade.
- Planned investment by the commercial ports over the period of this plan will support the strategic policy objectives in the Government's Ports Policy Statement 2005.
- The broad conclusions of the study (The Fisher Report) demonstrate that the projects being progressed by the ports sector have the potential to deliver adequate capacity for the island going forward.
- The Ports Policy Statement makes clear that the State-owned commercial port companies should fund their operations and infrastructural requirements without recourse to the Exchequer, either from their own resources or by other avenues such as efficiencies, increased charges, disposal of non-core assets, borrowing or private sector investment. The precise projects and expenditure will be decided by the individual port companies and their boards, subject to the required capital appraisal and statutory Ministerial approvals. The capital appraisal and Ministerial approval will be informed by the high level strategic goals of this Plan, including the maintenance of national competitiveness and the promotion of regional development.
- The Government proposes to undertake a comprehensive study of the role of Dublin Port, taking account of locational considerations, in the context of overall ports policy on the island of Ireland, wider transport policy, urban development policy, the National Spatial Strategy and national economic policy. This review will take account of the findings of the study on the role of Dublin Bay and the Dublin Port Area commissioned by Dublin City Council.

3.1.4 Statement of Strategy 2008 – 2010, Department of Transport

In relation to the ports sector this essentially reiterates the commitments/policies outlined in the Ports Policy Statement 2005 and the NDP 2007 – 2013.

The core objective is to ensure that investment in ports meets port capacity requirements and to facilitate the availability of commercial port services which are effective, competitive and cost effective.

3.1.5 Dublin Port National Development Plan Study, prepared for The Department of Transport (July, 2009) (The Indecon Report)

The Terms of Reference for this study involved “a study of the role of Dublin Port and its future”, taking account of:

- Locational considerations.
- Port policy.
- Ports capacity (on an all-island basis).
- Wider transport policy.
- Urban development policy.
- National Spatial Strategy.
- National economic policy.

The study was in particular tasked to examine the cost benefit analysis of various scenarios relating to Dublin Port, including:

- Relocating all or part of Dublin Port’s existing activities to an alternative location(s);
- Existing port activities continuing to expand with demand, and
- Port activities continuing at current levels with growth being catered for at alternative locations.

The study also took into account of the findings of the study by Dublin City Council, 2007, *Dublin Bay – An Integrated Economic, Cultural and Social Vision for Sustainable Development* and other material.

The conclusions of the report, in summary, are as follows:

1. The level of port capacity requirements will be influenced by economic growth and by developments in consumer expenditure,
2. There is potential to improve the capacity utilisation of ports in Ireland and this should be pursued as a priority,
3. There is a need to develop additional port capacity in Ireland by 2025-2030 and this would require the expansion of Dublin Port or the

development of the proposed Bremore Port or some equivalent facility to provide additional capacity for the Irish economy,

4. Both Dublin Ports' proposed 21ha development and the development of new port capacity such as the proposed Bremore Port would have positive net present values,
5. Nothing should be done at a policy level to block either the proposed expansion of Dublin Port or the proposed development of Bremore at this stage,
6. The proposals for the development of Bremore and Greenore and other ports combined with the continuation of Dublin Port would have a higher net economic benefit than the complete closure of Dublin Port,
7. The scenario involving a potential closure of Dublin Port would have city wide sustainability benefits but these would not justify the additional cost involved,
8. Consideration must be given to the timing of costs and benefits and who would pay for capital expenditures and the long timescale required for implementing a scenario involving the closure of Dublin Port.

The key conclusion is stated as follows:

The key findings of this study indicate that additional port capacity will be required in Ireland and it is likely that this would require the expansion of Dublin Port or the proposed development of Bremore or an equivalent alternative. Given the uncertainty concerning both these projects, nothing should be done at a policy level to block these projects at this stage, as there is a significant cost for Ireland if neither of these projects develop. Our analysis also indicates that the closure of Dublin Port is not justified on economic grounds as the benefits of alternative land use are less than envisaged and that these and other benefits would not justify the costs involved.

3.2 National and Regional Planning Policy

3.2.1 National Spatial Strategy (NSS) 2002 -2020

The spatial and developmental structure envisaged in the strategy is summarised as follows:

- A strong and internally competitive Greater Dublin Area (GDA) driving both its own economy and national development.
- Strategically placed, national scale urban areas, acting as gateways, which individually and in combination will be key elements for delivering a more spatially balanced Ireland and driving development in their own regions.

- Strategic medium to larger sized towns as hubs linked to gateways, in turn reaching out to more rural parts.
- A strengthened county and large to medium sized town structure.
- Diversified and vibrant communities, which contribute to and benefit from the development of larger centres such as gateways and hubs.

It is stated that it is essential to the NSS that the performance of the economy of the GDA and surrounding counties is built upon so that its success, competitiveness and national role are sustained into the future.

The continued health of Dublin is stated to critically depend on, amongst other things, good international access particularly through Dublin Airport and Dublin Port.

Specifically in relation to international sea accessibility the strategy includes the following: -

- Dublin Port is vital to the national economy and that of Dublin itself and adjoining regions. However the port faces a shortage of capacity, giving rise to its need for more land to accommodate its expanding activities. A possible solution to this, in the medium to longer term, and of benefit to both the port itself and the city, might lie in promoting alternative locations for some current and future Dublin Port activities, such as the transit and storage of petrochemicals, bulk goods and cars. More port business to and from various parts of the country through other nationally strategic ports could be encouraged. This may in some cases require substantial investment in facilities at alternative ports.
- Developing shipping facilities additional to those at Dublin Port will need to be supported by improved access so that transit times and costs are competitive with those available from Dublin. This will encourage shippers to invest in services. The use of the linking corridors set out in the transportation framework would promote the ports in the northern and southern/south-eastern international access bands thus relieving congestion at Dublin Port.

3.2.2 Regional Planning Guidelines – Greater Dublin Area 2004 – 2016 (RPG GDA)

The guidelines recognise Dublin Port and Dublin Airport as the premier international access points for the country and that their continued development is essential in the interests of underpinning Ireland's future international competitiveness.

Landside access is identified as a significant issue. In this regard the role of the Dublin Port Tunnel is noted. The potential for further access improvements through the development of a southern port access route is also noted.

The following is also noted: -

- Dublin Port must give consideration to trends in shipping and the rapid growth in the trade of unitised cargo. It will be essential to meet as far as is reasonable and practicable the demands for increasing size and capacity of sea going vessels, the introduction of new shipping routes and the demand for more berthing and handling facilities. Independent studies carried out for the Department of Communications, Marine and Natural Resources suggest that the capacity issue will be critical for Dublin by 2007/2008. Existing land uses at Dublin Port should be reviewed with a view to making more efficient use of existing lands as part of the process of considering further land requirements for port-related uses.
- Arklow and Wicklow Ports have an important role to play in the local economy by providing flexible specialised shipping services. Access to these ports should be developed to enhance and strengthen this role.
- Dublin Port and Iarnrod Eireann should prepare a plan on the role which rail access will play in the transport of goods to and from the port. The plan should identify any necessary infrastructure requirements to support the continued role of rail access to the port.
- The important role of Dun Laoghaire Harbour as a key element of infrastructure for access to international markets should be recognised and planned for.
- Drogheda Port, while outside the GDA, is heavily influenced by its proximity thereto. The port has a significant role to play in relation to serving its own hinterland (within the GDA and outside it) and also as an alternative to Dublin Port as a provider of port facilities for unitised and bulk traffic.

3.2.3 Dublin Bay Taskforce (July 2008)

The taskforce was launched by the Minister for the Environment, Heritage and Local Government on 16 July, 2008. The taskforce is being led by the Dublin Regional Authority (DRA) and its membership includes representatives of; the three contiguous Dublin local authorities; the Department of the Environment, Heritage and Local Government and the Department of Transport; the Dublin Docklands Development Authority, the Dublin Port Company and Dun Laoghaire Harbour Company; Dublin Bay Watch and Coast Watch; and a number of Councillors.

The terms of reference for the taskforce include the following:

- An analysis of the Bay area as a multi-functional resource of the city, including consideration of both the landside and waterside uses of the area;

- An in-depth examination of the potential impact of climate change on the Bay area (including storm surges, rising sea levels, flooding etc) and consideration of the possible measures to mitigate those risks;
- Consider the future role of Dublin and Dun Laoghaire Ports, including the scope for expanding, reducing or removing the existing Dublin Port facilities over time, taking full account of the Dublin Port Study which will be in preparation by the Department of Transport in parallel with the work of the Task Force. Sustainable redevelopment or reuse of the port lands should also be considered;
- An analysis of the impact of other economic activities and other harbour and leisure activities;
- Proposals for the extension/revision of existing amenity areas and wildlife conservation areas including the re-designation of the Dublin Bay SPA;
- The preparation of guidelines on the future sustainable use of the Bay Area;
- Informed by ongoing liaison with a wider stakeholder forum with open membership; and
- Facilitated by the DRA's or a dedicated website for the engagement of stakeholders and the general public.

3.3 Development Plans

3.3.1 Dublin City Development Plan (CDP) 2005-2011

Relevant provisions include:

Objective CUF6

It is an objective of Dublin City Council to prepare a plan for that part of Dublin Bay, from and including North Bull Island and the South Wall and up to and including Sandymount, Merrion Strand and Booterstown and also concentrated on the Port Area. The plan will identify and determine the role of that part of the bay as an economic, amenity, recreational, environmental and ecological resource. The plan shall be prepared following consultation with all relevant stakeholders including recreational users, local community interests and the public. The plan shall establish guidelines for the future sustainable development and use of part of Dublin Bay, its environs and foreshore. The plan shall facilitate the provision of coastal zone management. Any proposed development on the foreshore (above the high water mark including land reclamation) shall be the subject of planning control in accordance with the provisions of sections 224 and 225 of the Planning and Development Acts, 2000 to 2002. Consequently planning permission must be sought before the commencement of such works, except those specifically exempted under section 225. Planning applications for foreshore development shall be deemed

premature pending the preparation of this plan. The plan will include an evaluation of South Dublin Bay with a view to its designation as a Natural Heritage Area and as a Special Amenity Area under the Planning Acts, and full implementation of such designation(s) if so designated. Any material change arising from the above should be incorporated into the City Development Plan by way of variation.

See also Policy H47 (similar to above).

Dublin Port (Section 6.11.0)

The rapid expansion of activities in Dublin Port has continued since the adoption of the Dublin City Development Plan 1999, with in excess of 22 million tonnes of cargo and 1.4 million passengers passing through the port in 2002. Dublin City Council recognises the importance of Dublin Port to the national, regional and metropolitan economy and will work with the Port Authority in maximising the competitiveness of the port in cargo and passenger number terms.

The completion of the Dublin Port Tunnel will greatly improve access to the port for heavy goods vehicles, as well as improving environmental conditions within the city, currently affected by such traffic.

Policy E24

It is the policy of Dublin City Council to support the continued development of Dublin Port subject to the highest environmental standards and minimisation of potential impact on the surrounding environment, and having regard to Policy CUF6.

Underwater Archaeology (Section 10.5.5)

Policy H37

It is the policy of Dublin City Council to acknowledge the importance of underwater archaeology. Proposed developments that may have implications for the underwater heritage shall be subject to an underwater archaeological assessment in advance of works.

Natural Environment (Section 10.6.0)

Policy H42

It is the policy of Dublin City Council to protect flora, fauna and habitats, which have been identified, by the Habitats Directive, Birds Directive, Wildlife Act (1976) and the Flora Protection Order (S.I. No. 84 of 1999).

Designated Sites (Section 10.6.2)

Policy H43

It is the policy of Dublin City Council to maintain the conservation value of all Natural Heritage Areas, Special Areas of Conservation and Special Protection Areas, identified and designated by the Department of the Environment, Heritage and Local Government.

North Bull Island/Liffey Valley (Section 10.6.3)

Policy H44

It is the policy of Dublin City Council to update the Special Amenity Area Order for the North Bull Island.

Objective H23

It is an objective of Dublin City Council to request the Department of the Environment, Heritage and Local Government to designate Sandymount and Merrion Strands and Irishtown Nature Park as Special Amenity Areas and to prepare a Special Amenity Area Order.

The Coastline (Section 11.1.5)

Dublin City's coastline extends from Blackbanks (Kilbarrack) to Merrion and includes Dollymount and Sandymount strands. With new developments in waste treatment the quality and recreational potential of these strands are now much improved. The coastline itself is a valuable amenity with recreational potential which has been partially exploited by the creation of walkways at Clontarf and Sandymount. There is further potential to develop a walking and cycling route along the perimeter of the bay which would ultimately link its northern and southern extremities.

Policy R014

It is the policy of Dublin City Council to maintain its beaches at Dollymount, Sandymount, Merrion and Poolbeg/Shellybanks to a high standard and develop their recreational potential as a seaside amenity, in order to bring them to a Blue Flag standard within the development plan timeframe.

Objective R08

It is an objective of Dublin City Council to carry out a scoping exercise to determine the feasibility of developing, in conjunction with the adjoining local authorities, a pedestrian way and cycle route along or near the coastline from Sutton to Sandycove, following consultation with local residents, residents' associations and other relevant stakeholders and agencies. This route will be developed along the coastline, within Dublin City Council, subject to

feasibility study but irrespective of the intentions of the adjoining local authorities.

Objective R09

It is an objective of Dublin City Council to make provision for the enhancement of the entire area of Dublin Bay and through the provision of appropriate facilities, the securing of Blue Flag status for the various beaches within the Bay.

Zoning

Small part of landward area of the site, at proposed access, is subject to Zoning Objective Z9, i.e. To preserve, provide and improve recreational amenity and open space.

Remainder of landward area, and the adjacent land areas, subject to Zoning Objective Z7, i.e. To provide for the protection and creation of industrial uses, and facilitate opportunities for employment creation.

Dublin Port (Section 15.20.0)

In assessing proposals for the Port area, Dublin City Council will have regard to the following:

- Recognition of the important role of Dublin Port in the economic life of the city and the consequent need in economic and employment terms to facilitate port development.
- The periphery of the port area facing residential areas shall be designed and landscaped to minimise the impact of its industrial character.
- The impact on nature conservation, recreation and amenity use, and other environmental considerations.
- The protection of the amenities of residential and commercial uses in adjoining areas.
- Design criteria including landscaping, finishes, signage and site layout.

3.3.2 Dublin Bay – An Integrated Economic, Cultural and Social Vision for Sustainable Development, Dublin City Council, September, 2007.

The study is intended as the first stage in the preparation of a strategic framework plan for the Dublin Bay area that will guide stakeholders in the long term development of this resource. This is the plan referred to in Objective CUF6 of the City Development Plan (see section 3.3.1 above).

The study includes the following:

The study assessed the impact of leaving the port undisturbed and a number of potential options for development of the port lands based on partial or complete relocation of the port – the latter identified as a robust and compelling option. The conclusion is that a sustainable framework for the future can be established if the futures of the bay, the port and the city are treated as integrated issues.

The drivers of the study were focused on the need to:

- Ensure the continued viability of Dublin Port, which is vital to the national and regional economy,
- Facilitate continued development of Dublin, in a sustainable manner for the city and Ireland,
- Improve the quality of life, through reduced commuting, more housing and better living conditions,
- Protect and enhance the unique environmental characteristics of the bay, and
- Provide the whole community with better access to the bay.

The key elements of a framework for the future are stated to include:

- Governance of the bay and its environs,
- Continued improvements to the ecological health of the bay and its contributing estuaries through wider protective designations and through active improvement programmes,
- Ability for the port to continue to operate efficiently and grow in a climate of certainty through improved decision making in the planning process, and
- A joint plan of action for the port area.

In relation to the port the study considered seven options across the spectrum from no change (Option 1) to complete relocation (except for a new cruise terminal) (Option 7). Following an initial evaluation four options were brought forward to establish which option offered the greatest economic benefit. The appraisal included economic, operational (port), social and environmental criteria.

The appraisal conclusions are:

- Using the current assumptions, there is evidence to suggest that the full relocation of the port and development of the vacated site for a mixed use

of residential, public and employment space offers the best long-term impact for Dublin.

- By creating new employment capacity, the new land use is generating increased long-term output for Dublin, and resultant tax revenues for the State. These long-term gains more than offset the initial capital cost of the relocation and development. The option is however the most expensive in the short-term, requiring significant investment in construction.
- Full relocation also appears to offer the best relative qualitative position for Dublin, promoting quality of life, efficiency and maximising future opportunities. However, there are some disadvantages related to port-based unemployment and incurring environmental costs.

The recommendations of the subsequent Submissions Report (April 2008) are as follows:

- With public opinion broadly in favour of further investigation into the possibilities raised by Option 7 of the draft report, and the bulk of stakeholders either ambivalent or in favour of the proposals, the onus remains on Dublin City Council to progress the process, notwithstanding other studies being prepared.
- The changing nature of Dublin Bay, and the uncertain future faced by parts of it need to be communicated to citizens in a coherent and non-alarmist manner, while studies are required to consider factors such as hydrological and hydrogeological impact of flood defences being investigated by the City Council's Engineering Department, sediment transport and environmental designations/ecology of the bay.
- A key factor in the discussion should be the identification and assessment of alternative development concepts for the port lands so that the debate can address the positive attributes of such a decision rather than focussing entirely on the problems.
- Working with the Department of Transport the future of port trade on the east coast needs to be evaluated and alternative sites to Dublin Port investigated in detail.
- When the Department of Transport National Development Plan Study is completed, there may be a need to initiate the scoping phase of the Strategic Environmental Assessment process to better understand the wider environmental benefits and issues associated with relocating Dublin Port and to define the environmental objectives.

3.3.3 Draft Dublin City Development Plan 2011 – 2017

This includes the following in relation to Dublin Port:

- Significant elements of the port are likely to remain for the foreseeable future. It is prudent to plan the structure and form of this part of the city, including the proposed public transport connections, having regard to the medium and long term vision to relocate the port elsewhere in the region as set out in the Dublin City Council Study *Dublin Bay – An Integrated Economic Cultural and Social Vision for Sustainable Development* (2007) (Section 4.4.1.2).
- Dublin City Council commissioned a study of Dublin Bay in 2007. The study *Dublin Bay - An Integrated Economic Cultural and Social Vision for Sustainable Development* (2007), set out a number of scenarios for the future development of port lands and used a financial model to measure all quantifiable costs and benefits over a 25 year period. The preferred scenario of the study involves the existing port being accommodated at an alternative location.
- In May 2008, the Dublin Bay Taskforce was set up by the Department of the Environment, Heritage and Local Government charged with delivering a Master Plan for the Bay area which is awaited.
- In assessing proposals for the Port area, Dublin City Council will have regard to the following: -
 - Recognition of the important role of Dublin Port in the economic life of the city and the region and the consequent need in economic and employment terms to facilitate port development or relocation pending the outcome of the Dublin Bay Task Force (section 17.22).

3.3.4 Dublin Docklands Area Master Plan 2008

In relation to Dublin Port the Master Plan includes the following policies: -

- **Policy ED31**

Facilitate Dublin Port as a major employer in the area and seek to ensure that the port continues to play its vital national economic role.
- **Policy ED32**

Support the continued development of Dublin Port in line with the Department of Transport's objective to balance the need for the transportation of goods and people.

- **Policy ED33**

Facilitate, in conjunction with the Dublin Port Company and Dublin City Council, the national role of Dublin Port in providing for the ease of movement of consumer goods and people to and from the Greater Dublin Area and beyond. In assessing proposals for the port area, the authority will have regard to the important role Dublin Port plays in the economic life of the city and the consequent need in trade and employment terms to facilitate port development.

- **Policy ED34**

Cooperate with the Dublin Port Company and Dublin City Council to implement a programme of traffic management to reduce through-traffic from the city centre and the local road network in the vicinity of the port. The authority supports the completion of the Eastern Bypass which would facilitate this programme.

- **Policy ED35**

Ensure that development of the Docklands area does not compromise existing employment in the Port, subject to the authority's statutory remit.

- **Policy ED36**

The authority recognises that Dublin Port plays a major role in passenger travel, and support the need for adequate ferry terminal services, which are consistent with the need to protect existing Natura 2000 sites.

- **Policy ED37**

Support initiatives that recognise the need for a coordinated approach to ensure and promote both leisure and international trade.

3.3.4 Draft Poolbeg Planning Scheme 2008

This sits within the statutory framework of the 2008 Master Plan for the docklands area.

The scheme proposes a substantial quantum of mixed residential and commercial use on the peninsula.

3.4 Natural Heritage

3.4.1 Designated Sites

3.4.1.1 Special Protection Areas (SPA)

Following the ruling of the ECJ in Case Ref. C-418/04 the SPA designations within Dublin Bay are now in the process of being changed. Notice of Intention to designate revised areas was published on 28 May, 2008.

The designations that applied prior to this notification were as follows:

- **Sandymount Strand/Tolka Estuary – Site Code 024**

This covered the southern part of Dublin Bay, from the South Wall to Dun Laoghaire, and also the northern section of the Tolka Estuary extending (roughly) from Alfie Byrne Road to the Bull Wall.

The site did not include the site of the subject proposed development.

- **Bull Island includes L.T.M. – Site Code 006**

This covered the inner part of North Dublin Bay, the seaward boundary extending from the Bull Wall Lighthouse to Drumleck Point at Howth Head, and it included Bull Island.

The designations now proposed are as follows: -

- **South Dublin Bay and River Tolka Estuary SPA – Site Code 004024**

The following is a summary of the information contained in the Notice of Intention to designate.

The site includes the southern intertidal area of Dublin Bay, between the River Liffey (South Wall) and Dun Laoghaire Harbour, and to the north the entirety of the River Tolka Estuary extending to the North Bull Wall and to the River Liffey navigational channel. It also includes Booterstown Marsh and a portion of the shallow marine waters of Dublin Bay.

The River Tolka Estuary part of the site includes the site of the subject proposed development.

The list of Qualifying Interests is as follows: -

- Light-bellied Brent Goose
- Knot
- Sanderling
- Bar-tailed Godwit (Annex I)
- Redshank
- Common Tern (Annex I)

- Artic Tern (Annex I)
- Roseate Tern (Annex I)

Additional Special Conservation Interests for the site are:

- Oystercatcher
- Ringed Plover
- Golden Plover (Annex I)
- Grey Plover
- Dunlin
- Black-headed Gull

Wetlands and Waterbirds are also indicated as a special conservation interest for the site.

Further relevant information includes: -

- The site is important for waterfowl, being an integral part of the internationally important Dublin Bay complex.
- The site supports an internationally important population of Light-bellied Brent Goose and further nine of the species occur in nationally important numbers.
- South Dublin Bay is a significant site for wintering gulls and the Mediterranean Gull (Annex I) is also recorded from here.
- Both Common Tern and Artic Tern breed in the Dublin Docks on a man-made mooring known as the ESB Dolphin which is included within the site. Recent counts indicate this site as one of the most important in the country for Common Tern.
- The South Bay is of international importance as an autumn tern roost, with more than 10,000 terns (all species) recorded.
- Although birds regularly commute between the south bay and the north bay recent studies have shown that certain populations which occur in the south bay spend most of their time there.
- The wintering birds within the site are well monitored. More survey, however, is required on wintering gulls and the autumn terns.

North Bull Island SPA – Site Code 004006

The following is a summary of the information contained in the Notice of Intention to designate.

The site covers all the inner part of North Dublin Bay, the seaward boundary extending from the Bull Wall Lighthouse across to Drumleck Point at Howth

Head. The site includes a narrow strip along the southern side of the North Bull Wall.

The list of Qualifying Interests is as follows: -

- Light-bellied Brent Goose
- Shelduck
- Pintail
- Shoveler
- Oystercatcher
- Grey Plover
- Knot
- Dunlin
- Black-tailed Godwit
- Bar-tailed Godwit (Annex I)
- Redshank
- Turnstone

Additional Special Conservation Interests for the site are: -

- Teal
- Ringed Plover
- Golden Plover (Annex I)
- Sanderling
- Curlew
- Black-headed Gull

Wetlands and Waterbirds are also indicated as a Special Conservation Interest for the site.

Further relevant information includes: -

- Salt marsh extends along the landward side of the island and provides the main roost site for wintering birds in Dublin Bay.
- The island shelters two intertidal lagoons which provide the main feeding grounds for the wintering waterfowl.
- The North Bull Island SPA is of international importance for waterfowl on the basis that it regularly supports in excess of 20,000 waterfowl.
- It is also of international importance as the numbers of two species, Brent Goose and Bar-tailed Godwit, exceed the international threshold. The site is the top site in the country for both of these species.
- A further 15 species have populations of national importance.
- While some of the birds also frequent South Dublin Bay and the River Tolka Estuary for feeding and/or roosting purposes, the majority remain within the site for much of the winter.

- The island is a regular wintering site for Short-eared Owl (Annex I).
- North Bull Island is also subject to the following designations:
 - Two statutory nature reserves.
 - Wildfowl Sanctuary.
 - Ramsar Convention Site
 - Biogenetic Reserve
 - Biosphere Reserve
 - Special Amenity Area Order (SAAO)
 - Special Area of Conservation (SAC)

3.4.1.2 Special Areas of Conservation (SAC)

There are two candidate SAC's within Dublin Bay as follows:

North Dublin Bay – Site Code 000206

The following is a summary of the information contained in the Site Synopsis.

The site covers the inner part of North Dublin Bay, the seaward boundary extending from the Bull Wall Lighthouse across to the Martello Tower at Howth Head. The North Bull Island is the focal point of the site. The site includes a narrow strip along the southern side of the North Bull Wall.

The site is an excellent example of a coastal site with all the main habitats represented. The site holds good examples of ten habitats that are listed on Annex 1 of the EU Habitats Directive, one of these being listed with priority status. Several of the wintering bird species have populations of international and national importance, while some of the invertebrates are of national importance. The site contains a number of rare and scarce plants, some of which are legally protected under the Flora Protection Order 1987, some of which are listed in the Red Data Book and one of which is listed on Annex II of the EU Habitats Directive.

South Dublin Bay – Site Code 000210

The following is a summary of the information contained in the Site Synopsis.

The site lies to the south of the River Liffey and extends from the South Wall to Dun Laoghaire.

The site is a fine example of a coastal system with extensive sand and mudflats, a habitat listed in Annex I of the EU Habitats Directive. The site is also an internationally important bird site and is largely designated as an SPA under the Birds Directive.

3.4.1.3 Natural Heritage Areas (NHA)

There are three proposed NHA's within Dublin Bay as follows:

North Dublin Bay – Site Code 206

The geographical area is similar to that of the North Dublin Bay cSAC, but also includes most of the Tolka Estuary.

South Dublin Bay – Site Code 210

The geographical area is similar to that of the South Dublin Bay cSAC.

Dolphins, Dublin Docks – Site Code 201

This refers to the ESB Dolphin within the docks, near Pigeon House Harbour, and which is included within the South Dublin Bay and Tolka Estuary pSPA.

3.4.2 Plans

3.4.2.1 Dublin City Biodiversity Action Plan (BAP) 2008 - 2012

The plan aims to halt the loss of biodiversity and to promote awareness and knowledge of its importance across the city. The main content of the plan is a programme of actions recommended to protect and enhance the city's natural heritage. The plan also selects a number of habitats and species for priority action.

3.4.2.2 A Management Plan for North Bull Island – Dublin City Council, August 2009

The main objectives of this plan are to update key data, particularly about the current status of habitats and species of conservation importance, to identify and discuss current management issues on the island and to make recommendations to manage these issues.

4.0 THE PLANNING AUTHORITY REPORT

The principal conclusions/recommendations are as follows: -

4.1 Planning Authority View on Decision

- (i) Whilst the Planning Authority is supportive of the need for Dublin Port to remain competitive and that port activities are a requirement for the future development of Dublin, it is also mindful that a wider assessment of the port lands and port activities is required in relation to Dublin Bay and the future of the city and that this work is ongoing at both city and national government levels.
- (ii) The EIS has not adequately addressed how it may be possible to meet future needs of the port having regard to the availability and use of land within the existing port area. The application does not provide adequate justification for an immediate requirement for 21 hectares of land and the economic justification related to reclamation costs requires elaboration. The application does not satisfactorily examine the feasibility of meeting the short-term requirements as outlined in the application through a combination of the available lands identified in Section 4.4 of the EIS.
- (iii) The long-term vision and potential of the Dublin Port area is that outlined in Option 7 of the Dublin Bay study, i.e. a full relocation of the port.
- (iv) The proposed development contravenes the Dublin City Development Plan 2005 – 2011, in particular Objective CUF6 and Policy H47, and is premature pending the completion of a number of other strategic studies and initiatives.
- (v) The proposed development is also considered to be premature in terms of strategic national policy. The proposal to expand on-site predetermines the outcome of considerations by the Department of the Environment, Heritage and Local Government and the Department of Transport. The proposal is therefore made in the absence of any long-term strategy and directly conflicts with the only available study of the best strategic option for the future of Dublin Bay, the *Dublin Bay – An Integrated Economic, Cultural and Environmental Vision for Sustainable Development*.

4.2 Planning Authority view on information provided

Should An Bord Pleanála consider that further information is required from the applicants the City Council recommends that the following be requested:

- (i) Independent hydrological, biodiversity and conservation experts of international repute experienced in the development of port facilities

involving land reclamation shall be selected in agreement with Dublin City Council and shall be employed at the developers' expense. These experts shall approve the methodologies for the proposed development and shall assess the proposed impact of the development on the Dublin Bay area and shall report and advise the city council in these matters. This assessment shall pay particular attention to, *inter alia*:

- a) the impact of the development on the hydrological conditions of the bay area,
 - b) the impact of the proposed development on visual landscape,
 - c) the impact of the proposed development on natural heritage.
- (ii) An assessment of whether a combination of existing sites within the port lands as identified in Section 4.4 would be able to provide for the short-term needs of the port.
- (iii) Additional information be sought to clarify how the applicant proposes to ensure an acceptable standard of potable water from the extensive network to the proposed buildings and to all hydrants within the proposed development.
- (iv) Additional information with respect to flood risk in relation to:
- (a) the development itself
 - (b) neighbouring developments/surrounding area
 - (c) impact with respect to Dublin Bay and rivers
 - (d) impact of the development on the River Liffey, its tributaries and the city canals.
- (v) An assessment of the impact of the proposed development on the surrounding coastline, particularly in relation to coastal erosion.
- (vi) The proposed development includes the installation of c.7 kilometres of potable water pipes. These pipes provide water to an extensive network of hydrants for fire fighting purposes. In addition, water is supplied for consumption purposes to the proposed buildings in the development. The applicant does not appear to have provided proposed consumption demands for the development.
- (vii) Given that the watermain network will be constructed in reclaimed land, consideration should be given to the possibility that some contamination may be present in the soil and the effect this may have on the design of the pipe system. Information in this regard should be requested from the applicant.
- (viii) The anticipated use of the proposed land may also be a factor in determining the type of water pipe to be used in the development. Information in this regard should be requested from the applicant.

4.3 Planning Authority View on Conditions

In the event of a grant of permission the Planning Authority recommends the attachment of a series of conditions. These include the following:

4.3.1 General Conditions

- (i) Independent hydrological, biodiversity and conservation experts of international repute experienced in the development of port facilities involving land reclamation shall be selected in agreement with Dublin City Council and shall be employed at the developer's expense. These experts shall approve the methodologies for the proposed development and shall assess the impact of the development on the Dublin Bay area and shall report and advise the city council in these matters. This assessment shall pay particular attention to, *inter alia*:
 - a) the impact of the development of the hydrological conditions of the bay area,
 - b) the impact of the proposed development on visual landscape,
 - c) the impact of the proposed development on natural heritage.
- (ii) The applicant shall provide an assessment of whether a combination of existing sites within the port lands as identified in Section 4.4 of the Environmental Impact Statement would be able to provide for the short term needs of the port.

4.3.2 Water Conditions

- (i) The proposed development includes the installation of c.7 kilometres of potable water pipes. These pipes provide water to an extensive network of hydrants for fire fighting purposes. In addition, water is supplied for consumption purposes to the proposed buildings in the development. The applicant does not appear to have provided proposed consumption demands for the development. Information on proposed consumption demands should be requested.
- (ii) Given that the watermain network will be constructed in reclaimed land, consideration should be given to the possibility that some contamination may be present in the soil and the effect this may have on the design of the pipe system. Information in this regard should be requested from the applicant.
- (iii) The anticipated use of the proposed land may also be a factor in determining the type of water pipe to be used in the development. Information in this regard should be requested from the applicant.
- (iv) – (xvi) Standard Conditions.

4.3.3 Drainage Conditions

- (i) – (iv) and (vi) Standard Conditions.
- (v) The developer shall carry out a flood risk assessment of the works. This assessment must be submitted to the Drainage Division of Dublin City Council for written approval prior to commencement on site.

4.3.4 Roads and Traffic Conditions

- (i) All rail traffic generated, being at times agreed with the Roads and Traffic Division of Dublin City Council and the NRA. This will entail storage on site to allow non peak crossing of East Wall Road, and storage at CIE Freight Terminal to again allow inbound freight to cross at non peak traffic times.

[It should be noted that the report indicates that the Roads and Traffic Department consider the potential for increased use of rail transport from the facility to be the main traffic related concern arising from the potential increased use of the rail level crossing on East Wall Road and which could have a seriously detrimental impact on the operation of the Dublin Port Tunnel (DPT)].

- (ii) Details of the provision of public transport facilities for passengers from any new docking facility to link to and from the city centre are to be agreed with the Roads and Traffic Division and Dublin City Council prior to commencement of development.
- (iii) Dublin City Council shall require the use, maintenance and subsequent improvement of certain access routes throughout the construction of development and full improvement/re-instatement of all impacted roads to the standards specified by Dublin City Council. These routes are to be agreed to the satisfaction of the Roads and Traffic Department of Dublin City Council.

[In relation to (ii) and (iii) it should be noted that the report states that, while welcoming the upgrading and expansion of cruise traffic facilities, it is considered that upgrading of the roads and streets network would be required to facilitate the additional pedestrian/tourist activity arising].

4.3.5 Waste Management Conditions

- (i) Any waste moved off site shall be subject to a waste collection permit system.
- (ii) Any waste including contaminated or hazardous waste encountered shall be disposed of at an appropriate off site disposal/recovery facility.

- (iii) All traffic movements involving movement of hazardous waste to and from the proposed location should be by sea and not by land.

4.3.6 Financial Contributions

- (i) Standard S.48 Development Contribution.
- (ii) Standard Bond re: damages to roads, etc.

4.3.7 Agreement to regulate development of the lands

- (i) A legal agreement to regulate development of the lands is to be agreed between the developer and Dublin City Council. This agreement, under Section 47 of the Planning and Development Act 2000, will provide for matters including those relating to the management of the construction of the proposed development and impacts arising from dredging, drainage and related traffic movement and to flood mitigation and coastal protection measures which may arise from the reclamation of lands and subsequent development.

4.4 Other Matters referred to:

(i) Environmental Carrying Capacity

It is considered that an independent assessment of the sustainability and environmental carrying capacity of the proposed development should be carried out.

(ii) Fire Requirements

It is indicated that there is no objection subject to adherence to rules/statutory obligations etc.

(iii) Community Gain

Proposal is welcomed. It would allow for a comprehensive management policy to be implemented with benefits for amenity users and biodiversity.

5.0 PRESCRIBED BODIES SUBMISSIONS (AND OTHER PUBLIC BODIES)

5.1 Department of Environment, Heritage and Local Government (DoEHLG) – Archaeology

Includes the following:

- The proposed development is located within an area of extremely high underwater archaeological potential and it is likely that significant archaeological remains will be uncovered during dredging works. The EIS fails to highlight the potential for negative impacts.
- Conditions recommended to be attached to any grant of planning permission in relation to the following:
 - Further underwater archaeological assessment required prior to any dredging works, in particular in relation to identified anomalies S3 and S4 and in the area along the eastern and northern boundary of the development highlighted as been susceptible to erosion.
 - The shipwreck located within the proposed development area to be subject to full archaeological recording, excavation and removal prior to construction works proceeding. Post assessment treatment of the wreck to be decided by DoEHLG and the National Museum of Ireland.
 - Further geophysical work to be carried out of the proposed development area prior to construction works proceeding.
- Archaeological monitoring to be carried out during dredging and construction works which impact the seabed.
- An erosion monitoring programme to be set up to monitor the effects that the development will have on the surrounding seabed and potential archaeology during construction works and after development completion.

5.2 DoEHLG – Nature Conservation – The NPWS

Includes:

- Proposed development is partly within the South Dublin Bay and River Tolka Estuary SPA, and will also be circa 300 metres from the mooring dolphins supporting nesting terns in the SPA during the summer months.
- While not within any cSAC's the provision of a navigable channel for the Clontarf Yacht and Boat Club (CYBC) is within the North Dublin Bay cSAC.

- The proposed development, therefore, has the potential to impact on an SAC and an SPA (collectively known as Natura 2000 sites).
- The EIS incorrectly states that the development is located within the North Dublin Bay SPA.
- The statement that Sections 7 and 8 of the EIS provide all the information necessary for an appropriate assessment (Article 6 Habitats Directive) would appear not to conform to EU Guidelines that require such assessments to be clearly distinguishable and identified within an EIS or be reported separately.
- In relation to cumulative impact some current projects, such as a new telecommunications cable and phases 1 and 2 of Dublin City Council's Sutton to Sandycove (S2S) project, are omitted.
- The rediscovery of Sea Pea is significant as this is a protected plant under the Wildlife Act. The proposed removal and translocation to a new habitat is noted.
- The national review of Ireland's SPA network included the enlargement of the South Dublin Bay and River Tolka Estuary SPA (formerly the Sandymount Strand/Tolka Estuary SPA).
- The EIS indicates that the area of Intertidal habitat that would be lost is approximately 23.3 hectares, representing 8.1% of the Tolka Estuary and 1.2% for Dublin Bay as a whole. No calculation is provided for the percentage loss to the total intertidal resource of the South Dublin Bay and River Tolka Estuary SPA.
- It is standard practice for the status of a wetland site to be presented in terms of a five year average of peak counts for each species. The EIS assessment was not based on peak numbers recorded on the site as this was considered to over-estimate its importance due to recording of atypical high counts and that the limited availability of the site on extreme low tides would not be taken into account.
- As an alternative, the assessment was based on an annual index of cumulative usage of the areas. This method is more mathematically complex and more precise, but it requires a large amount of survey effort to be reliable given that water bird populations on Irish wetlands are at their highest during the winter months, and cognisant of the difficulties involved in counting the study area during these months due to short daylight and the low frequency of very low tides, an insufficient number of counts were undertaken during the period October – January. This is contrasted to some degree to the survey effort during months when water bird populations would not be as abundant.

- The recording of the Common Tern, an Annex 1 species, on the site in nationally important numbers is noted as is the recording of a flock of Great Crested Grebe at the edge of the site.
- From the data in the EIS it is evident that the site supports high densities of Oystercatcher, Curlew and Turnstone, species specifically listed as of special conservation interest in at least one of the two SPA's for Dublin Bay. Other such species listed for the South Dublin Bay and River Tolka Estuary SPA were also recorded in varying numbers. The EIS describes these records as 'events' rather than 'frequent users' of the site.
- It is evident that the site area is used by various species of birds throughout the year. It is also used when the tide has partially inundated the substrate and when the tide recedes enough for wading birds.
- It remains unclear how significant is the potential impact of habitat loss on each of the bird populations. Greater certainty will only be arrived at by increasing the survey effort over a longer period and further analysis of the data.
- It is not clear if an earlier proposal to dredge a channel to the CYBC is still a part of the proposal.
- Closer scrutiny needs to be brought to bear on the issue of disposal at sea of dredged sediments which contain a number of contaminants.
- The issue of marine mammals or cetaceans in Dublin Bay and how the proposed project would impact on them does not appear to be addressed. These animals, which feature in Dublin Bay, are protected under Annex IV, Habitats Directive through their natural range and as such do not require to be cited as a qualifying interest in a land/marine SAC designation.
- The Board's attention is drawn to the requirements under Article 6, Habitats Directive requiring an appropriate assessment. If a negative impact is identified a project may only be carried out if it is established that there are imperative reasons of overriding public importance (IROPI) for it to go ahead.
- The EU Commission guidelines for appropriate assessment procedures are particularly relevant in this regard. Also of particular relevance is the recent ECJ Judgement (Ref. C418/04) that clarified many issues pertaining to Natura Sites, not least the importance of compensatory habitat consideration. The judgement cites Ireland for not having given this matter due consideration in relation to the Port Tunnel consent and where the loss of habitat, at 2.2 hectares, was much less than in the current proposal.

- Having regard to the guidelines and ECJ Judgement, if this project were to be given favourable consideration, this could only be done against the background of the applicants meeting the IROPI and compensatory habitat requirements.
- A prudent course to take would be to formally inform the Commission in accordance with the guidelines before any land use consent is considered.

5.3 Department of Agriculture, Fisheries and Food

Includes the following:

- No works to take place on the foreshore without an appropriate foreshore consent.

5.4 Department of Transport

Includes the following:

- In July 2008, the Department appointed consultants to undertake a comprehensive study of the role of Dublin Port as provided for under the National Development Plan 2007 – 2013 (terms of reference enclosed). Final report due in early 2009.

5.5 National Roads Authority (NRA)

Includes the following:

- Notes the intended intensification of the use of the railway level crossing at East Link Road which is a key approach road to/from the Dublin Port Tunnel.
- Condition recommended that intensification of the usage of this level crossing be done in such a manner, and in consultation with the NRA, so as to minimise the impact on the operations and traffic capacity of East Link Road that in turn affects the operations/traffic capacity of the Dublin Port Tunnel.

5.6 An Taisce

Includes the following:

- **Failure to properly consider alternatives in Section 4 EIS**
 - only considers “do nothing” scenario and other port expansion locations in Dublin Port and other places.
 - requirements under EIA Directive must include the alternative of curtailing port capacity/activity so as to achieve a phased reduction in

imports/exports of greenhouse gas generating and resource wasteful products.

- **Failure of Chapter 13 to factor climate change and resource consumption**
 - climate is the paramount consideration in addressing this project.
 - a key preliminary requirement is to assess the CO² equivalent emissions generated by the increased international shipping and increased industrial production in other countries which this development would produce, and increased cruise liner traffic.
- **Inadequacy of Section 13 EIS to assess the impact on national climate emissions and transport**
 - there is a need to provide data on the emissions from increased land based transport that would be generated by the proposed development.
- **Incompatibility of Proposal with SPA Designation**
 - The application site is within an extended SPA boundary following an ECJ Judgement against Ireland.

5.7 The Dublin Transportation Office (DTO)

The proposed development is considered to be premature pending the completion of the “Strategic Review of Dublin Port and its Future” currently being undertaken by the Department of Transport.

6.0 SUBMISSIONS/OBSERVATIONS (GENERAL PUBLIC)

6.1 Public Representatives

6.1.1 Finian McGrath, T.D.

Objection to the proposed development by reference to:

- Sufficient existing capacity within the port.
- Environmental, flooding and climate change issues.
- Bremore Port as potential alternative.
- The need to ratify the Aarhus Convention that links environmental and human rights.
- U.N. Principal 10 Rio Declaration re. Citizen participation/access to information on the environment.

6.1.2 Richard Bruton, T.D.

Objection to the proposed development by reference to:

- The government has not sanctioned the project and appears to be sceptical by reference to:
 - the recent extension of the Special Protection Order to the entire Dublin Bay.
 - the new requirement under the Planning Acts to make foreshore development subject to planning permission and Dublin City Council's drawing up of a development plan for the bay.
 - the recent establishment of a special task force to prepare a master plan for the entire bay and on which the Port Board is represented.
- The dismissal of the option of developing Bremore as an alternative port location.
- The inadequate consideration of options to terminate long-term leases within the port for purposes such as the grain trade and that pre-empt use of existing lands.
- The aggravation of the flood risk along the Clontarf seafront and which does not appear to be adequately assessed.
- The development being premature and inappropriate.

6.1.3 Ivor Callely, Senator

Objection to the proposed development by reference to:

- The need to protect the amenity value of Dublin Bay.
- The retention of the current port area and the development of Bremore to meet any increasing capacity demands.
- Query re the ownership of the land proposed for the development.
- Environmental impacts, in particular in relation to flooding and the SPA.

6.1.4 Sean Haughey, T.D. Minister of State

Objection to the proposed development by reference to:

- National policy has not yet been finalised, reference:
 - Minister for Transport proposed comprehensive study on the role of Dublin Port.
 - Dublin City Council is preparing a plan for Dublin Bay.
 - Minister for Environment, Heritage and Local Government has announced a Dublin Bay Area Task Force and has initiated proposals for an SPA re-designation of Dublin Bay.
- The existing underutilised landbank in the port.
- Injurious impacts on the scenery, flora and fauna and visual amenities and increased noise levels.
- Likelihood of increased flooding and silting.

6.1.5 Senator Paschal Donohoe

Objection by reference to:

- Increased flooding risk/lack of assessment in application.
- Prematurity re proposed SPA.

6.1.6 Councillor Naoise O'Muirí

Objection by reference to:

- Prematurity re Department of Transport Study.

- Competition/monopoly issues.
- Changed economic climate obviating the need for additional capacity – Ref. Irish Maritime Development Office.
- Pre-application Inspector’s advice re alternatives and use of under-used sites within the port.
- Lack of evidence of ownership.
- Iarnród Eireann’s policy of withdrawing from rail freight.
- Disposal of dredged material.
- Impact of dredging on benthic flora and fauna and inconsistency with Dublin City Council’s “A Vision for Dublin Bay” re ecological health of the bay.
- Inadequate examination of traffic impacts.
- Damage to amenity.

6.1.7 Thomas P. Broughan T.D.

Objection by reference to:

- Reduction in visual and environmental amenity for residents of Clontarf, Raheny, Kilbarrack, Sutton and environs.
- Traffic impacts/lack of provision for enhanced access.
- Prematurity re three studies.
- Lack of input from Fingal and Dun Laoghaire County Councils.
- Need for appropriate coastal zone management protection for Dublin Bay as a key asset of Ireland’s coastal zone.
- Absence of climate change cost/benefit analysis. Reclamation is unsuitable. Flooding risk. Prof. John Sweeney/EPA recommendations.
- Absence of comprehensive hydrology study of Dublin Bay.
- May have been more appropriate to use normal planning procedures.

6.1.8 Councillor Gerry Breen

Objection by reference to:

- Proposed SPA.
- Flooding risk. Ref. EPA recommendation.
- Monopoly issues.
- Prematurity re three current studies.
- Applicants' capacity projections consistently inaccurate. Issue of efficiency.
- Bremore Port as alternative.

6.1.9 Councillor Deirdre Heaney

Objection by reference to:

- Existing capacity, need for 24-hour operation.
- Increased traffic – East Wall especially.
- Loss of visual and recreational amenity.
- Alternatives, including Bremore Port.
- Flooding impacts – not addressed.
- Noise and air pollution.
- Impact on flora and fauna inside SPA.
- Construction impacts, disposal of dredged material off site.
- Two government reports awaited.
- Existing unused lands.
- Proposed 24-hour operation – increased noise pollution.

6.1.10 Councillor Bronwyn Maher and Donal Cooney

Objection by reference to:

- Proposed SPA.

- EPA recommendation re climate change.
- Bremore Port for extra capacity.
- Premature re Department of Transport Strategic Review.

6.1.11 Terence Flanagan T.D.

Objection by reference to:

- Amenity, recreation, heritage concerns.
- Breach of EU Directives re wildlife, birds and habitats.
- Prematurity re current studies.
- Risk of flooding, Ref. Prof. John Sweeney's recommendation.
- Land subject to public rights and amenities.
- Existing adequate capacity.
- Bremore as alternative.
- Impact on SPA's.

6.2 Non-Governmental Organisations

6.2.1 Bird Watch Ireland

Objection by reference to:

- European case law has established that the area of the proposed development is of significant importance to the integrity of the South Dublin Bay/Tolka Estuary SPA and North Bull Island SPA. The area has over many years been identified for potential development and was originally excluded from the boundaries of the designated sites – a point on which the ECJ recently condemned the Irish Government (Ref. C418-04).
- The data provided is inadequate to carry out an appropriate assessment under the Habitats and Birds Directives and by reference to the EU Commission Guidelines. Reference also to DoEHLG Guidance, case-law and various member state publications on appropriate assessment.
- Potential significant adverse effects due to:
 - the extent of the area of habitat loss of c.119 acres. This needs to be fully assessed in terms of habitat type and prey availability and tidal sediment regime.

- loss of integrity, structure and functioning to the SPA site as a whole. The relative size of this intertidal area, and the availability of mud flat habitat at only extremely low tides, does not mean the site is unimportant for bird interests. Data needs to be collected to address this.
- cumulative impacts of plans and projects. The lands lost to the construction of the Port Tunnel, which the ECJ stated should also have been included within the SPA, and other infill and dredging projects also need to be taken into account.
- The lack of full consideration of alternatives. The project is not of overriding public interest.

6.2.2 Dublin Bay Watch

This submission is in objection to the proposed development

The submission includes, as appendices, the following expert reports and other documentation:

- (i) Planning Report by Brian Meehan & Associates, Planning Consultants (App. 1).
- (ii) Economic and Efficiency Planning Reports by Jerome Casey of Griantec Teoranta, Environmental Research and Design (App. 2).
- (iii) Impact of the proposed Dublin Port Infill and Dredging proposals on the SPAs of Dublin Bay – A review of information presented on the Dublin Gateway EIS by Jackie Hunt, MSc, MIEEM (App. 3).
- (iv) Affidavit and map concerning ownership of the land (App. 4).
- (v) Maps and measurements by O.S. Ireland and Thomas Nesbitt, Dip. Geo-Survey M.I.S.

The submission includes some background information on Dublin Bay Watch's involvements in relation to Dublin Bay, including its role in bringing the case in relation to the boundaries of the SPA (Ref. ECJ C418-04), and in relation to the history of Dublin Port development.

The grounds of objection are set out under a number of headings as follows:

Planning Issues

- It is not accepted that there is a capacity issue at Dublin Port – this is a national issue and not a single port issue.
- NSS reference to alternative locations for some current and future Dublin Port activities.

- RPG GDA reference to more efficient use of existing land at Dublin Port and the role of Drogheda Port as an alternative.
- Inappropriate to suggest that Dublin City Development Plan Objective CUF6 has been overtaken by events in the legal sense. There are no zonings, policies or other objectives in the plan to support the proposal.
- NDP reference to Government study of the role of the port and the Department of Transport review currently underway.
- The community gain proposal would not represent any gain for the community as the lands in question are already protected as part of the North Bull Island SAC/SPA.

Sustainable Development Perspective

- Dublin Bay Watch is not seeking the relocation of Dublin Port, but an acknowledgement that there are wider national, ports, environmental, social and economic issues to be dealt with in Dublin Bay than only the needs of Dublin Port.
- The NSS refers to alternative locations for additional capacity in the event of capacity constraints. This is currently available at other east coast ports and in the proposed development at Bremore.
- The proposed development is contrary to the key tenet of the NSS to promote more balanced regional development.
- The RPG GDA refer to the need for completion of the orbital motorway around Dublin together with a port access route from the south. The capacity of the city to sustain such development and the effects on the environment would be significant.
- The RPG GDA put demands on Dublin Port to review and make more efficient use of lands under its control.
- The NDP refers to the Fisher Report 2006 in relation to the non-issue of capacity until 2014 at the earliest and only then in the event of no further developments on the east coast and especially at Bremore. Port developments and capacity issues are matters relevant to the overall development of Irish ports.
- The Dublin City Council study looked at the entire bay area in the context of the needs of the capital city. This is critical to any examination of Dublin Port. The report recommended the relocation of most of the port and Bremore is best placed to be that location.

- The Department of Marine study in 2004 clearly outlined the way forward to deal with future capacity issues through mergers, partnerships and efficient operation.
- It is self evident that Dublin Port lands are not used to capacity due to inappropriate leasing arrangements for oil, gas, container and vehicle storage, office space and a power station.
- The Fisher Report indicated that LoLo traffic is currently operating at 68% capacity and RoRo is at 74% capacity so that additional capacity at Dublin Port is not a concern at this juncture.
- The Irish Maritime Development Office (IMDO) Report (September 2008) indicates cargo volumes declining in the first half of 2008.
- Dublin Port productivity rates are below acceptable levels – reference report of Jerome Casey (App. 2).
- Options such as unloading of oil at sea to a pipeline and/or the removal of the oil storage facility to another location would have a dramatic impact on capacity.
- Vessel arrival and departure numbers have remained largely static during the economic boom, 2000-2007. Tonnage has grown due to larger vessels.
- There is no capacity issue – the issue is to accommodate larger vessels. The proposed deepwater port at Bremore could accommodate these.
- Other growth opportunities have been identified at Rosslare, Greenore, Shannon, Foynes, Waterford and Cork.
- The KPMG study ‘Economic Impact of Dublin Port’ has some very revealing data on the origin/destination of imports/exports through Dublin Port. The figures show a very considerable volume of trade could and should be diverted to other ports.
- The relocation of major distribution centres outside the M50 supports alternative port developments as viable and efficient.
- It is not in the national interest for Dublin Port to monopolise up to 75% of the ports market.
- As only 100 acres of port lands are currently dedicated to working port activities the proposed development would increase capacity by 50%. The proposed volume throughput for the new area would exceed the total number of LoLo TEU’s (twenty foot equivalent units) handled in Ireland in 2007.

- The current economic decline will have a serious knock-on effect for the shipping industry and Irish ports.
- The modern strategy for port development is based on a polycentric model with Dublin Port as a hub, plus a couple of satellite ports, providing an integrated port network for the region and beyond.
- An appraisal methodology to evaluate this modern strategy against the traditional strategy, as proposed in this instance, involving infill, indicates the modern strategy as the preferred option when set against Government economic, environmental and spatial objectives.
- In relation to transportation, while the Port Tunnel has substantially improved access to the port, a combination of other options, including rail, pipeline, use of other ports and transfer of non-essential activities out of the port, would further alleviate delays and enhance the capacity of the port.
- Although the use of rail is mentioned in the proposed development, it is not given serious consideration.
- The Scenario Foresight Process carried out by the National Institute for Transport and Logistics (NTL) for the Transport Umbrella Group (TUG) at Dublin Port recommended extended working over a 24-hour day to provide relief to traffic congestion problems. Earlier starts and later finishes would also produce worthwhile results.
- Port Tunnel traffic has added significantly to traffic congestion on the M50.
- The proposed expansion of Dublin Port would have an effect on the volume of traffic and road infrastructure, employment and related housing and social infrastructure as well as on the environment.
- The massive existing landbank at Dublin Port is currently inappropriately used and/or underutilised.
- The replacement of many of the non-port related uses with high value uses and activities, including housing and service industries would have huge economic benefits for the city. This would also facilitate the development of the bay and port area for tourism, including cruise and leisure shipping. The bay generally could be developed as a heritage area.
- There is concern that the pollution levels arising from the project, when added to existing levels, could exceed maximum limits in adjacent residential neighbourhoods.
- There is a concern in relation to noise impacts, not necessarily by reference to average hourly levels (as dealt with in the EIS), but as a result

of individual loud bangs associated with container stacking. The phenomenon of noise travelling across a water body is not taken into account in the EIS. The EIS does not deal with the real increase in noise generation or the effects on close receptors, particularly at night.

- The aspect of most concern is the continued industrialization of the vista, contrary to the zoning for the area, and impacting negatively on visual amenity.

Environmental Issues

- Dublin Bay is a site of national and international importance because of the diversity of birds it hosts.
- As a proposed SPA, the Bay is protected under European Law, Birds and Habitat Directives.
- The proposal is within the recently proposed SPA. The development, both during construction and operation, including constant dredging, would have a devastating impact.
- A proposed SPA has greater legal protection than a designated one.
- Exemption conditions for development in an SPA are strict – imperative reasons of overriding public interest and where there are no alternative solutions (Ref. Bassess Corbieres and Waddensee Judgements and ECJ C-418/04).
- The proposed development should be considered in relation to Annex II – the Precautionary Principle.
- In relation to flooding and climate change the recommendations of Carter (1990b) as referenced in the EPA report of 2003 “Climate Change, Scenarios and Impacts for Ireland” remain a sensible approach.

Ownership

- The land in question is the property of the Vernon Estate.

Accuracy of Measurements

- The map provided by the applicants is not exactly to scale so that different area measurements for the site area are generated.

The attached expert reports include the following: -

(i) Planning Report by Brian Meehan & Associates, Planning Consultants

This report provides the basis for the planning issues raised and as referred to above. It also includes:

- By reference to the Planning Report submitted with the planning application it is submitted that the proposed development is contrary to the provisions of the various planning and other policy documents referred to in that report.
- In accordance with a “plan-led” approach it is suggested that a development of the nature and scale proposed should be explicitly supported by the various policy documents referred to and, in particular, by the statutory Development Plan – The Dublin City Development Plan 2005 – 2011.

(ii) Economic and Efficiency Reports (2004 and 2008) by Jerome Casey of Griantec Teoranta, Environmental Research and Design

These reports provide the basis for many of the issues raised under the heading “Sustainable Development Perspective” and as referred to above.

The executive summary of the 2004 report includes the following: -

- Against a traditional port development strategy of infilling the Bay, this report advocates a modern development strategy, based on increased port productivity and the diversion of port traffic from Dublin to satellite ports in the region.
- Dublin Port’s traditional development strategy is inferior to the modern strategy on economic, environmental and spatial grounds viz.
 - In economic terms, Dublin’s productivity in handling containers is only 32% that of benchmark EU container ports. Traffic congestion is a much greater constraint on Dublin’s growth than port capacity; the traditional strategy would increase congestion while the modern strategy would help to relieve it.
 - On environmental grounds the traditional strategy is barred from proceeding because of a European Court of Justice Judgement on the Birds Directive; there is no such bar under the modern strategy.
 - On spatial grounds, the modern strategy implements the National Spatial Strategy, while the traditional strategy subverts it.
- It is recommended that the port shareholder and port management adopt a modern strategy of increased productivity and polycentric development.

Only such a strategy can serve the needs of the city as well as needs of the port.

The 2008 report includes the following: -

- Productivity at Dublin Port fell between 2002 and 2007, a period of rapid growth. There is a compelling argument for requiring Dublin Port to significantly close the productivity gap (with EU/UK benchmark ports) before consideration would be given to add more capacity by infilling the Bay.
- Growth in unitised cargo over the next five years would do well to average 2% p.a. In this even, Dublin Ports container productivity would not have regained its 2002 benchmark level by 2013. Apart from productivity considerations, there will be no absolute demand for a capacity increase in Dublin Port in the medium term.
- The Board should seriously consider the negative spill-over effects on the city economy of an increase in port capacity, and consequently in port traffic, at its present location.
- The redevelopment of the port lands would be a “demonstration project” for intensifying settlement and productivity in the city and the last chance to modernise Dublin’s current highly unsustainable physical settlement pattern.

(iii) Ornithological Report by Jackie Hunt, MSc, MIEEM

This report provides the basis for the environmental issues raised and as referred to above. It also includes:

- The following points are important when considering the current application for reclamation and berth creation by Dublin Port Company,
 - Dublin Bay is a wetland of international importance for wintering waterbirds.
 - Most of Dublin Bay is a Special Protection Area for birds.
 - The proposed development site lies within the recently extended South Dublin Bay/Tolka Estuary SPA.
 - The proposed reclamation and berth creation site is recognised as an integral part of the Tolka Estuary wetland system (Ref. ECJ Case C-418/04).
 - The conservation interest for this SPA takes into account that the Tolka Estuary as an integral part of the Dublin Bay system.

- The conservation and qualifying interest for the SPA focuses on a number species which occur in nationally and internationally important numbers in the Tolka Estuary, some of which are Annex I species.
- The conservation and qualifying interest for the SPA also recognises that wetlands and waterbirds are a special conservation interest for this site.
- Developments within an SPA must be subject to an appropriate assessment and can only proceed where there is no significant adverse effect on the integrity of a site (unless there are reasons of over-riding public interest in which case compensatory measures must be provided).
- The significant nature of an effect is linked to sites conservation objectives.
- Activities can be authorised in SPAs only where they will not adversely affect the integrity of a site and only where “no reasonable scientific doubt remains as to the absence of such effects” (Ref. ECJ C-127/02).
- Impacts arising from the proposed development that would specifically impact on the South Dublin Bay and Tolka Estuary pSPA are: -

Loss of intertidal habitat due to

- reclamation
- dredging for berth creation

Changes to intertidal habitat due to

- Sediment deposition and erosion resulting from changes to water currents
- Increased sedimentation due to dredging

- There will be a permanent loss of 13.77 hectares of intertidal habitat arising from the proposed reclamation area of 22 hectares (the remainder of the existing area being subtidal).
- A total of 9.25 hectares of intertidal habitat will become subtidal habitat as a result of the dredging for berth creation to the east of the reclamation site.
- The total area of intertidal habitat loss would be 23 hectares, equivalent to 1.1% of intertidal habitat within Dublin Bay and 6.6% within the Tolka Estuary.
- Modelling, even with the modified dredge design, predicts changes to bed shear stress, leading to erosion and accretion within the adjacent intertidal habitats of the Tolka Estuary. It is predicted that approximately 10.75 hectares of lower intertidal habitat will be affected by a net increase in bed shear stress and potentially erosion.

- Dredging activity over a period of seven months will lead to:
 - A noticeable suspended sediment plume moving northwards on flood tides into the Tolka Estuary.
 - Noticeable deposition of sediments in areas within 200 metres of dredge points, within the lower intertidal habitats.
 - These changes will also take place during maintenance dredging but on a smaller and more localised scale.
- An evaluation of the Tolka Estuary's wintering birds is summarised as follows: -
 - The estuary supports nine species of wintering waterbird in numbers of national importance.
 - The Tolka Estuary consists of two main intertidal areas, the Bull Wall Sands (mouth of estuary) and the Tolka Basin (upper reaches).
 - The proposed reclamation site lies within the lower intertidal of the Bull Wall Sands and is used mainly by Oystercatcher, Curlew and Turnstone.
 - The proposed berth creation also lies in the lower intertidal area of the Bull Wall Sands. Limited data shows this area to be used by Knot, Golden Plover, Dunlin and possibly Bar-tailed Godwit at extreme low spring tides.
 - The limited data on bird use of the Bull Wall Sands as whole shows it to support 10 species of wintering waterbird, with four species Knot, Golden Plover, Dunlin and Bar-tailed Godwit occurring in numbers of national importance.
 - Wintering populations of waders in Ireland are generally decreasing. While this is mainly due to factors at a population flyway level significant modification of several wetland sites in Ireland is also of note.
- The benthic community of the proposed reclamation site and berth dredge area was characterised by a higher diversity of fauna compared to the rest of the Tolka Estuary.
- The evaluation of impacts includes the following commentary: -
 - (i) **Loss of feeding habitat due to reclamation**
 - While it is unarguable that the reclamation site is only available to feeding birds on extreme low spring tides it does contribute to the overall feeding resource of the Tolka Estuary and Dublin Bay which is

important to nationally and internationally important populations of wintering birds.

- When available the reclamation site has been found to support a higher density of birds than the rest of the Tolka Estuary.
- The benthic fauna of the reclamation site has been found to support a higher diversity of species than other parts of the Tolka Estuary.
- It seems likely that when available, the quality of feeding habitat at the reclamation site is good when compared to the rest of the estuary. This can be explained partly by the fact that birds do not exploit this area on every low tide.
- After reclamation this feeding area will no longer be available, removing this section of good feeding habitat from the estuarine system. While the impact of this loss in terms of bird usage has been assessed in the EIS, the value of the feeding habitat when available has not been considered as part of this assessment. The significance of losing good feeding habitat is obviously greater than if losing poor feeding habitat.

(ii) Loss of feeding habitat due to dredging

- The EIS presents no specific data on use of the berth dredge area by wintering birds. This area will be lost to feeding birds, in the same way, as the reclamation site will be lost to feeding birds.
- EIS, Appendix 13, Figure 3 gives a general indication of the use of the berth creation area by Curlew, Dunlin, Golden Plover and Knot but the use of the area by these species has not been considered in the EIS.
- Benthic samples taken from the berth creation area show this area to support a number of Group C samples, which are those with a higher diversity of species, than the rest of the estuary. The fact that the berth creation area, like the reclamation site, may support comparatively better feeding habitat than the rest of the estuary has not been considered in the EIS.

(iii) Changes to intertidal habitat due to changes in current velocity and sediment movement

- The proposed reclamation will lead to a net increase in bed shear stress in three particular areas covering an area of 10.75 hectares of lower intertidal habitat. These areas are likely to be subject to erosion.
- Where erosion takes place, this may lead not only to a change in sediment type but also to a change from intertidal to subtidal habitat. This will represent an effective habitat loss for feeding birds.

- While the EIS considers there may be some impact on feeding birds, this is in very general terms only. As stated some birds prefer particular prey species, and so will be affected by changes to the sediment more than others. Without considering distribution data on bird use of the Tolka Estuary or a more detailed assessment of prey availability, the impacts of changes to the sediments on birds, cannot be fully assessed.
- Much of the impacts predicted due to erosion and deposition are considered less significant in the EIS, because the changes will mainly affect the lower intertidal habitats. Lower intertidal habitats contribute to the overall feeding resource of an estuarine system. These habitats may also be important in terms of invertebrate recruitment. The EIS does not recognise the value of the lower intertidal habitat, despite the data they have presented in relation to increased benthic diversity and bird density in these areas.

(iv) Changes to intertidal habitat due to sediment deposition and dredging

- There is no assessment of the impact on benthic communities around the dredge discharge point. It is stated that an area within 300 metres of the discharge point deposition will be more significant. The discharge points lie within the proposed dredge pocket and increased sedimentation will impact on the lower intertidal habitat of the Bull Wall Sands.
- While impacts to the benthic community north of the dredge area are recognised, their significance is lessened by the fact that feeding in this area is considered to be “limited”.
- The reasons for describing the feeding in this area as being “limited” are unclear. The Bull Wall Sands provide feeding and roosting habitat for 10 species of birds during the winter months. Benthic survey data shows this area to support communities characterised by species that are important prey items for feeding birds.
- It is also stated that as this area supports a fine sediment community, again the significance of increased sedimentation will be lessened. However this fine sediment community supports bivalve molluscs and tube dwelling polychaetes, species which will not be tolerant of smothering and which are part of the feeding resource which the Bull Wall Sands provide.
- While mitigation is proposed, deposition within the intertidal will still take place, with changes in the lower intertidal around the dredge discharge points being greatest.
- Impacts due to dredging will be on-going as maintenance dredging of the eastern berth will be required.

(v) Cumulative Effects

The EIS has considered each of the above impacts separately and found the significance of each impact to be minor to negligible. However, when each of these impacts is considered, together, it is clear that the Tolka Estuary will undergo significant changes as a result of the proposed development. The cumulative effect of these changes has not been considered in the EIS.

- By way of conclusion it is stated that

While this report cannot conclude that significant adverse effects will result from the proposed port development in the Tolka Estuary SPA, it can conclude that the EIS has not provided sufficient information to prove, beyond reasonable scientific doubt, the absence of significant adverse effects, for the reasons as referred to above.

6.3 Companies

6.3.1 Pan Andean Resources

Objection to the proposed development by reference to:

- Development being premature and wrong.

6.3.2 Cooley Distillery PLC

Objection to the proposed development by reference to:

- Development being premature, unnecessary and wrong.
- There are better alternatives.

6.3.3 Thomas Looney & Co. Solicitors, 1 Coolock Village, Malahide Road, Dublin 5

Objection to the proposed development by reference to:

- Project not of strategic economic or social importance to the state or region in which it is located by reference to national strategy or Regional Planning Guidelines.
- Location within a residential area.
- Ref. EPA 2006 Report, recommendations re sea level rise and reclamation.
- Three studies currently underway.
- SPA designation.

- Recommendations by various government agencies that port be moved to Drogheda.
- Lack of evidence of title.
- Flooding risk on Clontarf Road.
- Sufficient existing lands.

6.3.4 John Smith and Parkway Properties, Representatives of landowners at Bremore

Submission lodged by Simon Clear & Associates, Planning and Development Consultants, on behalf of the above.

The submission is in support of the development of a deepwater port at Bremore as an alternative to the proposed development. The latter is stated to involve costly land reclamation and overdevelopment at Dublin Port and to require significant environmental and ecological considerations. It is submitted that a comprehensive cost benefit analysis is required to establish the optimum proposal, including consideration of alternative locations.

The case in support of the Bremore Port Development refers to the following:

- Location 30 kilometres north of Dublin City Centre.
- Close proximity to existing strategic transport infrastructure, including the M1 Dublin – Belfast Corridor and the Dublin – Drogheda – Belfast high frequency commuter and freight railway.
- A landbank of c.60 hectares east of the existing rail line has been reserved for Phase 1 of an integrated 24-hour deepwater port and logistics centre. A further 100 hectares between the rail line and the N1 is available for further port development, logistics and related development.
- NSS references to alternative locations and congestion at Dublin Port.
- Enhanced connectivity via proposed Outer Orbital Route (around Dublin) and proximity to Dublin Airport.
- NDP requirement for a comprehensive study of the Dublin Port area – Department of Transport Strategic Review of Dublin Port and its Future, currently underway.
- Fingal Development Plan supports – Local Objective No. 1, Objectives Balbriggan 8 and 19.
- Precedents for port relocation throughout Europe. Examples include Helsinki, also Waterford, new port at Belview.

- A masterplan currently underway. Envisaged that Bremore Port will be operational c.2012.
- Elimination of current practice of second handling.
- Capacity to accommodate larger ships than Dublin Port can currently facilitate.
- Relief of congestion at Dublin Port and increases to national capacity for Ro-Ro and Lo-Lo.
- Capacity would be 1.5 times that of the existing Dublin Port facilities.
- Vastly increased productivity and capacity in wider regional and national import/export context.
- Existing Dublin Port lands undervalued and suited to city centre land uses.
- The strategic coastal landbank at Bremore affords the opportunity for associated warehousing, storage, commercial and residential development.

6.3.5 Bremore Ireland Port Limited

Submission lodged by John Spain & Associates, Planning and Development Consultants, on behalf of the above.

The submission is stated not to be an objection to the proposed development.

It is stated that the proposed development will not prejudice the future development of Bremore Ireland Port.

The submission addresses some of the issues raised by the applicants in respect of the proposed Bremore Port.

The appropriateness of bringing forward the application at this time and the wisdom of continuing to expand activities at Dublin Port is questioned.

(i) The submission outlines the current status of the Bremore Port proposal by reference to the following.

- The Fisher Reports' (2006) references to capacity issues in the Irish ports sector, including references to the Bremore proposal and developments at the Port of Cork.
- With the recent refusal of planning permission for the Port of Cork at Ringaskiddy (An Bord Pleanála Ref. PL04.PA0003) the Bremore development is the single remaining key proposal identified in the Fisher Report to address projected unit load capacity constraints.

- The Bremore Port comprises the construction on a phased basis of a new integrated multi-modal deepwater port to cater for up to 50 ml. Tonnes of annual freight traffic, including Lo-Lo, Ro-Ro, break bulk and bulk cargo. It would also handle passenger traffic.
- The port will have an operational design depth of 14 M CD – the deepest shipping berths on the east coast.
- The port will have 24-hour marine access.
- Vehicular access via new link road to the M1 Motorway and rail access via new rail spur to the Dublin – Belfast rail line.
- Envisaged that Phase 1 will be operational in 2013.
- Bremore Port Limited is a fully approved Government joint venture PPP between Drogheda Port Company Limited and Castlemarket Holdings Limited.
- The proposal is the subject of a current application to the Board – Ref. PL06F.PL0039.

(ii) It is submitted that the proposed development is premature pending the Department of Transport Study – “Strategic Review of Dublin Port and its Future” and the report of the Dublin Bay Taskforce by reference to the following:

- The review includes an examination of feasibility and cost benefit analysis of various scenarios and is due for completion by the first quarter of 2009.
- The review arose from a requirement of the NDP.
- NSS reference to capacity restrictions at Dublin Port and potential for possible relocation.
- RPG GDA reference to landside access issues at Dublin Port, trends of growth in unitised trade and ship size and the potential of Drogheda port as an alternative.
- The Dublin Bay Taskforce established by the Minister under the aegis of the Dublin Regional Authority, terms of reference. Its first report is due circa end 2009, early 2010.
- The Dublin City Development Plan Objective CUF6, to prepare a plan for inner Dublin Bay, including the port area, and related Policy H47. Reference to planning applications for foreshore development being deemed premature pending preparation of the plan.

- *Dublin Bay – An Integrated Economic, Cultural and Social Vision for Sustainable Development* is a first stage of a strategic framework plan for Dublin Bay, the final masterplan being prepared by Dublin Bay Taskforce. The reports conclusion in favour of full relocation.
- The South Bank Strategic Development Framework 2002 and its recommendations re port relocation.

(iii) The submission addresses the issues raised in the application in relation to Bremore Port by reference to the following:

- The alternatives section of the EIS being flawed is not providing a detailed assessment of alternative port locations. The Bremore proposal was arrived at after in-depth assessment of all potential east coast locations, including Dublin Port.
- The applicant's figures for capacity etc. at Bremore are outdated and incorrect.
- Comparative distances to the M1/M50 interchange are 10 kilometres (Dublin Port) and 24 kilometres (Bremore). The latter would not be subject to urban traffic congestion issues and would more conveniently service the emerging spatial distribution of major distribution centres, business and industry within the GDA and nationally.
- The trend for major distribution centres to locate outside the M50 for delivery on to both Dublin businesses located within the M50 and to those located outside it within the GDA and the rest of Ireland.

(iv) The submission addresses the existing and future operational constraints of Dublin Port by reference to the following:

- The proposal would only provide for a further 10 years of forecasted trade growth – it is not in the national interest to continue to develop a port location which cannot expand into the future.
- In the absence of further dredging to the Dublin Port channel, which is not provided for in the application and which may be impossible due to the Dublin Bay sewer pipeline, the proposed development will not be able to accommodate the larger vessels for which it is designed. The international trend is towards even larger vessels.
- There is no consideration given to the relatively narrow width of the existing fairway approach channel to Dublin Port and the implications for efficiency and safety in the context of larger shipping vessels.
- City port relocation is a common trend throughout the world.

The points raised at (iv) above are based on a report prepared by BMT Baxter Eadie Limited, International Ports and Maritime Consultants (included as Appendix 3 in the submission).

The report includes the following:

Dublin Port Unit Load Facilities

- Query the EIS estimates for much higher capacity at the new terminal versus the existing terminals. They suggest the opportunity to achieve high throughputs at the existing terminals if the level of infrastructure investment proposed at the extension was provided elsewhere.

Alternatives

- The almost total lack of locations available for further development within Dublin Port means that after the proposed development is complete Dublin Port Company cannot expand the port facilities any further.
- Bremore Port will provide deep water for container ships up to 5,000 TEU capacity and the largest ro-ro vessel in operation.

Port Expansion ‘in-situ’ versus ‘relocation’

- Examples can be identified where port facilities have been moved from their urban site and alternatively where expansion has occurred contiguous to the original location. In the latter case the distinction can be made between those port facilities which are not accessed without disruption to the city and those that retain close geographical links to their urban populations. Justifications can be made for either alternative.
- The Planning Report submitted with the application presents a weak argument for in situ expansion and has not fully considered the potential economic and environmental benefits of a strategic relocation of the port.

Trends in Ship Size and Service Provision

- From its contention that the largest size vessel likely to be utilised at Dublin Port will be in the region of 2,000 TEU, and with a design draught of 11.0 metres for such a vessel, it is clear that the applicants do not consider that there is a case for providing facilities for larger vessels.
- Details of ships on order indicate the trend towards much larger container ships.
- All of the Great Britain and North Continent ports which handle feeder vessels can accommodate vessels substantially larger than 2,000 TEU. Ship operators, at present, are forced to use small vessels on routes calling at Dublin or other Irish ports due to draught restrictions.

- No major trade routes are serviced with ships of 2,000 TEU or less. Therefore, it must be concluded that Dublin Port Company does not foresee the day when ship operators serving such a route would call direct to Dublin.
- Feeder operation themselves will have to be cost effective to service the very large ships on the main routes which suggests the use of vessels considerably larger than those seen in Dublin today.
- Within the next five to seven years, it is likely that ship operators will be looking to introduce vessels of 2,500 – 3,500 TEU on services, including an Irish port, and it can be anticipated that soon after there will be interest in vessels up to 5,000 TEU.
- While it is unlikely that there will be similar increase in ro-ro vessels, with Dublin already served by some of the largest ferries in Northern Europe, ro-ro vehicle carriers used for the carriage of trade vehicles on deep sea routes and also from the Mediterranean may have a design draught of up to 9.5 metres and the proposed ro-ro berths do not appear to be designed for these.

Sea Approaches and Marine Facilities

- Given the restricted width of the approach channel to Dublin Port the predicted increase in large ships is likely to cause an increase in channel delays (for example, an increase in frequency of one-way operation only). This possibility is not addressed in the application.
- Given the declared channel depth for Dublin at CD 7.8 metres larger ships using the port must operate through tidal windows with a maximum depth of 11.9 m at MHWS. The proposed development will not be capable of accommodating the ships for which it has been designed, that is 2,000 TEU vessels with a typical draught of 11.4 metres, in the absence of significant dredging and which is not provided for within the planning application.

Vessel Manoeuvring

- Given that current flows in the area would be increased due to the reclamation the issue of vessel manoeuvring should not be overlooked.
- Given the separation distances it is probable that the operators at Poolbeg, directly across from the proposed new terminal, would insist on the use of tugs for lo-lo container vessels to reduce the risk of collision. This is an imposed cost likely to be resisted by container lines.
- The extent of the “footprint” of the manoeuvring area at the northern ro-ro berth gives rise to some concerns.

Marine Risk

- Further stress on the existing channel by larger ships is likely to add to the frequency of groundings, including the risk of vessel grounding on the Dublin Bay Pipeline which crosses the fairway channel but can have a build up over it of sea bed material of some 0.5 metres.
- The use of larger ships in a channel of questionable width and depth can only also add to the risk of collisions.

Land Transport

- Junction RFC rating is misleading because one approach on the junction could be over capacity with the junction still staying within capacity. Several junctions in the locality are shown to be near/at/over capacity on this basis in the Traffic Impact Assessment (TIA).
- The TIA does not provide any assessment of journey time, vehicle delay and vehicle queuing at the junctions assessed.
- The TIA does not provide any methodology for trip generation calculations or any justification for the assumed trip distribution.
- The TIA did not use the DTO Model to determine impact on the network. No analysis of the change in traffic flows on links in the road network has been undertaken. Significant increases, attributable to the proposed development would occur on several links on the local road network.
- No rationale for the selection of junctions to be tested was provided. Assessments should have been undertaken for the year 2018, as well as 2013 and 2028 as provided.

6.4 Residents Associations etc.

6.4.1 Concerned Blackheath Residents Group

Objection to the proposed development by reference to:

- Increased flooding risk.
- Contrary to decentralisation strategy and exacerbation of Dublin's traffic problems.
- The adjacent reclaimed land and its grotesque tank farm which disfigures the bay and in the past was the scene of an extremely serious fire.
- The amenity value of the bay.

6.4.2 Clontarf Residents Association

Submission lodged on behalf of the above by O'Neill Town Planning, Planning and Development Consultants.

The submission includes the substantive grounds of objection to the proposed development as set out in a report by O'Neill Town Planning and a number of individual submissions from members of the association that are stated to support the general thrust of the associations' objections.

The main grounds of objection refer to the following:

- Proposed development is not strategic in the national sense.
- Prematurity pending studies of the hydrography of the area and in relation to flooding risk/climate change.
- Traffic, pollution, noise and waste.
- Visual impacts.
- Recreational impacts.
- Environmental conservation. Significant negative impact on amenity and wildlife – proposed SPA's, SAC's and NHA's.
- Prematurity re completion of plan committed to under Policy CUF6 of the Dublin City Development Plan.
- Nothing in Transport 21 could be seen as supporting the proposed development.
- The South Bank – Strategic Development Framework 2002 does not support the proposed development.
- Neither the Dublin Docklands Area Master Plan 2003 nor the 2008 Draft support the proposed development.
- *The Dublin Bay – An Integrated Economic, Cultural and Social Vision for Sustainable Development* does not support the proposed development.
- Concepts for hinterland transport operations to improve efficiency at ports, reference to international literature.
- Alternative, including Bremore and better use of existing lands.

6.4.3 Clontarf Historical Society (Two Submissions)

Objection to the proposed development by reference to:

- Tidal scour and silting offshore from Fairview to Clontarf giving rise to loss of leisure amenity.
- Flooding risk upstream on the Tolka. Ref. Professor Sweeney's recommendation in the context of climate change.
- Interference with investigation of ship wrecks.
- Underutilisation of existing port lands.
- Proposed SPA designation.

6.4.4 St. Lawrence Montessori School

Objection to the proposed development by reference to:

- Strategic infrastructure route as a back door to circumvent previous decisions.
- Project not of strategic importance to Ireland's economy. Past experience of false projections. Celtic Tiger era did not exhaust capacity/current downturn.
- Prematurity re three current studies.
- Laughable community gain aspect.
- Issue of alternatives.
- Amenity value of Dublin Bay.

6.5 Residents – Individuals/Households etc.

Clontarf Road

Aileen Godden, 79 Clontarf Road

Edward Chandler, 124 Clontarf Road

Andrew Bates and Eithne Breen, 148 Clontarf Road

Sr. Nuala Carr, 183 Clontarf Road

Jason Nolan, Flat 4, 191 Clontarf Road

Kathryn and Ciara Rogers and Peter Hilliard, 206 Clontarf Road

Catherine Shanahan and Others, c/o 211 Clontarf Road

Annette Routledge, 267 Clontarf Road

David and Jean McKean, 273 Clontarf Road

Evelyn Poole, 278 Clontarf Road

Eleanor Lanigan & Myra O’Flaherty, c/o 282 Clontarf Road
Jeremy & Mary Jones, 303 Clontarf Road
Michael and Kathleen Lynch, 354 Clontarf Road
Orla & Bob Kendall & Others, c/o 363 Clontarf Road
Maura Redford, 364 Clontarf Road
Christina Molloy and Family, 407 Clontarf Road
Michael Donoghue, Mount Vernon, 411 Clontarf Road
Sean and Therese Gaine, 412 Clontarf Road.
John and Mary Hirtes, 415 Clontarf Road
Colin Dooge, 416 Clontarf Road
James Lazarri, 417 Clontarf Road
Patrick Warren, 418 Clontarf Road.
Nick & Pheny Corish, 420 Clontarf Road
Elizabeth Mawson, 421 Clontarf Road
Eileen M. Smith, 422 Clontarf Road
Ralph Howard, 423 Clontarf Road
Deirdre Nichol and David Smyth, 425 Clontarf Road
T & A Joyce, 430 Clontarf Road
11 The Oaks, Clontarf Road
Avril Harrison, 7 The Court, Clontarf Road

Seafield Road etc.

Michael O’Scanaill & Jacinta Heslin, ‘Baile Mhuirne’, 22 Seafield Road
A. T. Hunter, 74 Seafield Road
John Teeling, 76 Seafield Road
J. F. Lynch, 53 Seafield Road East
P. Gibson, 61 Seafield Road East
Brendan Fagan, 165 Seafield Road East
Michael Cronin, 167 Seafield Road
Philomena Rogers, Apartment 11, ‘Bruach Na Mara’, Seafield Road East
Cait Murray, 2A Seafield Avenue

Sean Dublin Bay Loftus, Nephin, 5 Seafield Avenue
Úna Úi Lachtnáin, 5 Seafield Avenue
Nuala & Michael Sutcliffe, 12 Seafield Avenue
Fergus Dunlea, 17 Seafield Avenue
Thomas Owens, 19 Seafield Avenue
Angela Sweeney, 15b Seafield Downs

Kincora Avenue etc.

Richard Kelly, 26 Kincora Avenue
Niamh Fitzpatrick, 37 Kincora Avenue
Vera Kernan, 71 Kincora Avenue
David Kelly, 36 Kincora Road
Martin Clynes, 50 Kincora Grove
Neasa & Charlie Murray, 50 Kincora Drive
James Doyle, 4 Kincora Park
Eithne Roberts & Others, c/o “Cregg”, 25 Kincora Road

Niamh Hynes, 85 Kincora Road
Maria O'Callaghan, 96 Kincora Road
Maura Devine & Others, c/o 200 Kincora Road
Brendan Murray, 68 Kincora Court
David Robinson, 114 Kincora Court

Howth Road

Helen Cronin, Howth Road
Anna, Jimmy and Paddy Rogers, 77 Howth Road
Noreen O'Kelly, 38 Auburn, 118 Howth Road
Debra D'Agnostino, 157a Howth Road
Bernadette Monnelly, 658 Howth Road
Denise Waters, 804 Howth Road, Blackbanks, Dublin 5

Summerville

Ms. Anne Keating, 15 Summerville
William Hogan, 26 Summerville
Jill Pilcher and Gerard Curtin, 37 Summerville
Tom Maginn, 39 Summerville
Peadar Devane, 53 Summerville

Hollybrook Road

James Magner, 8 Hollybrook Road
Derek Tynan, 45 Hollybrook Grove
Mary Bailey, 64 Hollybrook Road
Dorothy H. Downes, 73 Hollybrook Road
Joan Harrison, 78 Hollybrook Road
Gerry and Ingrid Doyle, 79 Hollybrook Road

Jonathan O'Sullivan and Madeline Lowery, 80 Hollybrook Road
Ita O'Driscoll, 92 Hollybrook Road

Seapark Road etc.

Marie Coleman, 7 Hunter's Row, Seapark Road
P. J. Lynch, 28 Seapark Road
Mary Lynch, 28 Seapark Road
Myles Tuthill, 41 Seapark Road
Edward J. Woods, Kendlewood, Seapark Road
Noel and Gina Joy, 83 Seapark Drive
Christine May, 107 Seapark Drive
Ciarán O'Donnell & Julie O'Keefe, 111 Seapark Drive

Blackheath etc.

Thomas and Niamh Casey, 17A Blackheath Gardens
Margaret Condell, 83 Blackheath Park

Sean O’Ceallaigh, 13 Blackheath Court

Dollymount etc.

Frances & Frank Hamill, 20 Dollymount Avenue
Miriam Hurley, 26 Dollymount Avenue
Gerard & Audrey Headon, 44 Dollymount Avenue
Una Mockler, 26 Dollymount Park
Mary O’Brien, 58 Dollymount Park
Sinead Nic Coitir, 61 Dollymount Park
Brendan and Louise Grace, 73 Dollymount Park

Castle Avenue etc.

Maeve Lyons, 13F Castle Avenue
Richard & Deirdre Tobin, Moyville, 35 Castle Avenue
Sean & Ciara Fitzpatrick, 98 Castle Avenue
Denis Henderson, 118 Castle Avenue
Fergus and Noreen Lyons, 5 Castle Road
Aidan and Frances Hampson, 36 Castle Grove
Ciara Banks, 38 Castle Grove
Caire Wilde and Damien Roddy, 40 Castle Grove
Deirdre and Jack Moloney, 48 Castle Grove

St. Lawrence Road etc.

Ronan Morris, 5 St. Lawrence Road
Ronan Callelly, 7 St. Lawrence Road
Brian & Vanessa Delaney, 43 St. Lawrence Road
Moira McCarthy, 54 St. Lawrence Road
Eilis and Marc O’Broin, 72 Lawrence Road
Lillian Spelman & Eileen Hoey, c/o 76 St. Lawrence Road
Zandra Ball, 49 St. Lawrence Grove

Mount Prospect etc.

Aidan Doran, 21 Mount Prospect Avenue
Ciaran O’Donohue, 50 Mount Prospect Avenue
Michael D. Shannon, 99 Mount Prospect Avenue
Aidan McCabe, 140 Mount Prospect Avenue
P. Tuite, 197 Mount Prospect Avenue
Ann, David and Jane Charles, Bedford Lodge, Mount Prospect Avenue
William F. Goulding, 9 Mount Prospect Drive
Sean Gilroy, 64 Mount Prospect Drive
Robert J. Alexander, 54 Mount Prospect Grove

Dunluce Road

P.McCliff, 12 Dunluce Road
Mary and Anne Drislane, 67 Dunluce Road

Anthony and Brenda Carasi, 73 Dunluce Road

Vernon etc.

David McCann & Fiona Dixon, 46 Vernon Avenue
Mary Murray & Declan Mullins, 100 Vernon Avenue
David McPherson, 50 Vernon Park
Brian & Corina O'Donohoe, 11 Vernon Drive
Virginia Hanrahan & Declan Smyth, 28 Vernon Grove
Ann Denham, 14 Vernon Rise
Seamus Woulfe, 35 Vernon Heath

Conquer Hill etc.

Sarah & Greg Davey, 2 Conquer Hill Road
Cathal Giles, 8 Conquer Hill Road
Jean Sowers, 39 Conquer Hill Road

Clontarf – Others

Edward J. Carolan, 18 Oulton Road
Ciarán Ó Dúláine, 29 Oulton Road
Elizabeth Nolan, 1 Chelsea Gardens
Arthur McHugh & Others, c/o 42 Chelsea Gardens
Denis J. Barror, 31 Chelsea Gardens
Barney Reilly and Pauline Noughton, 48 Clontarf Park
Fergal O'Neill, 4 Charlemont Road
U. Wallace and others c/o 29 Castilla Park
Eva Greehy, 14 Copeland Avenue
Tony Wickham, 51 Copeland Grove
Rosemary Khelofa, 65 Park Lawn
Pauline Sheeran & Bernadette O'Dwyer, c/o 15 Victoria Road
Aidan Conroy & Others, c/o 31 Belgrove Road
Tony Keegan, 38 Brian Avenue

Other

Fran Cooke, 43 Middle Third, Killester
Helen McCormack, 186 Philipsburgh Avenue, Marino, Dublin 3
Eileen Simpson, 32 Foyle Road, Fairview, Dublin 3
Lorcan Kennedy & Barbara Monahan, c/o 73 Clanmaurice Road, Dublin 5
Sean Keyes, 36 Bayside, Dublin 13
Maire O'Carroll, 900 Sarto Lawn, Bayside, Dublin 13
Patricia O'Sullivan and others, c/o 34 Kilbarrack Road
Liam Morrison, 127 Dublin Road, Sutton, Dublin 13
Frances Bolton, 32 Carrickbrack Hill, Dublin 13
Fiona Rowland, 13 Tyrconnell Street, Inchicore, Dublin 8
Peter Sweetman, 14 Postnet, 184 Lower Rathmines Road, Dublin 6
Kate Monnelly & Others, 6 Cross Avenue, Blackrock, County Dublin
Rita Connelly, 91 Avondale Lawn, Blackrock, County Dublin

Pat & Yvonne Monahan & Family, Rogerstown House, Lusk, Co. Dublin
Martin Tormey, Greaghetia, Lummyduff, Bailieboro, County Cavan
Muireann Gallagher, Sessnecommons, Cloonacool, Tubbercurry, County Sligo

Other – No Address

Jan Leyden & Sarah Clarkin
Mairead & Mary Murphy & Others
Aoife MacGabhann

All these submissions are in objection to the proposed development by reference to: -

- Inefficient use of existing port and lands.
- Need for 24-hour operation.
- Recent reduction in trade volumes (IMDO).
- Alternatives available, including Bremore.
- Prematurity re three major studies/plans.
- Monopoly/competition issues.
- Land ownership.
- Trends towards relocation.
- Contrary to NDP, NSS and Dublin City Development Plan.
- Ongoing need for further expansion and dredging.
- Impact on pSPA.
- Flooding risk/climate change/EPA recommendation.
- Amenity/recreational value of Dublin Bay.
- Siltation.
- Noise impacts.
- Air and water pollution.
- Lighting pollution.
- Traffic impacts.
- Impacts on residential amenity.
- Community gain proposal not tenable.

7.0 FURTHER INFORMATION

7.1 Further information Request

By notice dated 6th February, 2009 An Bord Pleanála request further information from the applicants in relation to the following:

1. A flood risk assessment for the proposed development.
2. An appropriate assessment for the proposed development pursuant to the requirements of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

7.2 Further Information Submission

7.2.1 Flood Risk Assessment (FRA)

The principle findings/recommendations are as follows:

History (Section 3.0)

As a direct response to the 2002 flood event Dublin City Council commissioned the Dublin Coastal Flooding Protection Project (DCFPP). This was completed in 2005 and included the development of a series of flood alleviation measures for a 2031 design horizon. A series of options were developed for the Clontarf frontage, one of which was developed further as part of the North City Arterial Watermain Project, recently approved by An Bord Pleanála. This project includes a flood defence scheme which involves a series of earth embankments and flood walls landscaped into the existing linear park. The scheme provides for a standard of protection for the frontage of 200 years to 2055.

Existing Situation and Hydrology (Section 4.0)

The existing standard of protection will decrease with sea level rise as a result of climate change. By 2055 it is expected that the values for the port will in general be between 50 and 200 years, with values for the Clontarf frontage largely less than 10 years.

Astronomical and extreme tide conditions are likely to increase as a result of sea level rise associated with climate change.

Three wave models were used:

- A Spectral Wave Model (Mike 21 SW), to transform deep water waves to nearshore waves.
- A Random Wave Model (Mike 21 BW - Boussinesq Wave). This is suitable for studying wave disturbance within enclosed bays and harbours.

Due to technical limitations its use was restricted to determining wave disturbance patterns based upon non-broken waves.

- A Nearshore Spectral Wave Model (Mike 21, NSW). This model generates localised wind-waves and includes the wave breaking function and was used to simulate the effects of wave breaking in the harbour. The results were coupled with the BW results to derive estimates for the combined effects of diffraction, reflection and breaking waves in the harbour.

The allowance for sea level rise (SLR) in the EIS was 510mm applied to the 1:200 year extreme tide level.

In terms of flood risk it has been determined that the 1:1 year wave coupled with the 1:200 year extreme tide level is representative of the 1:200 year storm event.

All three modelling approaches show very little difference in wave heights, and with the exception of Point A, the differences are not significant in terms of flood risk.

In relation to the Rivers Liffey, Dodder and Tolka it is the extreme fluvial discharge and their potential impact on flooding in the port area in the context of the proposed development that is most relevant. 1:100 year values are used for the purposes of the FRA and these have been confirmed as suitable by Dublin City Council.

In relation to sea level rise (SLR) the OPW confirmed that the allowance of 510mm (most likely future scenario –MLFS) seemed reasonable and that consideration might also be given to the impact should a higher level of SLR be realised. A high projection scenario (HPS) of 1,000mm was also considered in the FRA.

Flood Risk to the Development (Section 6.0)

Conclusions include:

- The proposed development is considered to be located in Zone A “High probability of flooding”, as defined in the Planning Guidelines. However, the proposed development is recognised as a water-compatible development and cannot realistically be placed at a site with a reduced risk of flooding. The guidelines acknowledge water compatible services such as ports, which require a waterside location and are therefore considered as appropriate development within Zone A.
- The reclaimed area and quays will be overtopped in all present and climate change 200 year scenarios and submerged to varying degrees for the climate change scenarios. Terminal buildings will not be affected during present and the MLFS 200 year scenarios due to their elevated

level and position away from the edge of the quays. However, under the HPS 200 year scenario they are likely to be flooded.

- The latter is deemed acceptable due to the severity of the event and the flexible design to enable raising of the hardstanding in the future should this extreme allowance for sea level rise to realistic. The flood forecasting system currently in operation can provide up to 5 days advance warning and in combination with the Port's own monitoring procedures this will enable the activation of appropriate flood response plans.

Recommendations include:

- The joint development of a flood management and evacuation plan to cover both construction and operational stages.
- Suitable cross falls to be considered over a minimum distance of 20 metres from the quay edge to encourage water due to wave overtopping to flow back to the sea.
- Consider placing the ground floor level of the buildings at a slightly higher level.
- Design the quay walls to be flexible to accommodate future increases of the site should climate change require it.

Flood Risk from the Development (Section 7.0)

- The proposed development will reduce slightly the tidal range and level of high water for both normal astronomic and extreme tide conditions in Dublin Port, irrespective of fluvial flows.
- The proposed development will not increase the risk of flooding through elevated extreme water levels since the effect is to slightly reduce the extreme tide level both now and in the future with sea level rise due to climate change.

Wave Climate Impacts

- In relation to wave heights the SW and BW models produce different predictions. This is to be expected as they adopt different approaches. For all model runs and modelling approaches, the prediction is that the proposed development will reduce wave heights at Location A, towards the western end of the Clontarf frontage. For Points B, C and D along the frontage results differ. However, neither the SW nor the BW runs show significant differences between the existing and proposed situations.
- The results of the SW model are adopted over the BW model for reasons stated.

- Irrespective of the proposed development there is currently significant flood risk at the Clontarf frontage. Increases in wave heights will not increase the risk of flooding and a considerable reduction would be necessary before any noticeable benefit would be obtained.
- The proposed development results in a slightly reduced or unchanged risk of flooding due to changes in wave heights resulting from the proposed development.

Impacts from River Discharges

- The flood risk in the Dublin Port and Clontarf areas is tidally dominated.
- The river discharges from the Liffey, Tolka and Dodder have limited effect on the water levels in the Dublin Port and Clontarf areas.
- The proposed development being located in the outer open estuary will not be influenced by the normal or extreme river discharges and by not causing further restrictions to the flows will not have any impact on them or the flood risk to the proposed development or adjacent areas.

Impact on Clontarf Frontage

- Modelling conducted as part of the DCFPP indicated that the extent of flooding at the Clontarf frontage is limited by the volume available within a compartment rather than the volume of water available through overtopping experienced during an extreme event.
- The proposed development will not exacerbate the risk of flooding due to the fact that it results in a no change or a slight reduction in extreme tide level and wave heights and due to the limiting volume of the receiving compartments.
- The proposed development may reduce the risk of flooding during lower return period events.
- Dublin City Council confirm that the existing stormwater foreshore culvert along Clontarf has been inspected and that the 22 no. flap valves are all functioning adequately at present.
- The proposed flood defence scheme for the Clontarf frontage makes use of the existing linear park and does not in any way extend into the Tolka Estuary. It is suggested, therefore, that it will not have any impact on the proposed development or vice versa.

Impact on Adjacent Port Areas

- The proposed development is not expected to have any impact on the existing flood risk to the adjacent port area.

7.2.2 Appropriate Assessment (AA)

The report is structured so as to address the approach to AA as advised in the European Commission Guidelines (EC, 2001/2002). The report also includes the proposed Sediment Mitigation Strategy (SMS) (Appendix A).

7.2.2.1 Appropriate Assessment (AA)

The principle findings/recommendations are as follows:

Site Description (Section 2.0)

A review of the site area and exposure carried out in Autumn 2008 with more accurate bathymetry data indicates that the areas of intertidal that are exposed are, in fact, lower than the figures previously provided.

In terms of function intertidal habitat (i.e. the intertidal habitat available for feeding waders – based on area exposed by duration of exposure), within the Tolka Estuary, the proposed development site only provides between 0.03% and 0.17% of the available habitat resource for feeding (depending on the year and states of the tide). For the purpose of this assessment the highest contribution (0.17%) has been used, and often rounded up. This is a conservative value, as it has been based on intertidal habitat up to +1m LAT, whilst intertidal habitat extends to higher levels within the Tolka Estuary. Further conservative value is derived from the fact that the calculation is based on the Tolka Estuary only (as the data for South Dublin Bay intertidal habitat is not as accurate), and as the South Dublin Bay area contains in the region of approximately three times as much intertidal habitat, it would be expected that the actual value could be 1/4 that stated.

European Designations (Section 3.0)

The most relevant designation with respect of the Dublin Gateway Project is the proposed South Dublin Bay and River Tolka Estuary SPA (Site Code 4024, with an area of 2,183 ha). Most of this pSPA has been designated since 1999 (IS 367 of 1999) as the Sandymount Strand/Tolka Estuary SPA. On 28th May, 2008, the Department of the Environment, Heritage and Local Government announced its intention to extend this SPA.

Also of relevance is the North Bull Island SPA (Site Code 4006) that adjoins the proposed South Dublin Bay and River Tolka Estuary SPA at the North Bull Wall and has an area of 1,935 ha. As the Tolka Estuary becomes covered by the tide, most of the birds that feed there fly to the North Bull Island to continue feeding and to roost at high tide.

The areas of both SPAs (excluding the areas of the Tolka and Liffey Estuary) have also been designated as candidate Special Areas of Conservation under the EU Habitats Directive – the South Dublin Bay cSAC No. 210 (covering 738 ha) and the North Dublin Bay cSAC No. 206 (1,468 ha). The North Bull Island SPA and North Dublin Bay cSAC boundaries do not entirely coincide;

and neither do the South Dublin Bay and River Tolka Estuary pSPA and South Dublin Bay cSAC boundaries. A review of the Tolka Basin and Bull Wall sands area has resulted in the Tolka Estuary being withdrawn from the cSAC.

Site descriptions and interest features for these four designated sites are set out in the report.

No conservation objectives have been published by the National Parks and Wildlife Service for the North Bull Island SPA and the proposed South Dublin Bay and River Tolka Estuary SPA. In the absence of such objectives, the key criteria against which to consider whether the proposed works would have an adverse effect on the integrity of the relevant SPAs must be the site interest features, as described in the site citations. That is, in summary, use by Annex I species, regular use by 1% or more of the biogeographical populations of migratory species and a regularly occurring assemblage of over 20,000 waterfowl. The report draws conclusions with respect to the predicted influence of the project on these features.

No specific conservation objectives are available for the North Dublin Bay cSAC or the South Dublin Bay cSAC. However, the National Parks and Wildlife Service have published conservation objectives for relevant Annex I habitats, including mudflats and sandflats along with large shallow inlets and bays. These objectives are described below.

Mudflats and Sandflats

Subject to natural change, the total national resource of mudflats and sandflats must be maintained at, or restored to, favourable conservation status. This may be achieved through the following objectives:

- Maintain the range of mudflats and sandflats as stable within Ireland and prevent the equivalent of a 1% loss per annum, and no more than 10% loss in total.
- Maintain the distribution of mudflats and sandflats as stable across the national range and prevent significant changes in its distribution pattern.
- Prevent the equivalent of a 1% loss in surface area per annum, and no more than 10% loss in total.
- Prevent any reduction in the diversity of floral and faunal species arising from human activities.
- Ensure there is no reduction in area or disturbance of intertidal sea grass or biogenic communities.
- Ensure individual operations or activities, in combination with other operations or activities, do not cause a change in typical species composition in more than 25% of the area occupied by each of the principal sediment community types, ensure the water quality in tidal

mudflats and sandflats is of sufficient quality to maintain the integrity of the principal community types.

- Ensure that there is a sufficiently large habitat of suitable quality available to support the long term survival of species associated with this habitat.

Large Shallow Inlets and Bays

Subject to natural change, the total national resource of large shallow inlets and bays must be maintained at, or restored to, favourable conservation status. This may be delivered through the following objectives:

- Maintain the range of inlets and bays as stable within Ireland and prevent the equivalent of a 1% loss per annum, and no more than 10% loss in total.
- Maintain the distribution of inlets and bays as stable across the national range and prevent significant changes in its distribution pattern.
- Prevent the equivalent of a 1% loss in surface per annum and no more than 10% loss in total.
- Prevent any reduction in the diversity of floral and faunal species arising from human activities.
- Ensure there is no deterioration of communities that are nationally rare, internationally threatened and/or in decline.
- Ensure individual operations or activities, in combination with other operations or activities, does not cause a change in the integrity of the principal community types.
- Ensure the water quality in large shallow inlets and bays is of sufficient quality to maintain the integrity of the principal community types.
- Ensure that there is a sufficiently large habitat of suitable quality available to support the long term survival of species associated with this habitat.

Annex II Fish Species

The fish species listed in Annex II of the Habitats Directive occurring within or migrating along the Liffey system include: salmon, brook lamprey, river lamprey, sea lamprey, twaite shad and allis shad. However, it should be noted that salmon is an Annex II species only in freshwater throughout the EU and, therefore, marine and estuarine sites are not relevant in this context.

Importance of the project site to designated bird species (Section 5.0)

Bird counts at the proposed site are closely linked to the size of intertidal area exposed. The intertidal area of the Tolka Estuary is only exposed at certain

tidal states and, as such, accounts for a relatively small proportion of the habitat available to feeding birds. When the area of intertidal habitat within the Tolka Estuary and for the proposed development site are multiplied by their exposure time, the site accounts for between 0.3% and 0.6% of the Estuary's intertidal area exposed in a year. Hence the Dublin Gateway site is not a core feeding site available on all tides.

In terms of benthic ecology a review of biodiversity and abundance indicates that, overall, biodiversity at all locations remains at a level considered to be comparatively poor and consistent with sustained historical human impacts. Within the gravel areas of slightly higher diversity, that cover part of the site, the characteristic species are not all important species for feeding birds.

Relevant Impacts Arising as a result of the proposed scheme (Section 6.0)

Five board ways are identified by which the proposed reclamation and development may affect the interest features of the designated sites:

1. physical loss of habitat and associated species assemblages in the footprint of the reclamation and berthing areas;
2. possible secondary effects of re-suspension and deposition of sediments during dredging (construction), and physical losses of habitat associated with long-term changes in hydrodynamics;
3. remobilisation of contaminated sediment during construction and its deposition within designated sites, and unplanned discharges of polluting substances during the operational lifetime of the scheme on habitats and species;
4. disturbance (noise and vibration) during construction which may have implications for bird species which travel between sites; and
5. aerial deposition during construction (as a result of dust) and operation (as a result of increased vehicle emissions) within designated sites.

Hydrodynamic and Sedimentary Regime (Section 6.2)

Suspended Sediment

In order to limit the extent of excursion of the dredged plume into the Tolka Estuary, it is proposed that dredging in the northern third of the area east of the proposed reclamation is only undertaken on the ebb tide.

Sediment Deposition

Some deposition could occur within 200 to 250m of the proposed reclamation, within the proposed SPA. Without mitigation, this could affect a maximum area of 3.2 ha immediately to the north of the proposed reclamation and result in the accretion of up to 25mm over the 7 month dredging period. However, by

only dredging the eastern berth area on the ebb tide, the large majority of the re-suspended sediment would be deposited within the areas to be dredged themselves or within the main Liffey Channel (i.e. outside the designated areas).

Erosion and Accretion

In the area to the north of the development, the extent and depth of any erosion is likely to be limited and focussed on areas that are already subjected to high levels of bed shear (and hence characterised by gravel substrates and communities tolerant of such) below MLWS. In areas of reduced bed shear stress, deposition of silty material is likely to occur. Should scour occur along the eastern boundary of the development (which would be identified through monitoring) it could be rectified using material won during maintenance dredging.

Sediment and Water Quality (Section 6.3)

Sediment Quality

During the construction phase, the re-suspension and deposition of contaminated sediments could occur during dredging works within the Tolka Estuary, which would result in an indirect effect on the interest species within this area if benthic fauna were affected. This sediment could have a negative effect on benthic fauna, with subsequent indirect effects on feeding waterfowl and waders. Hence, dredging of the eastern berths is proposed to only be undertaken on the ebb tide, in order to limit the extent of the plume.

No re-suspended sediments from the proposed dredge are expected to extend into or be deposited within the North Dublin Bay cSAC or South Dublin Bay cSAC.

In preparation for Dublin Gateway's Foreshore Licence application, further surveys and sampling will be undertaken to clarify the depth to which sediment contamination occurs. A Sediment Mitigation Strategy (SMS) has been drafted and will be further developed in conjunction with the Marine Institute. The SMS details and clarifies the measures identified in the EIS that would prevent impacts on the benthic resource and the proposed SPA through the re-suspension and deposition of contaminated sediment. All contaminated material will be stabilised and used within the reclamation, a description of this and other activities is presented within the Strategy.

The Strategy also details the measures that will minimise sediment re-suspension during dredging; it identifies the process by which contaminated sediment would be stabilised, and it identifies the measures to ensure that discharge water from the infilling works does not result in high levels of suspended sediment concentrations entering the receiving waters. The Strategy also identifies the further works that will be involved in the Foreshore Licence Application process. Implementation of the measures contained in the strategy will avoid any potential impacts on the pSPA.

Water Quality

During any works in or near to water there is a risk of accidental spillage of polluting substances from plant and machinery. To reduce the risk of such spills best practice procedures would be used for all construction activities.

Benthic Invertebrate Communities (Section 6.5)

Changes to the composition of the benthic community have the potential to directly affect mudflat habitats and indirectly affect SPA bird populations through changes in food resource availability.

The development is predicted to impact on these benthic communities in the following ways:

1. The berth dredging would not result in the permanent loss of benthic or shallow water habitat which falls within the proposed SPA site boundary. Consequently, comparison of the total habitat loss (i.e. subtidal and intertidal) as a result of the scheme reclamation (21 ha) with the area of the South Dublin Bay and River Tolka Estuary pSPA (2,204 ha) gives a figure of 0.95%. That is, less than 1% of the area of the pSPA would be reclaimed. Furthermore, this figure does not take into account the frequency of tidal exposure of the area to be lost (i.e. its availability).
2. The area that would be developed begins to be exposed when the tide has fallen to +0.45 LAT. Large areas of the proposed reclamation area are situated at around 0.0m LAT, which is 0.7m below MLWS and rarely exposed during low tide. An initial tidal exposure of 10% was identified for the site based on rough bathymetry and yearly tidal predictions for the late 1990s and early 2000s. However, the actual availability or exposure of the habitat to be lost is less than 6.5% of tides compared to the rest of the Tolka Estuary intertidal habitat. In terms of the 'functional habitat' loss (i.e. the area of intertidal habitat by the duration of exposure), the proposed development site (reclamation and dredging) provides between 0.03% and 0.17% of the available feeding resource for waders within the Tolka Estuary. The site's contribution to functional intertidal habitat in the pSPA would then be even smaller, as there is another 840 ha of intertidal habitat within South Dublin Bay. Overall, less than 0.2% of the functional intertidal habitat within the pSPA would be affected by the proposed development.
3. The permanent loss of approximately 13.77 ha of intertidal habitat above LAT would occur as a result of the reclamation, with a further 9.50 ha converted to subtidal habitat as a result of the berth dredging. This equates to a total loss of 23.27 ha of intertidal habitat down to LAT. These losses would represent approximately 1.96% of the intertidal area in South Dublin Bay and the River Tolka Estuary, based on 840 ha of intertidal in South Dublin Bay and a Tolka Estuary

intertidal area of 346.5 ha. However, taking into account the low frequency of exposure of the intertidal habitat resource as described in 1 above, this results in the functional intertidal habitat loss of less than 0.2% for the intertidal communities within South Dublin Bay and the River Tolka Estuary pSPA.

4. The subtidal habitat that would be permanently lost as a result of the reclamation is 7.23 ha. This loss is predicted to represent a minor impact with respect to the benthic resource (and bird use) of the Tolka Estuary, River Liffey and Dublin Bay as a whole, given the small area of subtidal affected in comparison to that available in the bay. Furthermore, the communities present are typical of disturbed, fine, gravely sediments (likely to be found in Dublin Bay and within many estuaries in the Irish Sea) and not of conservation interest.
5. Marine communities would also be affected within the footprint of the subtidal area to be deepened. However, re-colonisation from surrounding unaffected communities would be expected within 18 months for muds and sands, and 1 to 2 years in sands and gravels, which are present in the site area. Therefore, this impact would be temporary.
6. Smothering by sediments put into suspension during the dredging has the potential to impact on benthic communities and cause changes to species composition. However, the impact is likely to be short-term, with predicted sediment deposition of up to 25m immediately to the north of the reclamation and dredge area over the total period of the dredging operations. The faunal communities present in these areas are representative of those associated with fine, mobile sediments and, consequently, are tolerant of increases in turbidity and sediment deposition. Nevertheless, because the potential for a shift in community composition does exist to the north of the site, the potential impact was considered to be of minor negative significance. However, the mitigation measures described above would prevent any impact from occurring. Namely, the deposition of sediment to the north of the proposed development area can be prevented by dredging the eastern pocket on ebb tides, thereby avoiding any potential adverse impact on the SPA.

Ornithology (Section 6.6)

The Effect of the Loss of Intertidal Habitat on Feeding Overwintering Waders

The loss of intertidal habitat within the area of the proposed reclamation and berth dredge would remove the feeding resource this provides. In total, 23.27 ha of intertidal habitat would be lost to wading birds that feed on the mud and sand and 21 ha of intertidal and subtidal habitat would be lost to waterfowl that feed on water; noting that these areas directly overlap. However, because the site area is situated below MLWS and is only exposed infrequently (with

only the lowest of tides exposing the full 23.27 ha), the area of functional intertidal (i.e. that available for feeding birds) that would be lost equates to less than 0.2% of the functional intertidal area within the South Dublin Bay and the River Tolka Estuary pSPA.

Consequently, whilst it is recognised that the area of shallow subtidal and intertidal habitat exposed on very low tides does support a range of bird species, eight of which are listed as conservation interests for the proposed SPA, data indicates that regular usage of the area (when exposed) is only made by Oystercatcher (which does not occur in internationally important numbers). The site is also used, to a lesser extent, by Curlew and Turnstones which occur in nationally important numbers in the North Bull Island SPA.

Species such as Dunlin and Bar-tailed Godwit do not make regular use of the proposed development site. No Dunlin were recorded for counts undertaken during 2001-2003 and in other years usage was very fleeting, amounting to a couple of hours over all counts in total. The same is true for Bar-tailed Godwit, with generally less than three birds using the intertidal area when exposed, and very occasional and ephemeral use by larger flocks of birds. Similarly, only three Ringed Plover were recorded during counts in 2001 and none during subsequent years. Redshank peak numbers were also low during counts in 1997, 2001 and 2002, with between 11-18 birds recorded, up to a maximum of 110 in 2008.

Significantly, the primary species for which the South Dublin Bay and River Tolka Estuary pSPA is designated are those that occur in numbers of international importance; in this case, Brent Goose. For the North Bull Island SPA these primary species are Brent Goose and Bar-tailed Godwit. Each of these make negligible and infrequent use of the development site appearing in low numbers, for relatively short periods of time. In addition, with respect to breeding birds, only Common Terns using the ESB dolphin (some 300m from the development site), together with a few Arctic Terns, make use of the proposed SPA for breeding and these terns only make very occasional use of the Dublin Port reclamation area. The ornithology surveys have identified that Common Tern feed in shallow water in and adjacent to the site on infrequent occasions, rather than the intertidal mudflats.

For those species that make greater use of the site – Oystercatcher, Turnstone and Curlew – the overall numbers involved are relatively small in comparison with the wintering populations present in Dublin Bay as a whole which is considered to be the appropriate unit for comparison, as South Dublin Bay and the Tolka Estuary form an integral part of this complex and significant exchange of birds occurs between the various SPAs. Within the context of the Dublin Bay 5 year mean peak (1998/99-2002/03) of 2,050 birds, it is clear that the number of birds using the functional intertidal feeding habitat within the reclamation site for these three key species is very small (i.e. at less than 1% when taking into account its exposure).

Overall, therefore, given that the small number of birds expected to be affected, coupled with the likelihood that sufficient intertidal feeding habitat

nearby could support existing (pSPA) populations, and given that a range of other factors have a greater influence on bird species populations (such as the loss of moorland nesting habitat for Curlew), a negligible impact is predicted on the feeding wader species from the loss of habitat due to the proposed scheme.

The Effect of the Loss of Intertidal and Subtidal Habitat on Feeding Waterfowl

The loss of 21 ha of intertidal and subtidal area that would be covered by the reclamation, would reduce the available feeding area for waterfowl (ducks, terns, etc) within the pSPA. However, this 21 ha loss accounts for less than 1% of the water feeding area in the pSPA and, significantly, less when compared to the resource within Dublin Bay as a whole.

In relation to the importance of the site for juvenile fish, and fish specifically fed on by terns (such as sand eels), recent surveys carried out by the Regional Fisheries Board (Appendix B) indicate that for sprat, sand eels and sand goby numbers in the Lower Liffey adjacent to the development site are lower than for the Tolka Estuary, Rogerstown Estuary and, generally lower, than at Broadmeadow Water.

Consequently, although Dublin Bay is considered to be important as a nursery and feeding area, the development site (within Dublin Port) will be less important than other less industrialised estuarine environments in the Bay, such as Rogerstown Estuary and the intertidal areas around Bull Island. It is therefore considered that the loss of the 21 ha is not likely to result in a significant effect on the wider populations of juvenile fish species, as the site is not considered to be an important nursery and feeding area.

The key waterfowl species recorded in the proposed development site were feeding terns. However, it was noted that the use of the site was sporadic, occurred only on low tides in the shallow subtidal (i.e. not when the site was submerged) and for very short durations. Hence, the use of the site by terns is considered to be low and infrequent.

Consequently, due to the small area to be lost (21 ha) and the increase in subtidal habitat that is used by feeding terns, the low density of fish species within the Lower Liffey adjacent to the proposed site compared to other areas within Dublin Bay and the surrounding estuaries, the industrialised nature of the site, and the low numbers of actively feeding waterfowl, the reclamation is not predicted to result in an alteration to waterfowl populations.

The Effect of Elevated Suspended Sediment Levels from Dredging and Reclamation on Feeding Waterfowl

Terns feed on small fish and sand eels within the Bay. The predicted localised increase in suspended sediment levels for the duration of the dredging (i.e. 7 months) has the potential to result in adverse effects on small fish that represent a food resource for terns. Fish tend to avoid areas of inhospitable

conditions and therefore the key effect is likely to be localised redistribution of fish away from the areas of increased suspended sediment concentrations. Overall, this negligible scale, short-term, limited potential disturbance to fish and consequently feeding terns (or another waterfowl) is not expected to have an adverse effect.

The Effect of Construction Noise and Disturbance on Waterfowl and Waders

Given the fact that there are large areas of intertidal habitat within the Tolka Estuary which would be available for feeding, and the fact that birds habituate to the same stimuli repeatedly like piling noise (and are already familiar with varied port activities and noise), and given the available feeding time for half the day when construction is not taking place, and given the overall short-term nature of the piling programme, disturbance from the reclamation works and subsequent construction noise is predicted to have a short-term, negligible impact on bird use of the foreshore within the 250m of the reclamation.

Annex II Fish Species (Section 6.7)

The main issue of concern is the potential effects of piling noise on species such as salmon. The salmon using the Liffey Channel to migrate upstream are likely to be acclimatised to high noise levels, as this channel is heavily used by commercial shipping. Although there is still considerable uncertainty about the effects of piling noise on migratory fish species, the available data suggests it is unlikely that serious injury or death will occur at distances greater than 5m and that at a distance of greater than 400m it is unlikely that salmon will react at all especially in busy commercial waterways. Given these considerations, the temporary short term (1 year) nature of the impact, and the avoidance measures (such as limiting piling activities during peak migration period (July and August) and soft start techniques) the impact is considered to be of negligible significance for the duration of the piling (approximately 12 months).

Implications for Site Integrity (Section 7.0)

South Dublin Bay and River Tolka Estuary proposed SPA and North Bull Island SPA

Ornithological Interest

The intertidal area that would be affected by the Dublin Gateway Project is not regularly used by the principle designated species of the proposed SPA or the North Bull Island SPA. In addition, its usage by other species is not significant because of the infrequent exposure of the site (on extreme spring tides). A 10% tidal adjustment factor has been applied to the bird use data for the site. The tidal adjustment factor equates to the proportion of tides less than or equal to +0.5m LAT, which was used as the basis of a best case assessment of exposure in the ornithology assessment. In fact, recent detailed bathymetric survey data indicates that the maximum level at the site is +0.45m LAT.

Furthermore, tide gauge data for 2007 shows that the site was exposed on less than 30 low tides out of 468 during the wintering period, i.e. less than 6.5% of low tides. With updated measured data, the functional intertidal habitat is less than 0.2% that for the Tolka Estuary, and would be less for the pSPA overall.

However, based on 10% exposure (as a worst case), the usage of the area to be lost to the development by species of interest with respect to the proposed SPA (in particular, Oystercatcher, Curlew, Turnstone, Common Gull and Herring Gull) is between 4% and 7.4% of the pSPA population.

The usage of the site by the three most important wader species, Oystercatcher, Curlew and Turnstone, is between 0.2% and 0.93% of their usage of the Dublin Bay intertidal complex. Oystercatcher, Curlew and Turnstone are not restricted to intertidal habitats for feeding. Oystercatcher and Curlew regularly probe for terrestrial invertebrates in fields and amenity grassland, and Turnstone search for natural and waste food sources along the high water mark. The cumulative usage of the development site by these three species is about 0.04% of the use of Dublin Bay by all waders and geese. The usage of the site by gulls, when tidally adjusted, was well under 1% of the Irish breeding populations. In general, impacts of less than 1% can be considered to be insignificant.

Habitat Loss

The proposed Dublin Gateway Project entails the loss of 21 ha of intertidal and shallow water habitat, which equates to around 0.95% of the area within the South Dublin Bay and River Tolka Estuary pSPA. In terms of the available intertidal feeding habitat that would be lost, bearing in mind the limited exposure of the site and with a conservative tidal adjustment factor of 10%, this would be less than 0.2% of the proposed SPA intertidal feeding resource.

Feed Resource

Both within the reclamation area and outside it, the varied diversity of benthic fauna is considered to be poor in comparison to intertidal and subtidal areas that are not influenced as heavily by human disturbance and influence (i.e. due to the close proximity to a large and dense human population).

The proposed reclamation area appears to support a slightly higher diversity and abundance of benthic species than samples from the surrounding estuary; however, not all these species are a suitable resource for feeding birds and the abundance is not significantly higher.

Summary

Overall, and based on the above integrated assessment, it is considered that the loss of the site would not have a significant adverse impact on Annex I or migratory and waterfowl bird species – that is, on the favourable conservation status – of the proposed SPA or the neighbouring North Bull Island SPA interest species, on the tern colony, or on Irish breeding populations of gulls.

Cumulative Effects Arising from the Project (Section 7.4)

The Dublin Gateway Project has the potential to have more than one effect on the integrity of the proposed South Dublin Bay and River Tolka Estuary SPA, that is, through the development and dredge footprint, extent of the sediment plume, and potential erosion and accretion. In summary:

1. The development footprint would affect less than 1% of the pSPA (and less than 0.2% of the functional intertidal habitat) which is used infrequently by species for which the pSPA is proposed for notification (particularly Annex I species and light-bellied Brent Goose).
2. The dredge footprint would remain as subtidal habitat.
3. The extent of accretion from the dredged plume would be insignificant (and controlled where appropriate) and the faunal communities present are tolerant of the limited deposition predicted.
4. Any erosion that arises to the immediate north of the reclamation would not affect the integrity of the proposed SPA (and bird usage) because the benthic communities present are relatively tolerant of high currents and the areas are localised and within the lower intertidal/subtidal, are infrequently exposed and their position in the tidal frame is not expected to change (i.e. their degree of exposure and availability for bird feeding).

Hence the cumulative effect of the proposed development on the proposed SPA is not significant.

In-Combination Effects (Section 8.0)

In-combination assessment with respect to the Dublin Gateway Project, and the European interest features upon which it has the potential to impinge, has been undertaken for the following plans and projects:

- Dublin Bay Pipeline Project (MCOS, 1997).
- Dublin Port Tunnel (Geoconsult-Arup JV, 1998).
- North City Arterial Watermain and Clontarf Flood Defences (McCarthy Hyder, 2007).
- Dublin Waste to Energy Project (Elsam Engineering, 2006).
- Telecoms Interconnector Cable (In the process of application by Glenfarne IT Consultancy Limited).
- Dollymount Promenade and Coastal Protection Project (formerly named S2S Phase 1) (AWN Consulting, 2006).

Past Projects

The effect of past projects on the condition of the designated sites of concern are largely taken account of in establishing the baseline against which to assess any impacts associated with the project. Of particular note in this respect are:

- Dublin Bay Submarine Pipeline Project (Dublin Corporation); and
- Dublin Port Tunnel (Dublin Corporation).

These projects have been constructed and, hence, any effects associated with them have already experienced by the relevant *Natura 2000* sites and their supported species and habitats (and their effects were limited to the construction phase).

None of these projects have been shown to have had a significant adverse effect on the birds of Dublin Bay, but monitoring is continuing.

The overall conclusion is that considering the predicted impact of the Dublin Gateway Project itself, in combination with other recent and planned projects in the context of historic information, an adverse effect is not predicted to arise with respect to the integrity of the relevant European sites.

Recommended Monitoring (Section 9.0)

It is recommended that monitoring of the benthic fauna and ornithology are undertaken during and after construction. The following monitoring recommendations are made:

- Replicate the benthic fauna survey undertaken in 2008 (with the exception of the sample points covered by the reclamation). This should be undertaken immediately after the capital dredging, and then 2 years after dredging.
- Co-ordinated bird counts of the Tolka Estuary should be undertaken between September and April (inclusive) at around low spring tide, with 2 surveys undertaken each month. The counts should be undertaken during construction and then the winter/spring period after completion of the construction works.
- Continuous monitoring of suspended sediment levels of the discharging weir within the reclamation area.
- Leachate monitoring to monitor the stabilised dredged material within the reclamation.

Monitoring of the dredge sediment plume is recommended in Section 10 of the EIS.

Conclusion (Section 10.0)

Based on the detailed assessment undertaken, the EIS and this Appropriate Assessment conclude that although the potential exists for the Dublin Gateway Project to impact on relevant European designated sites, no significant adverse effects on the European Sites are expected to arise, provided that the mitigation (avoidance) measures in the EIS and herein are adhered to.

The Dublin Gateway Project would not have a significant adverse impact on Annex I or migratory and waterfowl bird species – that is, on the favourable conservation status – of the proposed SPA or the neighbouring North Bull Island SPA, on the tern colony, or on Irish breeding populations of gulls. Moreover, no significant effects in-combination with other plans and projects are predicted to arise. That is:

1. The development footprint would affect less than 1% of the pSPA area and less than 0.2% of the available intertidal feeding resource for wintering waders. Given that the loss of low intertidal area would affect less than 0.2% of the functional feeding habitat that contributes to the maintenance of the bird populations of the proposed SPA, it would still readily accommodate a regularly occurring assemblage of over 20,000 waterfowl.
2. There is limited use of the site by Annex I species and by birds present in the proposed SPA in internationally important numbers. The site is used only infrequently by species for which the pSPA is proposed for notification (use by the three most regularly occurring waders – Oystercatcher, Curlew and Turnstone – is between 0.2% and 0.93% of their use of Dublin Bay and the cumulative usage of the site by these species is about 0.04% of the use of Dublin Bay by all waders and geese).
3. The dredge footprint would remain as subtidal habitat, and overall there would be a negligible loss of estuarine habitat for fish, and no impact on terns that feed infrequently on or near to the site.
4. The extent of suspended sediment and deposition from the dredged plume and discharge from the reclamation would be insignificant (and controlled).
5. Any erosion that arises to the immediate north of the reclamation would not affect the integrity of the pSPA because the areas potentially affected are localised and within the lower intertidal/subtidal areas adjacent to the reclamation (which support benthic communities tolerant of higher currents), are infrequently exposed and their position in the tidal frame is not expected to change (i.e. the availability of the intertidal resource to feeding birds would remain the same).

The EIS also concluded that with respect to the cSACs, no works are proposed within them, and air quality and noise effects would not extend beyond the

local area of the works. Modelling of predicted changes in suspended sediment, water quality, sediment deposition and water flow has indicated that the proposed scheme would not impact on the intertidal and mudflat habitats or features of either the North Dublin or the South Dublin cSAC. Hence the conservation objectives for the relevant designated Annex I habitats (mudflats and sandflats, and large shallow inlets and bays) would not be compromised.

Given a conclusion of no adverse affect on site integrity, the need to demonstrate that there are (1) imperative reasons of overriding public interest for the project and (2) no alternative solutions, in line with Article 6(4) of the Habitats Directive does not arise, though an assessment of alternatives is presented in Section 4.2 of the EIS. Furthermore, compensatory habitat does not need to be sought. That is, Stage Three (Assessment of Alternative Solutions) and Stage Four (Assessment where Adverse Impacts Remain) of the Guidance do not apply.

7.2.2.2 Sediment Mitigation Strategy (SMS)

This includes the following: -

Developing the Strategy

- The results of the sediment analysis (2008) presented in the EIS were considered unusual in relation to previous sampling carried out around the port. A previous survey carried out in a similar area in 2000 did not detect any high levels of copper. It was decided that, following consultation with the Marine Institute, further sampling and analysis would be carried out to check the earlier results.
- It is believed that material at depth is unlikely to display similar contamination levels. Sediments likely to be exposed as a result of dredging will pre-date port development.
- More detailed, at-depth sampling and analysis would be undertaken as part of the Foreshore Licence Application process, to provide clear quantities of potential contamination or to clarify that levels were below threshold and widen the material use and disposal possibilities.
- Confirmation was given that material containing high copper levels is unsuitable for relocation to the offshore disposal site.
- As the proposed development includes reclamation it is considered possible that contaminated sediments could be “fixed” by mixture with cement or clays within this area. The Marine Institute agreed that this would be an acceptable approach.

Further Sampling Results

- A grab example analysis of the wider Tolka Estuary indicated all heavy metal concentrations within this area to be below Action Level 1(of the

guidance) and show that the pSPA could potentially be impacted by sediment deposition due to dredging.

- A re-sample analysis for copper within the development site area (all at surface only) confirmed the elevated levels of the earlier survey.

Mitigation Measures

- As elevated copper is widespread, though patchy, across the proposed dredging area no part of the surface material could be disposed of at sea. Subsurface sediments may be suitable for such disposal but further core investigations would be necessary to determine this.
- Consequently the following mitigation measures were developed on the assumption that the total of 600,000 cubic metres of silt to be dredged would be stabilised on-site and used as fill material in the reclamation.
- A full investigation of the depth profile of the contamination will be undertaken as part of the Foreshore Licence Application process to establish the quantity of subsurface sediments that may be suitable for disposal at sea. There is capacity within the reclamation area for all of the material expected to arise from the dredging activity should it be necessary for it to be accommodated there.
- Methods of dredging will be key in mitigating potential impacts. Cutter-suction dredging is acknowledged to be an effective dredging method which can minimise sediment re-suspension. To both minimise re-suspension of sediment and to enable access to the reclamation area for sediment stabilisation, the dredge arisings will be pumped into the works area through a pipe. This will remove spill losses from the barges and automatically reduce the concentration of re-suspended sediment.
- In order to prevent contaminated material being deposited with the Tolka Estuary pSPA it is proposed to restrict dredging of the eastern berths to the ebb tide only.
- The dredge arisings will be pumped into bunds and temporary dams within the reclamation area where the material will be allowed to settle prior to treatment and stabilisation. The discharge of latent water will be controlled by weir. The quality of the water to be released would be continuously monitored and trigger levels agreed with NPWS above which works would temporarily cease.
- The method for stabilisation and solidification of contaminated dredged material, such that it is suitable to minimise any contaminated leaching and to be suitable for engineering purposes, will be the subject of a management plan to be put in place by the contractor.

8.0 SUBMISSIONS IN RELATION TO THE FURTHER INFORMATION

8.1 The Planning Authority

The principal conclusions/recommendations are as follows:

Parks and Landscape Services Division

Concerns include:

- (i) Lack of consideration of Council policies and plans, in particular as set out in the Biodiversity Action Plan (BAP) for Dublin City (2008).
- (ii) Inadequate characterisation of the site by reference to:
 - The premise of the conclusion, that the relatively low numbers of observed species of birds within the site at specific sampling dates is indicative of low importance to protected species, is undermined by the variability of the populations observed and which also cast doubt on the completeness of the sampling method.
 - The true nature of the site and Dublin Bay – the reason why it is of such international importance is that it offers a range of feeding, breeding and roosting grounds over a dispersed area. This offers a range of choices to an extensive variety of species.
 - The intermittent and temporal nature of feeding by birds is not a valid argument for downgrading the site's importance.
 - The entire nature of their existence in Ireland is transitory – that is the rationale for the designation. Their numbers may fluctuate depending on many factors – food supply, weather, disturbance or even breeding levels and food supply at their summer sites – and may not be indicative of the site's importance. The Assessment describes the 'suddenness' of these natural events of migratory birds. The data suggests that these 'one-off' occurrences are actually frequent events. The consistent usage by Annex I and II species of the site, sometimes in numbers (albeit for a short while) of national importance, confirms that loss of the habitat would have consequences and alter patterns of populations.
- (iii) Risk of dust exposure to fauna of intertidal zone

There is potential for a release of dust to affect a large population of protected species if the incident arose on a day when a large flock of migratory birds arrived.

(iv) Protection of designated fish species

Council policy has stated that we will ensure protection of salmon in the River Liffey and estuarine areas encompassing all life stages from spawning to migration and trout specifically in the River Tolka. The Council does not distinguish between the freshwater and estuarine environments in this regard. The report states that the main concern of the proposal for effects on these fish is from piling noises, but fails to mention the toxicity risks of dredging fully.

(v) Sedimentation plan

The sedimentation plan places emphasis on over-wintering birds, and avoiding disturbance during this period. However the BAP cites the importance of the roosting populations of terns from late July – early September and a key action of the plan is to identify and protect key roost sites. As Common Terns used the site more than once in nationally important numbers, according to the Assessment, the interconnectivity of the site is evident. Works outside of the winter period will be a concern for impacts on biodiversity of the pSPA.

(vi) Biodiversity of benthic ecology

The results of the survey of benthic ecology indicates that part of the site contains a zone of higher biodiversity than the surrounding estuarine zone. This, it is stated, may be due to the presence of gravel and increased species richness, although overall biodiversity at the site is low. This would be expected to be the case, however, it does not fully explain the effect of losing this gravel zone.

(vii) Impacts of metals contamination of site on biodiversity

The high levels of contamination of the site by all metals sampled (except Chromium) present significant, potentially catastrophic risk to fauna if dispersed during the proposed works.

There are elevated levels (Level 2) of copper (Cu) across the entire site, especially at sampling location nos. 9-16, which poses the greatest threat, as it is toxic to organisms at very low levels. Copper is highly toxic in aquatic environments and has effects in fish, invertebrates, and amphibians, with all three groups equally sensitive to chronic toxicity.

(viii) Impact of lighting on biodiversity

The proposal includes 45-metre high lighting masts (9 no.) and 25-metre high (25 no.) lighting masts adjoining the SPA. The potential impact of these on birds in terms of flight patterns and disturbance of habitats should be examined.

(ix) Impact of construction noise on biodiversity

The impact of construction noise for the project on wading birds cannot realistically be compared to the impact of members of the public using the Clontarf promenade or nearby public amenities.

(x) In-combination Assessments

The Port Tunnel project involved a total reclamation area of 2.2 ha, merely 10% of what is proposed for this site. The Dublin Port Tunnel was assessed in the context of the site being a proposed NHA, and without the [proposed] South Dublin Bay/Tolka Estuary SPA designated. The ECJ Case C-418/04 ruling, out of which that designation arose, argued that small sites that had confirmed usage by birds that depend on the overall ecosystem merited protection. This conclusion is directly applicable to this site.

Drainage Division

No objection subject to conditions.

Project Management Office, Environment and Engineering Department

Includes:

- Agreement that the ground floor of the proposed development should be raised to deal with flooding risk. Road levels should also be reviewed to ensure that safe access and egress can be maintained to any buildings.
- Concern re proposed 20 metre wide edge designed with a crossfall to facilitate flood water to drain back to the sea – the issue of contamination from oils, greases or other surface contaminants should be considered as part of post storm drainage. It is not accepted that SUDS in port area is unnecessary.
- Satisfied that the risk to the Clontarf seafront is addressed in a comprehensive manner and that the development would have no adverse implications for the Clontarf Flood Defence Project.
- The proposed development should be linked to the Dublin City Council early warning system for coastal flooding.
- The FRA should be subject to a six year review (or review following a significant tidal event) of changes to climate in Dublin Bay.

The Planning Authority also cites the following concerns:

It is noted that the proposed amendments to the scheme, in particular raising the ground level and the creation of a crossfall around the edge of the

development, while desirable for flood risk purposes, may have a negative visual impact.

The Planning Authority is also concerned that a number of areas identified as requiring further investigation in its original submission were not requested by the Board. This includes issues relating to impact on the visual landscape, impact on the canals and coastline, water consumption demand and water pipe design. Given the complex nature of the site, the lack of proper examination of these issues is of concern to the Planning Authority in the absence of details in relation to potable water.

In relation to the latter it is noted that **Water Services Division** recommend a refusal of permission.

8.2 Prescribed/Public Bodies

8.2.1 DoEHLG – Nature Conservation - NPWS

Includes:

Comments on Appropriate Assessment (AA) with regard to Conservation of Wildbirds

- For South Dublin Bay and River Tolka Estuary SPA the AA considers whether the proposed works would have an adverse effect on the integrity of the SPA by exclusively examining the site interest features as listed in Table 6 of the report. This list is incomplete as the wetland habitat as a resource for birds is not specifically identified here. Therefore the assessment could not be considered complete.
- The integrity of a site can be defined as the coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and/or populations of species for which the site is or will be classified. South Dublin Bay and River Tolka Estuary is classified as an SPA on account of the importance of this site to the various aforementioned species and on account of the importance of the wetland habitat that supports the listed waterbirds and various other waterbirds that over-winter here or use it as a feeding and roosting resource on passage to their breeding/wintering grounds. Essentially the wetland habitat is a special conservation interest in its own right.
- The AA processes the interest features through the Stage Two assessment and finds that the proposed works will not impact on the integrity of South Dublin Bay and River Tolka Estuary even though approximately 2% (23.27 ha) of the intertidal resource of the wetland contained within the SPA would be either developed upon or dredged.
- The AA report and the EIS that it is based upon imposes a correction factor to account for the period of time that the area in question is below water and therefore reduces the numerical importance of the intertidal area

for the various waterbirds that have been recorded as using it and also for the habitat itself. This correction factor is called the 'functional habitat' (i.e. the intertidal habitat available for feeding waders based on area exposed by duration of exposure). This reasoning does not take into account the importance of the functioning wetland habitat when the area in question is covered by the tide i.e. frequency and duration of exposure from the tide is not the sole measure of an area's importance as a feeding resource to waterbirds even for those waders who can only feed in the area when the water is shallow or completely uncovered.

Invertebrate sampling of the area revealed high numbers of several invertebrates species/groups that are a known source of food for wading birds including several of those birds identified in the ornithological monitoring of the site. The fact that this area is not uncovered on all tides may well be the reason why there are such high numbers of invertebrates found here.

- Even using the correction factor the recorded bird usage of Oystercatcher, Curlew and Turnstone when compared against the Liffey [Tolka] Estuary the values still appear quite significant.
- Estuarine systems by their nature are in constant flux and therefore waterbirds also distribute according to the tidal cycle, very often moving with the tide edge as feeding grounds become uncovered. Several wading bird species prefer to feed at the tide edge and on the lower shore. Again this calls into the question the soundness of using such a simplistic correction factor which assumes that certain intertidal areas that are uncovered for longer periods of time are proportionately more important than other areas that may only be uncovered during periods of low water.
- The fact that the intertidal habitat within the appeal site is only infrequently uncovered does not render this area to be of low value to foraging birds. Indeed, certain factors could make it of particular value at certain times during a winter season. Infrequent use of the site could allow for prey re-colonisation by mobile and opportunistic species between periods of use by wading birds. Infrequent foraging within the site could also result in prey depletion (decline in the prey densities due to foraging activity) being less than within other areas that are exposed and used for longer foraging bouts. Hence, the prey base within the appeal site could provide profitable, albeit, short-term foraging opportunities, at times when other feeding patches across the site are less profitable. These patches could be important at times when birds are under pressure to achieve their necessary daily intake rates, for example during the late winter/early spring when prey resources across the whole site are at their lowest, during periods of bad weather (e.g. storms, severe cold, strong wind), post migration (when fat reserves are low), or pre-migration when fat reserves need to be built up.
- The conclusion of no adverse effect on the integrity of the site cannot be upheld with certainty. Therefore it is recommended that the assessment of

the Dublin Port Gateway should proceed to Stage 3 of the aforementioned European Commission's relevant guidance document i.e. the assessment of alternative solutions. It is also recommended that the further assessment of the Dublin Gateway Project takes into consideration the European guidance document on the clarification of the concepts of alternative solutions, imperative reasons of overriding public interest and compensatory measures.

Recommendation on Appropriate Assessment with regard to the Marine Environment

- The application proposes to dredge sediments that are characterised as Class 3 sediments by the Marine Institute guidelines. Class 3 sediments are characterised as
 - heavily contaminated,
 - very likely to cause biological effects/toxicity to marine organisms, and
 - alternative management to be considered.

The Marine Institute has confirmed to the DoEHLG that no agreement was entered into concerning the management of this sediment.

The management strategy for this sediment has not yet been agreed or finalised. It is entirely possible that the management option currently presented for these Class 3 sediments may yet change significantly.

Since further development of the management strategy for these sediments is envisaged DoEHLG considers the EIS and accompanying Article 6(3) document concerning the assessment of the likely ecological effects of developing an area containing Class 3 sediments cannot be regarded as completed.

Further information is required from the applicant considering the potential risk to seals and cetaceans in relation to the potential for disturbance to those species though the proposed construction methodologies. Where a risk is judged to exist to those species then the applicant should propose appropriate mitigation.

8.2.2 National Roads Authority (NRA)

No further comments.

8.2.3 An Taisce

Includes:

Dredging

- While increased tidal currents have been noted within the Appropriate Assessment, the cumulative effects of coastal erosion have not been adequately addressed.
- Dublin Port will have to continually dredge in order to maintain the depth required as the ships entering continually increase in size. The Appropriate Assessment fails to address this, despite it having potential impacts for the integrity of the designated areas being maintained.
- The Assessment does not appear to have identified where the contaminated sediment will be relocated for treatment.

Sediment Contamination

- Copper has been identified in toxic concentrations within the surface sediment.
- The re-suspension of solids, heavy metals and hydrocarbons re-entering the water column comprises a serious threat in this instance. In this case, the receiving water is already under pressure and is not of adequate quality, therefore it cannot assimilate a further introduction of pollutants.
- Mercury, Copper, Lead and Nickel were all sampled in concentrations above that of the Level 2 of the Irish Guidance Levels. Sediments with metal concentrations above Level 2 are considered to be heavily contaminated and are toxic to most marine organisms. The proposed development will change the channel morphology, flow velocity and all the factors mentioned above. This has the potential to release contaminants after the dredging process, when there will be no mitigation measures to control the adverse impacts.

Siltation

- The Assessment has not identified any actions or mitigation measures to be taken if there is an accident and large quantity of sediment is suddenly re-suspended within the water column.
- There will be indirect consequences surrounding the development from the alteration of the local hydrodynamic and sedimentary regime, i.e. these alterations will be significantly larger than the development footprint.

Ornithology

- While the figures in relation to habitat loss appear small it is significant in the wider context of biodiversity loss in Ireland. Strict protection of the small area of Natura 2000 designated sites is very important in this context.
- The Appropriate Assessment indicates the development area as having low biodiversity, although in some habitat types, such as salt-marshes and mudflats, low diversity of species is part of the ecosystem characteristics and does not equate to low ecosystem value or rarity.
- The majority of the bird species listed in Table 11 of the Appropriate Assessment have declined since the 1997 data, with the exception of the Gulls.

8.2.4 Eastern Regional Fisheries Board (ERFB)

Includes:

- The Liffey systems support a regionally significant population of Atlantic Salmon, a species listed under Annex II and V of the EU Habitats Directive. Estuaries serve as the natural linkage for species such as salmon, sea trout and eels migrating between freshwater and ocean environments, providing the necessary habitat for their transition.
- The issue of fisheries habitat loss is a significant one. The Board is not favourably disposed to the concept of losing foreshore and open channel to reclamation, particularly in a key location for salmonid migration in the River Liffey system. There is no indication of any proposals for baseline fish surveys. Real time fish surveys are required as such information is not extensive at present for the areas to be impacted.
- Whilst it is acknowledged that the Appropriate Assessment (AA) considers Natura 2000 sites and associated species of interest, the issue of fisheries habitat loss and fisheries impact is for the most part omitted.
- Pollution of the adjacent aquatic system from poor on-site construction practices could have a significantly negative impact on the aquatic fauna and flora of this area. A comprehensive and integrated approach for achieving aquatic ecological protection both during construction and operation should be implemented and should be described in detail in the EIS.
- Significant potential for additional contamination of water onsite could exist as a result of sediment re-suspension in this area through dredging for infill, adjacent berths etc. Contaminant levels should be closely monitored both during and after construction/infilling and should a contamination problem arise, any discharge of waters to the River Liffey should cease immediately and alternative disposal should be arranged.

Standard water quality monitoring should be implemented on all discharges to surface waters according to best practice.

- Water and habitat quality must be closely monitored throughout and subsequent to the engineering process and if remedial measures are necessary in the future, appropriate modifications should then be undertaken subsequent to consultation with the ERFB.
- All fish groups that are likely to utilise estuarine habitat in the vicinity of the proposed development at some time during their life cycle should be considered.

8.2.5 Railway Safety Commission

No observations.

8.2.6 Dublin Docklands Development Authority (DDDA)

Includes:

- That the Draft Planning Scheme for Poolbeg be included as a future project for the purposes of considering in-combination effects in the appropriate assessment.
- That the Planning Scheme for Poolbeg also be included in the context of the flood risk assessment.

8.3 Public Representatives

8.3.1 Richard Bruton, T.D.

Includes:

- Application is premature re government sponsored studies for Dublin Bay, port policy and proposed SPA designation.

8.3.2 Ivor Callely, Senator.

Includes:

- Vast majority of people do not wish the proposal to proceed.
- Proposal sponsored by Dublin Port – bias.

8.3.3 Sean Haughey, T.D.

Includes:

- Premature re official studies.

8.3.4 Bronwyn Maher (ex. Councillor)

Includes:

- Further information is the same as originally submitted
- Serious increased floor risk.
- EPA (2006) and John Sweeney, recommendations re sea level changes and reclamation of estuary land.
- Breach of EU Wild Bird and Habitat Directives.

8.3.5 Aodhán O’Riordáin, Councillor.

Includes:

- Prematurity re studies.

8.4 Non-Governmental Organisations

8.4.1 Bird Watch Ireland

Includes:

- Appropriate assessment not adequate as based on the information contained in the original EIS.
- Data deficiency as previously referred to.
- Potential importance of the area in relation to site integrity as previously referred to.

8.4.2 Dublin Baywatch

Submission indicates that previous concerns not alleviated.

The submission includes two reports by:

- (i) Jackie Hunt, MSc. MIEEM.
 - (ii) Tom Burke, Foreshore Consultant.
- (i) Includes:
 - The effects of erosion to the north of the proposed development site are minimal within the Appropriate Assessment, yet in the EIS it is predicted that an area covering 10.75 ha of lower intertidal habitat may be affected.

- Detailed bird data is only available for the proposed reclamation site yet impacts due to the development will extend to other intertidal areas to the north (potentially due to erosion) and east (due to berth creation).
- The importance of the reclamation site to wintering birds has not been assessed in terms of the quality of feeding habitat, which this area provides.

The importance of the lower intertidal habitats to birds should not be assessed solely on area of habitat and duration of exposure. It should also be acknowledged that when exposed the proposed development site can support a higher density of birds than the rest of the Tolka Estuary (29 birds per hectare compared to 13 birds per hectare). It is likely that the higher densities of birds feeding in this area is linked to its limited exposure. The feeding resource within the lower intertidal is not exploited on every low tide and therefore may supply a good feeding resource when available. This theory is supported by the fact that the benthic survey found a higher diversity of invertebrates in the reclamation site than elsewhere in the estuary. Many of the species found during this survey are common prey for wading birds.

(ii) Includes:

- Appropriate Assessment does not address the issue of whether or not the brief stopovers (for waders) are essential feeding or resting areas on a migratory route.
- Unclear if major developments in the upper Tolka River Catchment area over the last 10 years or so and the flood relief works carried out in the river have been factored in to the issue of flood risk.
- The issue of severity (as opposed to risk) of flooding is not addressed.

8.5 Residents Associations

8.5.1 Clontarf Residents Association

Submission lodged on behalf of above by O'Neill Town Planning, Planning and Development Consultants.

Includes:

- The proposed development will clearly have likely significant effect on the conservation of natural habitats in the area of the development and also in the adjoining areas of Dublin Bay.

- The potential for likely significant effect does not deal with the ongoing dredging which will be required to be carried out indefinitely to maintain the development.
- It is assumed in the Flood Risk Assessment that water levels will rise by 0.51m by the year 2100 due to climate change. While this may be a reasonable figure for discussion purposes, it is our opinion that a more prudent figure would be 1m due to the ongoing and serious nature of the events which are occurring worldwide due to climate change.
- It is generally accepted that occurrences of storms with heavy rainfall and high winds will increase in number and severity throughout the 21st century but this does not seem to be considered or addressed in relation to river flooding, in particular that of the Tolka.
- The “Seiche” effect has been ignored in the assessment of the height of tides.
- Records show that between the years 1926 and 1975 that there was no tide of 5m or more. Since 1975 there have been over 10 such tides. One explanation for this may be the filling in of 340 acres of the bay since the 1970s and there is every reason to expect that further infill will make the situation worse.
- Wave overtopping between Oulton Road and Belgrove Road in the Clontarf area is not addressed in the FRA.
- The analysis indicates a number of metals and toxic elements affecting the site. An old mine shaft within a few hundred yards of the site has not been addressed. Notwithstanding the proposal to dredge only on the ebb tide this will not stop contamination of the pSPA.
- Clarification is required in relation to the further studies etc, for the SMS – are these to be made available to stakeholders and the Board.
- In the SMS reference is made to the expected ‘plume’ from sediment suspension and deposition but the information furnished i.e. that a maximum area of 3.2 hectares may be affected immediately to the north of the site, is totally insufficient and unclear.
- In the Appropriate Assessment it would appear that the physical area is misrepresented.

8.6 Residents – Individuals/Households etc.

Christina Molloy and Family, 407 Clontarf Road
Michael Donoghue, Mount Vernon, 411 Clontarf Road
Nick and Pheny Corish, 420 Clontarf Road
Elizabeth Mawson, 421 Clontarf Road
Eileen M. Smith, 422 Clontarf Road
Ralph and Elizabeth Howard, 423 Clontarf Road
Sean Dublin Bay Loftus, Nephin, 5 Seafield Avenue
Dick and Deirdre Tobin, 35 Castle Avenue

These submissions generally focus on the issues of flood risk and climate change.

9.0 THE ORAL HEARING

9.1 Introduction

The oral hearing was held over two periods between 3 September, 2009 and 10 September, 2009 and between 30 November, 2009 and 9 December, 2009.

Full transcripts of the proceedings of the hearing and copies of written submissions, where provided, are attached to the file.

Mr. Anthony Cawley of Hydro Environmental Limited, was appointed by the Board to advise on matters relating to hydrodynamics, flood risk and climate change.

Mr. Cawley, who replaced the original appointee Dr. John Harris of HR Wallingford UK, attended the November/December session of the oral hearing and was provided with transcripts and copies of written submissions for the September session of the hearing.

9.2 Oral Hearing Proceedings

The following is a brief summary only of the main additional information that emerged at the oral hearing over and above that contained in the application documentation and written submissions already received and summarised in the foregoing sections of this report.

9.2.1 Applicants Submissions

9.2.1.1 Mr. Enda Connellan, CEO/MD Dublin Port Company

This includes:

- An overview of existing operations at Dublin Port.
- Dublin Port Company does not provide stevedoring services directly but, uniquely in Ireland, licences terminal operators thus ensuring competition both within the port and with other ports.
- Dublin Ports natural attributes include; open in all weather conditions; location in heart of Dublin City and national economy; connection to two most important economic corridors in Ireland and Britain.
- The proposed development includes Lo-Lo berths dredged to a depth of 11 metres to cater for ships in excess of 2,000 TEU (twenty foot equivalent unit). The design of the berth will allow for a depth of 15 metres alongside.
- On completion the project will deliver a 50% increase in throughput capability for unitised trade at Dublin Port.

9.2.1.2 Mr. Seamus McLoughlin, Head of Operations, Dublin Port Company

This includes:

- A more detailed overview of existing operations at Dublin Port.
- Unitised operations comprise some 80% of freight movements through Dublin Port.
- Ro-Ro freight includes accompanied and unaccompanied units. The latter require considerably more land area to facilitate short term storage.
- In terms of Lo-Lo Dublin Port is a “feeder relay port”, i.e. it “feeds” containers to/from other larger ports within the UK, Northern Europe and the Mediterranean.
- The bulk liquid operations include aviation fuel for Dublin Airport.
- The bulk solids operations includes all of the exports of lead and zinc ores from Tara Mines. This is all handled by rail.
- Dublin Port attracts increasing numbers of cruise liners which are a significant economic benefit for the city.
- In general the fabric of the older port infrastructure was designed to cater for much lower levels of physical loading and smaller cargo throughput than that resulting from modern unitised operations.
- To be efficient cargo handling space must be close to the quay wall.
- The long term objective is to return all lands south of Tolka Quay Road for direct cargo operations as this is regarded as the limit within which direct unitised operations can be carried out efficiently.
- The main approach channel to Dublin Port is maintained at a depth of -7.8 metres CD, i.e. at low tide a depth of 7.8 metres is available at all times.
- Larger vessels are allocated a “tidal window” to facilitate entry/exit to/from the port.
- Notwithstanding these limitations Dublin Port has managed to accommodate the full range of shipping services without difficulty.
- The completion of the Dublin Port Tunnel has relieved all traffic congestion within the port. In combination with the M50 upgrade times involved in moving goods to/from the port have greatly reduced.

- Dublin Port Company is of the view, having carried out in-depth discussions with many operators and customers, that the maximum size of feeder container vessel likely to be used on intra-Europe service, will be in the region of 2000 TEU. Consequently the design for the Dublin Gateway terminal is based on this vessel size in the Lo-Lo category.
- The application provides for a Lo-Lo berth depth of 11 metres at lowest tides but the berthing structure has been designed to facilitate deepening to 15 metres alongside when the demand in trade requires it in the future. Any such further dredging to be subject to relevant statutory consents.
- Ro-Ro vessels will be able to access the berths at any stage of tide as they tend to be relatively shallow in draught.
- At present larger container vessels use tugs to assist in swinging and berthing in the port and this will continue for even larger vessels. The turning area has been designed to facilitate the turning of such ships and to minimise the amount of dredging required.

9.2.1.3 Mr. Raymond Burke, Raymond Burke Consulting – Capacity and Trade Projections.

This includes:

- Updated figures (since the completion of the EIS) indicate that in 2008, Dublin Port handled approximately 41% of national trade, including 65% of national Lo-Lo trade and 80% of national Ro-Ro trade.
- Capacity constraints include high volumes of unaccompanied Ro-Ro trailers at weekends that cannot be delivered to distribution centres.
- Trade projections have been revised based on revised GDP forecasts as published by the ESRI since the completion of the EIS. This results in reduced projections for both Lo-Lo and Ro-Ro to 2028. The projections for Lo-Lo are considered to be under-estimates for a number of stated reasons.
- Of the many factors that influence capacity dwell time is the most critical. Any change to it has a major impact on capacity.
- Even on the basis of the revised and very conservative trade projection estimates capacity limits for both Lo-Lo and Ro-Ro are still predicted to occur c.2016/2017. It is noted that the Indecon report indicates lower capacity estimates for the existing port facilities than those assumed by the applicants indicating that on that basis, capacity constraints would occur at an earlier date.
- The trend toward larger container ships (longer and deeper) will reduce existing berth capacity and drive the need for additional berth capacity.

- On the basis of the revised trade projections the proposed additional capacity, in conjunction with other expected capacity improvements, is indicated as being sufficient to meet demand at the port to beyond 2028 for both Lo-Lo and Ro-Ro.

Responses to third party submissions include:

- The concepts of productivity and efficiency at ports can be confused. No source is provided in third party submissions to substantiate the claim that Dublin Port ranks 900th in terms of productivity.
- In relation to the Fisher Report as the full analysis in that report was not published, for reason of commercial sensitivity, it is not possible to comment on how its conclusions were reached. Dublin Port Company does not accept its findings but would emphasise that the proposed development is to address the needs of the port beyond 2014.
- Trade projections have been revised in line with the latest ESRI economic forecasts. The economic downturn will be short-lived and trade growth will return. The provision of additional capacity takes time.
- Competition within the port arises from the various independent terminal and ship/ferry operators.
- Dublin Port is open 24/7, 365 days per year and operates around the clock as required. It is the market that decides the hours of operation.

9.2.1.4 Mr. Mark Barr, Solicitor Arthur Cox, - Review of Title

This sets out the basis for the Dublin Port Company's claim to an absolute freehold interest in an area of the Liffey Estuary that includes the area within which the subject application is made.

9.2.1.5 Mr. Jim Power, Jim Power Economics – Economic Considerations

This includes:

- External trade will remain of vital importance to Ireland's economic recovery and future prosperity.
- The key role of all ports, and Dublin Port in particular, in Ireland's trade activities and in the overall economy will have to be recognised and facilitated.
- The key attraction of Dublin Port is that it is close to and accessible to the main markets. It is estimated that 50% of all goods arriving in Dublin Port remain within the M50 area while 75% remain within 80 kilometres of the port.

- Dublin Port handles more than two thirds of containerised trade to/from Ireland and half of Ireland's imports/exports.
- Dublin Port is the most competitive port in Ireland due to its operating structure based on internal competition between competing terminals.
- The key challenge for Ireland is to ensure that once the international economic cycle improves the Irish economy is in a position to exploit the recovery. The delivery of infrastructure project is long-term in nature and a long-term perspective is necessary.
- The Indecon Report concludes that, despite port throughput decline in 2009 and 2010, there is a need to develop significant additional port capacity in Ireland by 2025-2030. It suggests a net economic benefit to the proposed development, and to the Bremore Port proposal, and that nothing should be done at a policy level to block these developments.

9.2.1.6 Mr. Terry Durney, MacCabe Durney Barnes, Town Planning Consultants – Planning Issues

This includes:

- A review of trade and transport policy in support of the proposed development.
- A review of planning policy in support of the proposed development.
- A review of the National Development Plan Framework, including the recently published "Indecon Report".

Responses to third party submissions include:

- The assertion of prematurity could be made at any time as there would appear to be always a study underway in relation to Dublin Port or Dublin Bay.
- In relation to the Dublin City Council study on Dublin Bay it is noted that this has not been adopted as a variation to the development plan. The main planning criticisms of the report are:
 - The Development Plan supports the continued development of the port.
 - Land use planning must take account of critical infrastructure and the Council cannot restrict its considerations to residential/commercial property development.
 - The document ignores other major infrastructure proposals for Dublin such as Metro North and the development associated with it.

- The Indecon Report references to the very long period it would take to build out a property redevelopment of Dublin Port. The report talks of centuries and this is without counting the remaining areas within the Docklands Development Authority Area.
- The difficulty of re-siting the several Seveso establishments within the port area.
- The study is not underpinned by objective economic criteria and fails to relate economic growth to capacity.
- The loss of Z9 zoned lands is more than compensated for by the proposed landscaped area along the northern side of the development.

9.2.1.7 Mr. Terry Durney, MacCabe Durney Barnes, Town Planning Consultants – Alternatives

This includes:

- The Bremore Port proposal is at a point on the coast that is not a natural harbour; it could be vulnerable to north-easterly winds; it would require extensive engineering works; no road or rail access is available.
- A review of relevant planning policies/objectives in the Fingal and Meath County Development Plans potentially relevant to the Bremore proposal and which present significant obstacles for the proposal. Potentially significant environmental issues are also likely to arise.
- In the context of the Bremore proposal the Indecon Report highlights increased CO² and cost impacts in the event of total relocation of Dublin Port.
- An updated table comparing distances and journey times from the various port options considered to Dublin City Centre and the M50/M1 junction.

Responses to third party submissions include:

- In relation to the monopoly issue Dublin Port provides competition between terminal operators and shipping companies. Other ports, however, are terminal operators.
- Contrary to submissions received Iarnrod Eireann are pursuing a policy of increasing rail freight operations and it would be foolish not to plan for rail freight into the future.
- In relation to the cited trend for ports to relocate outside cities this tends to happen where there is a more attractive location from an economic point of view, normally because of landside transportation issues or because expansion room is constrained or reclamation is not feasible. These

conditions do not apply in Dublin, Several UK examples of ports expanding in their original locations are cited.

- In relation to origin/destination Dublin is the nearest port for many midland and west of Ireland locations and provides for shorter journey times and fewer emissions to distribution centres located around the M50 than would be the case at other locations, including Bremore.
- The port company's figures for origin/destination, on the basis of a 2001 survey, indicate that 43.2% of goods arriving were destined for locations within the M50 and 75% of traffic was destined for areas within an 80 kilometre radius. More recent Dublin Port Records show that 56% of traffic in/out of the port is related to the Dublin Region, hence the adoption of 50% as a conservative current estimate. Origin/destination figures in the Indecon Report vary depending on respondent category. The 74.1% figure for the Leinster area, on the basis of the Dublin Port Tenant Survey, tends to confirm the 2001 survey figures quoted above.
- The issues raised by An Taisce in relation to global climate change resulting from increased shipping movements would have to be addressed on the wider international stage.
- The Dublin City Council submission favouring the removal in its entirety of the port is of such fundamental strategic nature that it should more properly be part of a variation to the development plan. The Board is obliged to attach primacy to the existing development plan and the Council is not entitled to resile from its adopted Policy E24 that expresses support for the continued development of the port. The Council's opinion predates the Indecon Report.

9.2.1.8 Mr. Robert Dunsire, Jacobs Engineering UK Limited, - Construction Logistics

This includes:

- It is estimated that in excess of 80% of the required infill could be sourced from the dredging operation with the remainder needed to be imported from the nearest, most sustainable, sources.
- Mitigation for the suspended sediment plume arising during dredging is described in the SMS.
- In the context of the elevated contaminant levels within the dredge footprint area mitigation focuses on effective separation and removal of contaminated material as well as the reduction of contaminated sediment re-suspension to almost negligible amounts. The environmental performance of the dredging and reclamation processes will be further improved by the application of an appropriate real time monitoring system.

- The Marine Institute will be engaged to ensure that the final dredging and reclamation methods align with their requirements.
- The quay design has been future-proofed to accommodate a future deeper dredge pocket to 15 metres should there be a need to service larger ships as trade develops.

Responses to third party submissions include:

- In relation to concerns raised about dredging noise the capital dredge should not produce significantly more noise than the existing maintenance dredge, albeit that it will occur over a more sustained, single period.
- Construction dust would be minimised by keeping temporary bunds damp by water spray.
- The impact of transporting materials is minimised by transporting 80-90% by sea. This is also a significant risk mitigation in terms of the health and safety of local residents.
- In relation to the issue of SUDS, as raised by Dublin City Council, the design will recognise SUDS objectives.
- In relation to the issue of potable water, as raised by Dublin City Council, demand can be minimised.
- In relation to contaminated sediment its treatment is described in the SMS. Appropriate material will be separated and treated/stabilised within the reclamation footprint. Stabilised material will be encapsulated within the reclamation works.

9.2.1.9 Ms. Sian John/Mr. Peter Thornton, Royal Haskoning, - EIA.

This presents an outline of the EIA process engaged in by the applicants and which led to the production of the EIS.

Responses to third party submissions include:

- In relation to the issue of alternatives, as raised by An Taisce, the Article 5 requirements of the EIA Directive have been addressed.
- In relation to global trade issues these are not matters for the selection of alternatives by the port. The proposal would have no impact on the volume of international shipping. The effect on national CO² emissions are addressed at Table 13.6, EIS.
- In relation to the issue of characterisation of the site in terms of habitats, as raised by Dublin City Council, this is addressed in the Flora and Fauna sections of the EIS and in the AA.

- Issues in relation to aquatic ecological protection, as raised by the ERFB, are addressed in the EIS (Sections 10.4.29 – 10.4.31) and the Dublin Port Company has given a commitment to implement all of the mitigation measures proposed within the EIS (Section 19.2).

9.2.1.10 Mr. John Drabble, Royal Haskoning, - Air Quality

Responses to third party submissions include:

- In relation to the contention raised that monitoring of air quality at local receptors should have been carried out it is stated that the Dublin City Development Plan ambient air quality monitoring network provided more reliable and characteristic evidence of baseline air quality conditions. It also provided for a more conservative approach.
- The construction dust management plan, as stated in the EIS, is predicated on dust control at source and thus incidents, such as a significant dust release affecting birds as contemplated by Dublin City Council, would not occur.

9.2.1.11 Mr. David Potts, Royal Haskoning - Noise

This includes:

- It was noted during the noise measurement survey that the dominant noise at Clontarf, particularly at night, is the noise of traffic passing over the concrete-segmented surface of Clontarf Road. Noise from the port was not audible during day time and was only distantly audible at night, as occasional noise of containers being set down, in between the passage of cars. The noise level of these events was towards the lower limit of audibility and was readily drowned out by the noise of seabirds on the foreshore.
- The early completion of the northern boundary wall, Stage 2 Construction Phase, will provide significant noise screening for remaining topside construction activities.
- The noise level calculations for receptors at Clontarf assumes the occurrence of meteorological conditions most favourable to the propagation of noise.
- Additional assessments of the potential maximum noise emanating from individual container stacking activities indicates that complaints are likely (from Clontarf receptor areas). However the proposed container stacking area would be 1,300 metres from Clontarf compared to 930 metres for the existing area and the proposed northern boundary gabion wall would provide screening for the first two layers of containers. The proposed stacking area would be closer (at 1,300 metres) to the Bull Wall Cottages than the existing stacking area (at 1,700 metres).

- Dublin Port Company is actively involved in the assessment and management of noise from its operations as a whole. A number of operational measures to minimise noise nuisance are outlined.

Responses to third party submissions include:

- Setting noise limits at the port boundary, as suggested in third party submissions, would potentially render the port inoperable and would be an unusual and unreasonable requirement.
- The EIS did in fact ‘model’ the water in the bay as being a hard, noise-reflecting surface.
- There would be a negligible impact from traffic noise on residential areas close to the port access roads and no traffic noise impact at Clontarf.

9.2.1.12Mr. Tom Lyons, Atkins, - Traffic

This includes:

- An outline of the critical role played by the Dublin Port Tunnel in facilitating access to the port. 60% of port traffic uses the tunnel. The remaining 40% accesses the port from East Wall Road.
- The improvements identified in the EIS to the East Link Bridge/North Wall Quay junction are required to accommodate growth in background traffic levels. The level of traffic generated by the proposed development as a percentage of total traffic utilising this junction will be small (not more than 7%) as the majority of the traffic will use the M50/Dublin Port Tunnel Route.

Responses to third party submissions include:

- Rail crossings are to occur outside peak road traffic time periods, so as to minimise impacts on road traffic, and are to be agreed with Dublin City Council and the National Roads Authority.
- Detailed responses to criticisms raised on behalf of Bremore Ireland Port Limited in relation to the traffic impact assessment methodology.

9.2.1.13Mr. Hamish Hall, Royal Haskoning, - Numerical Modelling

This includes:

- At the entrance to the harbour and away from land under extreme situations wave heights may increase as reflected waves interact with incoming waves. This is unlikely to have any effect on navigation as these extreme conditions would arise very infrequently and during times when vessels are unlikely to be navigating the channel.

- Following further examination of the predicted sediment plume during dredging, as part of the development of the SMS, the distinction between the plume on spring and neap tides has been found to be insignificant. Therefore, the mitigation proposed in the EIS, to only dredge the northern third of the eastern berths on spring tides was over-precautionary. It will be more effective to limit dredging in these areas to the ebb tide, thereby limiting the movement of the dredge plume into the Tolka Estuary.

Responses to third party submissions include:

- The displacement effect of the proposed reclamation would not increase sea-levels by a perceptible amount as the volume is infinitesimally small compared to the total volume of the sea.
- The reclamation will not constrict fluvial (river) flows.
- Areas of both potential erosion and accretion are both limited and may not occur due either to the existence of material that will not erode or the lack of suitable material in the water column that could be accreted. The areas of potential accretion are not near any sandbanks that were identified in the bathymetric survey.
- The proposed development would have no impact or reduce wave heights and to a lesser degree tide levels which will mean reduced flood risk to the Clontarf frontage even with sea level rise due to climate change.
- It is recommended, adopting a precautionary approach, that the new property floor levels within the development be set using the High Projection Scenario of 1.0 metre sea level rise.
- In response to the reference by Dublin Bay Watch to the prediction in the EIS that approximately 10.75 hectares of lower intertidal habitat will be affected by a net increase in bed shear stress (and potentially erosion), the estimate net area is stated as 7 hectares, with a note that Area B is unlikely to see erosion.
- Confirmation that the ‘seiche’ effect has been included in assessing the height of tides.
- In relation to SUDS, interceptors and other methods of maintaining water quality from surface water run-off will be put in place. Dublin City Council Drainage Division requirements in relation to planning conditions are accepted.
- If scour or accretion occurs it will occur below the MLWS mark in areas that are already subject to these conditions.

9.2.1.14Ms. Marie Pendle, Royal Haskoning, - Sediment and Water Quality

This includes:

- The designs of the original sediment sampling surveys to inform the EIS and the subsequent surveys following the discovery of contaminants were agreed with the Marine Institute as suitable and sufficient for EIS purposes. The application process for both Foreshore Licence and Dumping at Sea Permit normally requires a different sampling strategy to give more detailed information for the regulatory decision making process. They will be designed to ascertain exactly which sediments will need treatment and which may be suitable for relocation to an offshore disposal site.
- After discussion with the Marine Institute, the historic deposition rate of the area to be dredged has been established to be slow and gradual. The deepest sediments would have been covered by later sediments prior to any contamination occurring so that the potential of exposure of contamination subsequent to the capital dredge is considered to be low.
- Given that the predicted increases in sediment suspension during dredging reduce to baseline conditions within 2-300 metres from the vicinity of the active dredge it is considered that dilution and dispersion processes would sufficiently reduce potential suspended sediment and associated contaminants in the water body to existing background levels.

Responses to third party submissions include:

- With mitigation measures sediment plumes do not extend anywhere near the bathing water beaches or the SPA.
- It is not anticipated that the quantity of re-suspended sediments during dredging would have sufficient redox potential to lead to any compromise of dissolved oxygen levels.
- In relation to the Clontarf Residents Association's reference to an old mineshaft it is indicated that no confirmation of its existence has been established.

9.2.1.15Mr. Randolph Velterop, Royal Haskoning, - Fisheries

This includes:

- Additional baseline survey results support the initial desk based assessment set out in the EIS.
- The results of a rapid baseline data collection study of marine mammals (pinnipeds and cetaceans), including consultation with the Irish Whale and Dolphin Group, indicate that only harbour porpoise, bottlenose dolphin and grey and common seals have been identified regularly in Dublin Bay.

- There are currently no common seal haul out sites within Dublin Bay. Grey seals have a number of such sites along the County Dublin coastline.
- Metal contaminants associated with the dredge sediments are not present in concentrations high enough to make them dissociate with their preferential binding to finer sediment fractions and will, therefore, not be released during short-term re-suspension.
- As outlined in the construction programme dredging activities and piling are scheduled to occur outside the peak salmonid migratory periods and, therefore, are not anticipated to interfere with spawning migrations.
- The permanent loss of approximately 13.77 hectares of intertidal habitat above LAT and 7.23 hectares of shallow subtidal habitat in Dublin Harbour as a result of the reclamation could have a potential impact on fish communities. However, given their small areas relative to the Tolka Estuary, River Liffey and Dublin Bay as a whole these losses are considered as minor negative.
- Based on existing noise levels associated with the existing port it is unlikely that extensive marine mammal activity occurs in the area.
- The nearest regular common seal haul out is at Lambay Island. Grey seal haul outs occur occasionally at Dalkey. The main grey seal colonies are at Lambay Island and Irelands Eye. At these distances there would be no disturbance from piling noise in Dublin Port.
- Given the mobility of pinnipeds and cetaceans and given existing noise levels associated within the port no significant impact is expected. However, best practice, including 'soft start' piling, will be employed to ensure no injury or disturbance.

Responses to third party submissions include:

- The loss of intertidal habitat is not anticipated to impact on salmonid smolts as they generally undertake nocturnal migrations downstream during conditions of high freshwater discharge, coinciding with ebb tides, and pass through estuaries in a matter of hours. Smolt estuary residence times are generally considered brief, rarely lasting more than one or two tidal cycles.
- The loss of 21 hectares of intertidal habitat is not considered to adversely effect the numbers of sandeel, an important food source for terns.
- In relation to Dublin City Council concerns re toxicity risks from dredging it is stated that; dredging will occur outside the peak upstream salmon and sea-trout migratory season and mainly outside the downstream migration timeframe; concentrations of copper are not present at levels at which they would move away from their preferential binding to sediment particles

and so would not easily be taken up by fish; dilution and dispersion processes would sufficiently reduce potential suspended sediment concentrations and any associated contamination to acceptable existing background levels; the SMS aims to reduce the significance of any such impacts.

- In relation to An Taisce concerns re fish spawning grounds those fish known to have spawning grounds in the vicinity of Dublin Bay, including sprat and lemon sole, have spawning periods outside the dredging period. The eggs and larvae of both species are pelagic and will, therefore, not be subject to siltation. Modelling has shown the levels of suspended sediment to be limited in extent.
- In relation to third party references to the importance of the area as a nursery ground for certain commercial fish species it is considered that industrialised estuaries will be less important as nursery or feeding areas than less industrialised locations such as Rogerstown, Broadmeadow and the intertidal areas of Bull Island.

9.2.1.16Ms. Laura Covington, Royal Haskoning, - Terrestrial Ecology

- This essentially repeats the evidence presented in Chapter 7.0, Flora, in the EIS.

9.2.1.17Dr. Graham Saunders, Royal Haskoning, - Benthic Ecology

Responses to third party submissions include:

- Survey results indicate benthic fauna dominated by large numbers of a few species of opportunistic polychaete worms with low diversity across the site particularly at stations consisting mainly of fine sediments. No species of conservation importance was recorded and the benthic fauna was found to be characteristic of the fine, mobile sediments and broadly disturbed conditions within Dublin Bay. As such they are tolerant of fluctuating environmental conditions and are not considered sensitive. They would quickly recolonise the exposed substrata following cessation of dredging.
- The only long term impact predicted would be the permanent loss of benthic communities from the reclamation area footprint and this was judged to be a minor negative impact.
- Responses to issues raised by Dublin Bay Watch (App. 3) of 28 October 2008, including:
 - Erosion attributable to the development is predicted to be minimal and mainly confined to subtidal areas. Effects on intertidal sedimentary fauna is therefore not expected to be significant and any subtle changes in shore profile will be accompanied by an

equally subtle natural redistribution of fauna to their preferred tidal position, thus maintaining their original availability for bird feeding.

- The extent of accretion and deposition from the dredge plume will be controlled. The faunal communities are naturally tolerant of the limited deposition predicted and no significant change in the intertidal community structure is anticipated.
 - In relation to the reference to the reclamation/berth dredge site displaying a higher diversity of benthic fauna to that of the Tolka Estuary as a whole this is based on the Group C samples, a third of which fall outside of the development site. A direct comparison of values within and outside the development site indicates overall biodiversity is similar.
 - While the necessarily small number of sample stations confined to the reclamation site contained a proportionately high number with a high gravel content, which has elevated the local diversity values, the overall biodiversity at all locations remains at a level considered to be comparatively poor and consistent with sustained historical human impacts.
 - The majority of the proposed reclamation site samples were dominated by between one and four species, three of which are known to be characteristic of organically enriched conditions while the other is a common epifaunal species present as small, but numerous individuals which have become established by attachment to the available gravel substrate.
 - In response to the contention (Ref. Dublin Bay Watch submission of 6 July, 2009) that sites such as the development site, that are uncovered only on infrequent extreme low tides, constitute a particularly rich feeding resource because they are not exploited by birds on all tides, it is stated that it is incorrect to assume that because the fauna are unavailable to birds there is no predator activity. While covered with water infaunal invertebrates will be under constant predation pressure from a range of sub-littoral species.
- Responses to issues raised by NPWS, including:
 - In response to the reference to the dominant infaunal species within the development site samples being a recognised part of the seasonal diet of several waders it is reiterated that these are common species with a strong ability to quickly establish elsewhere. The high numbers encountered strongly suggest localised pollution impacts. Many of the sample stations with a high abundance of the species were below chart datum and beyond the lower shore limit for intertidal bird feeding.

- Responses to issues raised by Dublin City Council, including:
 - In relation to Dublin City Council's concerns re the removal of the gravel zone this zone, although of comparatively higher diversity than the surrounding sediments, is still at a level corresponding to what is widely considered moderately impacted. The faunal component supports only a small number of very common species.
 - The concern in relation to the potential impact of the dispersal of metal contaminated sediments is also addressed.

9.2.1.18 Mr. Richard Nairn, Natura Environmental Consultants, - Birds and Ornithology

This includes:

- The bird populations of Dublin Bay, as monitored by I-WeBS, have been relatively stable since the mid 1990's.
- Dublin Bay is internationally important for wintering waterbirds because it regularly supports over 20,000 waterbirds and also at least 1% of the international flyway population of four species. It also supports concentrations of all-Ireland importance of a further 17 species.
- Details of two further bird counts on the development site undertaken in September and October 2008 in addition to those reported/referred in the EIS.
- On the basis of the full set of bird counts referred to, between 1996 and 2008, the average annual peak counts of the ten species regularly (at least one occurrence in all years surveyed) observed on the development site is as follows:

Light-bellied Brent Goose	-	27
Oystercatcher	-	298
Bar-tailed Godwit	-	51
Curlew	-	136
Redshank	-	40
Turnstone	-	55
Black-headed Gull	-	327
Common Gull	-	200
Herring Gull	-	173
Great Black-backed Gull	-	23

A further 18 species were recorded on the development site in some years but not in others and are, therefore, not considered to be regular. Most of these were recorded in very small numbers and infrequently. An exception was the single occurrence of a flock of 2,200 Dunlin on the site in 1997.

- The most significant birds are those which are qualifying interests for the pSPA. These include Light-bellied Brent Goose, Bar-tailed Godwit, Common Tern and Arctic Tern, all of which are listed in Annex I of the Birds Directive. Additional special conservation interests for the pSPA, that occur regularly on the site, are Oystercatcher and Black-headed Gull.
- None of the species recorded on the site reached an average peak number which was above the thresholds for all-Ireland importance. There were some isolated counts of significant numbers of birds on the site, for example, 102 Common Terns in July 2001 but this was an exceptional event.
- Details of how birds use the development site.
- Overall, the average peak numbers of birds present on the proposed development site are less than 1% of the average peak numbers of the same species recorded in Dublin Bay for most species. The exceptions are Great Crested Grebe, Cormorant, Brent Goose, Oystercatcher, Dunlin, Bar-tailed Godwit, Curlew, Redshank, Turnstone, Black-headed Gull, Common Gull, Herring Gull and Great Black-backed Gull.
- It should be noted that the counts on the development site were mostly carried out on extreme low tides while the I-WeBS counts of Dublin Bay are done on high tides. Thus, the comparison gives only a general indication of the relative importance of the development site.
- The development site is not a key part of the habitat used by birds in Dublin Bay or in the pSPA. It is normally covered with water and only rarely are parts of it exposed for use by feeding waders. There are no recorded high tide roosts on the site and it is not a key feeding area for any species, in the sense that it is not used on all tidal cycles.
- There is sufficient data to indicate that the use of the development site by waders is infrequent and that the numbers of birds present is small in the context of Dublin Bay as a whole and of the South Dublin Bay and Tolka Estuary pSPA in particular. On the rare occasions when parts of the site are exposed for feeding by waders there is, at the same time, a maximum exposure of suitable feeding area in the rest of Dublin Bay. Thus the loss of less than 1% of the area of the pSPA is insignificant.
- Both Common and Arctic Terns breed on the mooring dolphins to the Poolbeg generation station on the south side of the Liffey. Terns have only been recorded feeding on the development site on spring low tides, such tides being infrequent in the period of the tern breeding season, and during which the maximum exposure of suitable feeding area occurs in the rest of Dublin Bay.
- As noted in the evidence presented in relation to hydrodynamic changes four areas below MLWS level have the potential to experience deposition or erosion. The benthic communities of these intertidal habitats will

respond to any changes in particle size and distribution in the sediments. It is considered that they are likely to be relatively tolerant to high currents and associated scouring. The EIS predicts that the same array of sediment types would be available outside the reclamation area as are available at present for feeding waders and that there would be a negligible impact on birds.

- It is well established that birds habituate to non-threatening disturbance such as that associated with normal port activities. It is certain, therefore, that there is no likely disturbance impact to birds during operation of the proposed development.
- No impact is expected on birds from maintenance dredging operations.
- Construction activity will have a negligible impact on birds.
- The proposed development will not cause any significant impacts on the structure and function of the pSPA as this relates to bird populations. It will not disrupt those factors that maintain the favourable condition of the pSPA or interfere in a significant way with the balance, distribution and density of key species that are the indicators of favourable status. It is certain that the development will not adversely affect the integrity of the pSPA.
- The changes caused by the development are unlikely to be even measurable in terms of bird populations in Dublin Bay.
- Birdwatch Ireland, the NPWS and Dublin Bay Watch raise issues about the adequacy of bird count data. The response includes:
 - Bird counts of the site were undertaken in five separate winter periods from 1996-1997 to 2007-2008, though not for consecutive years.
 - It is accepted that October-January is the time for peak numbers of waterbirds in Ireland. While several counts were undertaken in this period this is the period when there are few if any low spring tides in daylight so that the development site is not normally available for feeding waders at this time of year.
- Birdwatch Ireland, the NPWS, Dublin Baywatch and Dublin City Council raise issues about the effects of the proposed development on birds. It is considered that the EIS addresses most of the issues. The response also includes:
 - It is accepted that birds use the intertidal parts of the development site on the rare occasions when this is exposed on low spring tides. The limited number of dates when this occurs each year and the relatively small number of birds involved means that the impact of the loss of the area on bird populations is insignificant.

- Potential for displacement of birds is extremely limited as the only time the intertidal parts of the development site are exposed coincides with the maximum availability of extreme low shore feeding throughout Dublin Bay.
- The low ecological value of the development site is confirmed by its relatively low usage by waterbirds.
- Overspill of street lighting onto mudflats in the winter period is a common occurrence around Dublin Bay and there is no evidence that it is detrimental to birds or their habitats.
- Construction noise does not generally cause disturbance to waders on mudflats as they treat it as non-threatening.

9.2.1.19Ms. Sian John, Royal Haskoning, - Appropriate Assessment

This presents an outline of the considerations of the implications of the proposed development on the intertidal habitats, waterbird populations and the designated status of the South Dublin Bay and River Tolka Estuary pSPA and surrounding Natura 2000 sites as set out in Chapter 7.0 (Flora) and Chapter 8.0 (Fauna) of the EIS and in the Appropriate Assessment (AA) report submitted to the Board as further information.

It also includes:

- Responses to issues raised by the NPWS in relation to the EIS, including:
 - The application does not include or intend to provide a navigable channel for the CYBC.
 - The percentage areas of loss of intertidal habitat quoted by the NPWS refer to a baseline down to MLWS, which is in the region of 0.7 metres above LAT and does not include the extreme low intertidal areas down to LAT within which the development site exists. In addition, the designation covers intertidal and shallow marine waters (subtidal) and extends over 2,204 hectares. The total loss of habitat associated with the development represents 0.95% of the pSPA.
 - Each of the potential impacts on birds and their habitats are specifically addressed in Chapter 8 of the EIS.
- Responses to issues raised by An Taisce in relation to the EIS, including:
 - What is significant with respect to any designated site is not, in simple terms, what its area of coverage is, but rather what elements of the site contribute to maintaining its integrity and designated status.
- Responses to issues raised by the NPWS in relation to the AA report, including:

- No listing of the wetland habitat is included within the site synopsis and no conservation objectives have been provided.
- In the absence of conservation objectives it is appropriate for the assessment to be based on the site interest features as listed in the site synopsis upon which the designation is based.
- The value of the wetland habitat as a resource for birds is clearly considered in the EIS and the AA. In fact it is implicit in the consideration of significance of the loss of habitat due to the development. If the implication is that the fact that the site is wetland habitat alone means that its loss is significant, that is not a valid assumption. The limited contribution it makes to ensuring the integrity of the designated site is the relevant measure.
- In response to the assertion that the frequency and duration of exposure is not the sole measure of an area's importance as a feeding resource to waterbirds it is stated that, in considering the question of site integrity, the quality of habitat and its availability to birds are of primary importance, especially where the whole site in question is below the level traditionally taken as constituting intertidal (MLWS). It is acknowledged that several wading bird species prefer to feed at the tide edge but this does not call into question the soundness of assuming that intertidal areas that are uncovered for longer period of time are more important than those only uncovered during periods of very low water. Areas that are uncovered on a more regular basis must be more important for feeding at the tide edge than areas that frequently do not provide this opportunity at all.
- In response to the assertion that the site could be of high value to the birds as a result of it being unavailable for most of the time and that this has led to high numbers of invertebrates on the site, the following facts are emphasised.
- The reclamation site has relatively higher biodiversity than other communities found in the survey, but is not actually a site of high biodiversity;
- the community is dominated by species which are indicative of organically enriched (i.e. impacted) environments;
- the assumption that, because the area is covered most of the time the community will not be subject to predation, ignores the fact that there will still be predation from the fish community and invertebrates.
- In response to the suggestion that the conclusion of no adverse effect on site integrity can not be upheld with certainty it is stated that the small and infrequent contribution that the development site makes to the pSPA is certain; birds opportunistically make irregular and often fleeting use of the site. The remaining pSPA is large, robust and much

more available for bird use. Based on the detailed assessment undertaken in the EIS and the AA and the evidence adduced at the Oral Hearing, any risk to the integrity of the pSPA has been ruled out on the basis of objective information. Hence, in line with the test required, no reasonable scientific doubt remains as to whether an adverse effect on the structure and function of the pSPA will arise due to the proposed development.

- Responses to issues raised by Dublin City Council in relation to the AA report, including:
 - The development site, which is already fragmented from the rest of the pSPA, is not an important habitat and its loss will not threaten the integrity of the relevant designated sites or the objectives of the BAP.
 - The loss of the development site will not put pressure on other areas as its use is infrequent and opportunistic and species do not rely on its availability.
 - The proposed dust control measures will negate the potential for an affect on a large population of protected species.
 - The impact of lighting on the intertidal areas will not change from that which currently occurs.
- Responses to issues raised in other third party submissions, including:
 - The detailed analysis presented demonstrates that the area proposed for reclamation and dredging does not make a significant contribution to the designated status of the pSPA. That is, it is used by less than 1.0% of the key designated species in Dublin Bay and represents less than 0.2% of the pSPA's available intertidal feeding area. The proposed development will not adversely affect the integrity of any nature conservation sites designated under EU Directives.
 - For the purposes of assessment the development site has been treated as if it was a designated site.
 - The proposed works entail dredging 9.5 hectares of very low intertidal area to create subtidal habitat and deepening 19 hectares of subtidal area, the majority of which will simply change the level of existing subtidal habitat. The rest of the area will still be available for use by birds that feed in deeper water (such as common terns).
 - Ongoing maintenance dredging has been assessed and it is expected to disturb only 'clean' sediments subsequently deposited. Existing maintenance dredging in the port has not been found to impact on the pSPA.

- Pollution risks from construction activities are addressed in the SMS and in the proposed Construction Management Plan.
- The Brent Goose, the primary species for which the SPA is designated and proposed for further extension, makes only very infrequent use of the development site. The evidence also suggests that these birds quickly adapt to noise and spatial disturbances caused by work such as dredging and construction.
- The issue of airborne noise in relation to birds is discussed in the EIS and the issue of underwater noise for fish and marine mammals is addressed in the evidence of Mr. Velterop.
- Responses to issues raised by Dublin Bay Watch (Submissions 28 October 2008 and 6 July 2009), including:
 - The contention in relation to the proposal having a devastating effect on the SPA is not borne out by the assessments undertaken.
 - In relation to the issue of precedence each proposed development must be examined on its merits.
 - The contention that over 100 acres of the pSPA would be lost is not correct. 21 hectares (52 acres) are proposed for reclamation, a loss of 0.95% of the 2,204 hectare pSPA.
 - As far as is possible, and within the bounds of best practice, the assessments carried out provide scientific certainty with respect to predicted hydrodynamic, water and sediment quality, benthic, fishery, ornithological and habitat effects of the proposed development.
- Responses to issues raised by Dublin Bay Watch in Appendix 3 to their October Submission (largely repeated in Index 1 of the July Submission) including:
 - The detail of the issue of an increase in bed shear stress leading to potential erosion/accretion of intertidal habitats over an area of 10.75 hectares is dealt with in the evidence of Hamish Hall. However, any erosion arising is not expected to affect the integrity of the pSPA because; the benthic communities present are relatively tolerant of high currents; the areas are localised and within the lower intertidal/subtidal areas; are infrequently exposed; and their position in the tidal frame is not expected to change.
 - In relation to the statement that detailed bird distribution data is only available for the proposed reclamation site, yet the impacts will affect a much wider area, the habitat effects associated with the proposed development will either be local to the reclamation site or will not affect bird usage over the wider area. No habitat changes in the intertidal due to increased sedimentation are predicted.

- In response to the assertion that the cumulative effect of all impacts on the SPA are to be considered, the EIS considers in detail each of the potential effects, that is:
 - (a) The development footprint would affect less than 1% of the SPA, which is used only infrequently by species for which the SPA is proposed for notification;
 - (b) The dredge footprint would remain as subtidal habitat;
 - (c) The extent of accretion from the dredged plume would be insignificant (and controlled where appropriate to avoid the pSPA) and the faunal communities present are tolerant of the limited deposition predicted;
 - (d) Any localised erosion that arises to the immediate north of the reclamation would not affect the integrity of the proposed SPA.

Hence, the cumulative effect of the proposed development on the pSPA is not considered to be significant.

- Marine pathways have been considered in the assessment.
- Responses to issues raised by Birdwatch Ireland (Submission of 23 October 2008 and 3 July 2009), including:
 - The adequacy of data issue is addressed in the evidence of Richard Nairn.
 - The approach taken to assessing the value of the site in the context of the pSPA is necessarily complex, as its use cannot be compared to the I-WeBS count data available for the rest of Dublin Bay. In fact, our data provides a worst case assessment of use by the species that frequent the area. That is, if very low water counts were available for the rest of the pSPA as they are for the development site, the results would inevitably reduce the importance of the development site by comparison to the rest of the pSPA.
 - With respect to whether the development site is important at different stages of bird usage or as a refuge, the availability of the site is sporadic and so does not 'fit' such an assessment (e.g. it is less available in mid-winter). In addition, in bad weather (particularly stormy conditions) the site is less likely to be exposed due to typically lower pressures and the site is generally more exposed to wind and waves than elsewhere within the Tolka Estuary.

The statement includes the following conclusion:

Based on the detailed assessment undertaken, the EIS and the AA concluded that – with the avoidance and mitigation measures identified therein in place – no adverse effects on the integrity of the North Bull Island SPA and the proposed South Dublin Bay and River Tolka Estuary SPA are expected to arise. The Dublin Gateway Project will not have an adverse effect on Annex I species, biogeographical populations of migratory species or nationally significant populations of waterfowl – that is, on the favourable conservation status – of the proposed SPA and SPA. Moreover, no significant effects in combination with other plans and projects are predicted to arise. The basis for this conclusion with respect to site integrity is:

- i. The development footprint will affect less than 1% of the pSPA area and less than 0.2% of the available intertidal feeding resource for wintering waders. Hence it will still readily accommodate a regularly occurring assemblage of over 20,000 waterfowl;
- ii. There is limited use of the site by Annex 1 species and by birds present in the proposed SPA in internationally important numbers. With respect to the birds present in nationally important numbers, less than 1% of the waterfowl populations in Dublin Bay will be affected;
- iii. The dredge footprint will remain as subtidal habitat and, overall, there will be a negligible loss of estuarine habitat for fish and no impact on terns that feed infrequently on or near to the site;
- iv. The extent of suspended sediment and deposition from the dredged plume and discharge from the reclamation will be insignificant (and controlled);
- v. Any erosion that arises to the immediate north of the reclamation area will be localised and within the lower intertidal/subtidal areas adjacent to the reclamation, which support benthic communities already tolerant of higher currents and are infrequently exposed. As the availability of the intertidal resource to feeding birds will remain the same, an impact on integrity will not arise.

The EIS also concluded that the proposed development will not have an adverse effect on the integrity of the South Dublin Bay cSAC and the North Dublin Bay cSAC, for reasons of no direct or indirect influence on those designated sites or their interest features. Air quality and noise effects will not extend beyond the local area of the works and the modelling results have shown that potential changes in suspended sediment, water quality and water flow will not impact on the Annex 1 intertidal habitats of either site.

9.2.1.20 Mr. Thomas Burns, Brady Shipman Martin, - Landscape and Visual Aspects

This submission includes the following:

- (i) A short video of Dublin Port in the context of Dublin Bay – see disc attached to Statement of Evidence.
- (ii) 12 no. photomontages (with a horizontal coverage of up to 120 degrees) in addition to the 7 no. photomontages (57 degree angle of horizontal coverage) included in the EIS.

It also includes:

- The 120 millimetre lens is considered to give a better context for the proposed development set within the broad sweep of Dublin Bay and the existing port lands.
- The additional photomontages prepared for the oral hearing include a number of night-time views.
- Mitigation measures include the use of cowled lighting in order to reduce light spill and glow.

9.2.1.21 Mr. Paul Gardiner, SC – Legal

This includes:

- A discrepancy between the area to be dredged as described in the public notices (22 hectares) and the area comprised within the red line as shown on the site location map that accompanied the planning application (28.5 hectares) is due to the omission from the former of the area to be dredged between the proposed new berths and the main port navigation channel. The volume of material to be dredged (1,475,000 cubic metres) is correctly stated in the public notices and the correct area and volume are set out at Table 4.4 of the EIS. The potential impacts of the proposed dredging of the entire 28.5 hectares has been assessed in the EIS and other application documentation. The public notices are adequate for the information of the public.
- Notwithstanding that the site of the proposed development is not itself located within a European site and that the proposed classification of the site under Article 4, Birds Directive has not yet been made by the Minister, but having regard to the ECJ determination that the obligations in the Birds Directive apply not only to designated SPA's but also to areas that should have been so designated (Ref. Case C-335/90 Commission V. Spain), the Board should proceed in its assessment of the proposal on the basis, as proposed by the applicant, that the entire area of the proposed development is within an SPA.

- By reference to High Court decision *Klohn V. An Bord Pleanála* [2008] I.E.H.C. 111, the EIS in respect of the proposed development complies with every requirement of EC and Irish national legislation in relation to its contents, including consideration of alternatives, and is entirely adequate to enable assessment by the Board.
- The applicants place no reliance whatever on the provisions of Article 6(4), Habitats Directive. Accordingly the Board, is not required to, and should not, consider whether the proposed development should be carried out for imperative reasons of overriding public interest.
- For the purposes of this application it has been presumed that the environment protection mechanism provided in Article 6(3), Habitats Directive, has been triggered and that, consequently, the Board is obliged to conduct the appropriate assessment required.
- The EIS, the AA and the submissions to the hearing show that all aspects of the project which can effect the sites conservation objectives have been identified in light of the best scientific knowledge in the field.
- In their most recent submissions to the Board, while the NPWS indicates that it is not certain that the development will not affect the integrity of the designated sites concerned, it does not describe any supposed adverse effect in respect of which scientific doubt remains.
- In relation to costs it is submitted that the Board's discretion must be exercised judicially and that no costs be awarded to the Planning Authority or to any other party.

9.2.2 Planning Authority

This essentially repeats the earlier submissions in November 2008 and July 2009 – see Sections 4.0 and 8.1 above.

It also includes:

- The conclusions of the Indecon Report have not yet been considered by the elected members. The Planning Department acknowledges the document and its findings but wishes to state the preferred policy of the City Council continues to be the relocation of the port. While the changes in economic conditions since the publication in 2007 of the Dublin Bay Study are acknowledged the longterm environmental and sustainability benefits, in addition to the direct benefits to the city accruing from the development of port lands for higher value uses, support, in Dublin City Council's opinion, port relocation.
- A summary of the Parks Department Report submitted to An Bord Pleanála in July 2009 and which also includes:

- the assessment of amenity requirements and impacts on amenity users, as well as visual amenity, is wholly inadequate. The site adjoins one of the most important amenities in the region – North Bull Island – and a blue flag beach.
- the statement that the intertidal area affected is not regularly used by the principal designated species for the pSPA on the North Bull Island SPA cannot be supported by the assessment and contradicts the Councils BAP, which was not included in the assessment. The conversion of 21 hectares to mostly impermeable surfaces is contrary to Council policy on conservation and biodiversity.
- A recommendation for an additional condition, relating to financial contributions, to those already set out in the report submitted to the Board in November 2008.

9.2.3 NPWS

This essentially reiterates the main concerns in relation to the proposed development as set out in the earlier written submissions in December 2008 and July 2009 – see Sections 5.2 and 8.2.1 above.

It also includes:

- Emphasis that the examination of site interest features for the SPA’s is incomplete as the wetland habitat as a resource for birds is not specifically identified. It is a special conservation interest in its own right.
- NPWS is satisfied that there will be no negative impacts on any protected vascular plant species and the record of sea pea is regarded as unconfirmed, being apparently based on some other species, and is thus rejected.
- In ECJ Case 418/04 Ireland was cited for non-inclusion in the SPA of the 4.5 hectares that the Dublin Port County previously proposed to infill and this same area has been included in the SPA on foot of the court judgement.

In that case the ECJ found that a 4.5 hectare area “is an integral part of the wetland system and should have been designated as an SPA” (paragraph 138 of judgement). The footprint of the currently proposed development includes the infilling of 21 hectares within the SPA – a multiple of the 4.5 hectares.

- The Class 3 sediments proposed for dredging are considered to be toxic and the probable impact on the infaunal feeding resource for waterbirds remains unresolved. The national expertise in this area resides in the Marine Institute and the NPWS is unsure as to whether the Institute has been consulted.

9.2.4 Birdwatch Ireland

The submission was based on a powerpoint presentation.

It includes:

- The main concerns are that there would be a significant loss of site integrity and that this loss is not fully assessed by the existing information.
- Ireland is extremely important for waterbirds, wintering water birds in particular due to its; location along flyway of arctic-nesting species; mild climate; ice-free feeding opportunities and; abundance of wetlands.
- Details of the role and importance of the I-WeBS bird survey, run by both the NPWS and Birdwatch Ireland.
- Dublin Bay supports many bird species that, on an international level, are decreasing in numbers.
- AA is a separate process to EIA.
- The Waddenzce case (C127-02) placed the burden of proof with the applicant for planning permission and this is based on the Precautionary Principle. If there is any doubt, the project should not go forward.
- More survey effort is required, including assessment of cumulative effects.

Responses to evidence presented on behalf of the applicants include:

- It is not believed that the survey was robust enough to identify whether bird use was rare or just recorded insufficiently (reference Mr. Nairns evidence).
- Birds may use the site on particular types of occasion, so-called rainy day supplies might be needed. Not enough information was gathered to determine if this was actually the case. The site may become more important given pressures that exist in other parts of Dublin Bay.
- The survey effort included; an emphasis on feeding activity as opposed to the range of other activities that are required by bird species; a restricted range of types of tide; insufficient attention to the tern interest.
- When the applicants' data (peak counts low tide) are compared to I-WeBS data (high tide), for the same time periods, the proportions of relevant species using that part of Dublin Bay is quite significant.

9.2.5 Dublin Transportation Office (DTO)

This indicates that contingent on a number of issues being addressed the DTO is not opposed to the further expansion of the port. These issues include:

- Clarification on; how development and related road improvements would impact on local transport objectives for the North Wall Area, including the proposed North Wall QBC and the walking and cycling environment in the area; whether the road improvements identified for North Wall Quay/East Wall Road/East Link Bridge are specifically because of port related traffic.
- While the proposal to extend the existing rail line to the new quayside is welcome other infrastructural measures and current constraints to the growth of rail freight at the port need to be addressed by the applicants and other relevant agencies.
- The need for a Travel Plan for the Dublin Port area as a whole, to include a range of infrastructural and non-infrastructural measures designed to facilitate public transport, walking and cycling access to within the port, and to facilitate the efficient operation of freight movements, including the promotion of rail freight.
- Clarification on the implications of the proposed Eastern Bypass, and associated landtake requirements, on existing facilities/handling capacity in the north port area.

9.2.6 Concerned Blackheath Residents Group Submissions

This comprised three submissions by Ms. Murphy, Ms. Bradley and Mr. O’Calleagh, individual members of the group.

9.2.6.1 Ms. Murphy

This includes:

- Concern in relation to the recreational and amenity value of the bay.
- Concern re. flooding risk and sea-level rise. The idea that sea-level rise will stop at 510 mm not being tenable.
- There is a need for a comprehensive system of coastal protection in Dublin Bay.

9.2.6.2 Ms. Bradley

This includes:

- The development should not proceed until the Dublin Bay Taskforce Report has been published.

- The elephant in the room is the issue of flooding. Query the issue of water displacement.

9.2.6.3 Mr. O’Calleagh

This includes:

- The need for an independent assessment of the capacity issue, particularly with the ending of the Celtic Tiger era.
- The availability of alternatives such as Bremore or the East Point Business Park.
- Reference to the issue of flood risk.
- Reference to the ownership issue.

9.2.7 Irish Seal Sanctuary (Mr. Brendan Price)

This submission is in response to the evidence presented by Mr. Velterop, on behalf of the applicants, on the issue of seals and whales.

It includes:

- The absence of evidence is not evidence of absence.
- The assertion that there is no common seal haul out in the Bay is based largely on desk-based research and the Irish Seal Sanctuary amongst others was not consulted.
- It is well known to those working in the area that seals both feed and breed in the Bay.
- The two species of seal (grey and common) haul out on North Bull Island so that the reference to the nearest haul out being Lambay Island is not correct. The reference to the nearest grey seal breeding colony being Dalkey Island is also untrue.
- The bio-diversity plans of all the local authorities around the Bay acknowledge the presence of seals in the Bay.
- There may be porpoise resident in the Bay and it is possible that the NPWS will seek SAC status for them.
- The extreme sensitivity of the Bay is not recognised in the applicant’s assessment.

9.2.8 Councillor Dermot Lacey – Submission

Councillor Lacey indicated that he was making the submission in his capacity as Chairperson of the Dublin Bay Taskforce. He was not speaking on behalf of the taskforce.

It includes:

- The Task Force has not made a decision in relation to the 52 acres in Dublin Port.
- An Bord Pleanála is required to take into account Government policy. Government policy has charged the Dublin Bay Task Force with setting out and charting the future for Dublin Bay. It would, therefore, be highly premature, for An Bord Pleanála to grant permission for the proposed development at this stage.

9.2.9 Dublin Bay Watch

This submission generally follows the structure of the written submission lodged with the Board in October 2008 (see Section 6.2.2 above). It also includes a legal submission on behalf of both Dublin Bay Watch and the Clontarf Residents Association.

The submission includes the following preliminary point: -

- The recently published Indecon Report clarifies the context of this application namely that “the requirements in terms of National Port capacity must first be specified before any scenarios for reconfiguration of this capacity (including the role or replacement of Dublin Port) are evaluated. Until there is an independent analysis of the provision of alternative facilities this cannot be evaluated”.

The main additional information under the various headings includes the following:

Planning Issues

Includes supporting Planning Report by Brian Meehan and Associates, Planning Consultants.

- The review of the Dublin City Development Plan is currently underway and a draft plan is expected to be published in early-mid 2010. The future development of Dublin Port is one of the topics covered in pre-draft submissions. To grant permission would be a pre-emptive strike to the proper consideration of the matter through the development plan process.
- The Indecon Report considers only economic considerations and does not deal with the strategic planning/land use issues related to the proposed development.

Sustainable Development

Includes input from Jerome Casey, Earhtech Limited.

- The Fisher Report capacity projection to 2014 now been superseded by the Indecon Report which sets the date between 2025 and 2030, and also on the basis of no further alternative port developments on the east coast.
- The Indecon Report refers to the development of alternatives in the context of increasing competition.
- The photographs of the proposed development submitted by the applicants at the hearing significantly understate the vista impact due to the use of a wide lens.
- The most recent IMDO report (August 2009) indicates further declines in national cargo volumes for the first half of 2009, by 24% for 2010, 13% for RoRo and 21% for bulk cargo.
- From the current perspective Indecon's long-term demand forecasts appear to be reasonably prudent and probable. However, its starting point for such growth is much too high.
- If Dublin Port doubled its current productivity, to almost reach that of Belfast in 2007, it would make a major contribution to export competitiveness and it would not have to consider new capacity until 2035-40 at the earliest and then only in the context of the other alternatives mentioned in the Indecon Report not materialising.
- The current proposal to construct a new 360 metre quay wall along Alexander Quay East to accommodate longer ships is welcome in that it utilises the ports landbank in a more productive manner.
- The Indecon survey of Dublin Port tenants indicates that 65% agree that relocation is a real possibility with only 30% believing it was critical for their business to be located in the port.
- Indecon's acceptance of the objective criteria for port efficiency which Dublin Bay Watch first introduced into public discourse.
- In 2007, of 43 EU container ports handling over 200,000 TEU's per year, Dublin ranked 26th in productivity terms. By 2009 it has slipped by a further four places.
- In contrast Belfast was the 10th most productive container port in Europe in 2007. With just 20% of Dublin's quay length Belfast handled 35% of its throughput of TEU's.

- The Indecon Report clarifies that Dublin Port freight throughput destined for and/or from the M50 area is 21.5%, within 50 miles 24.4% and the remainder 49.1% for the rest of ROI and 5% for N.I.
- The Indecon Report indicates that the Bremore facility could deliver better polycentric facilities.
- The latest figures from the November 2009 HGV Management Strategy Review show that the number of 5 + axle vehicles using the port tunnel fell by 42% from peak in August 2007 and the number of 4 axle vehicles fell by 60% in the same period.
- The Indecon Report indicates that leading importers and exporters rank Bremore higher than Dublin Port from a proximity and ease of access point of view and in terms of cost competitiveness.
- It is incomprehensible that Dublin Port Company would countenance the destruction of nearly 100 acres of the Bay instead of dealing with the leasehold arrangements on its lands by compulsory purchase measures.
- In a recent review of the port estate carried out by Map Flow very significant areas were seen to be either under-utilised or waste land.
- By reference to Mr. Potts statement on behalf of the applicants operational noise is likely at Clontarf and the mitigation in relation to the 8 metre high gabion wall is not relevant as the containers are stacked much higher than this.
- The contention (by Mr. Potts) that the port could not operate under normal industrial noise limits which the EPA typically use in relation to property boundaries is a serious concern.
- Piling noise is also a concern.
- In the context of climate change the frequency of flooding events is likely to increase.
- There is no gain to the community in the proposed transfer of land on Bull Island to Dublin City Council.

Environmental Issues

- The Dublin Bay Taskforce has prepared terms of reference for a draft Master Plan for Dublin Bay (October 2008). The draft document proposed the following actions:
 1. Create a vision for Dublin Bay that improves the quality of life for the citizens of Dublin reflecting the views of the Bay's stakeholders.

2. Define what is environmentally sustainable in Dublin Bay having regard to national implementation of relevant EU Environment Directives.
3. Identify the impacts of current predicted climate patterns including global warming.
4. Make recommendations regarding land use, amenities, transport and site designations.
5. Provide guidance to the Planning Authorities on the type, scale and form of development, which will be acceptable in defined locations round the Bay.
6. Enable developments to proceed efficiently by clarifying issues and identifying requirements for co-ordination and consultation.
7. Assist the public in understanding the future character of Dublin Bay, and its unique aspects.
8. Set out how a balance might be struck between public and private investments.

The taskforce will probably take another year to complete its work.

- A submission in relation to flooding makes extensive references to “Climate Change – Scenarios and Impacts for Ireland”, EPA, 2003, including, in particular, its comments/recommendations in relation to sea-level rise, increased frequency and intensity of storm surge events and its conclusions in relation to coastal erosion that substantially endorse the recommendations of Carter. It also includes:
 - recent flood events, including precautionary measures undertaken by Dublin City Council along the Clontarf shoreline last year, and the recently sanctioned Clontarf Flood Defence Project underscore the damage to Dublin of severe flooding in the future.
 - the applicant’s numerical modelling repudiates the evidence in the EPA in relation to increases in wave height and energy as they approach shallow water and the funnelling effect of bays and estuaries by asserting that the proposed development would have no impact or reduce wave heights and tidal range thus reducing flooding risk to the Clontarf frontage. Even if their scenario of increased silting occurs in Clontarf, flooding will be more severe in other areas around the bay.
- The submission also refers to a report of the Flood Defences and Coastal Structures Seminar (30th January 2009), hosted by UCC and its Hydraulics and Maritime Research Centre (HMRC) under the aegis of the Department of Agriculture and the OPW. It includes:

- the need to integrate consideration of existing and future flood risks into the planning process and that a similar approach may be needed for erosion risk.
- avoidance of inappropriate development in areas of flood and erosion risk is an obvious mitigation and climate change adaptation measure.
- A recent news article indicates that the figure of 0.48 metre rise in sea level is now obsolete by reference to flood prevention measures being undertaken by authorities in Holland. Scientists, the article states, are now predicting a sea level rise of 1 metre. What will this rise to under storm surge conditions?
- The submission includes an ornithological report by Ms. Jackie Hunt, MsC, MIEEM. It includes:
 - by reference to ECJ Case C-418/04 the Court decided that the area previously proposed for infill, at that time 4.5 hectares, was considered integral to the wetland ecosystem. A separate and smaller area of 2.2 hectares was also judged integral to the wetland system.
 - the conservation objectives for the site, while not yet documented, can be taken to be “to maintain the wetlands and waterbirds of this site at a favourable conservation status”.
 - habitats exposed on extreme low water spring tides are part of the intertidal wetland system. These habitats support invertebrate communities, provide invertebrate recruitment onto other areas of the wetland system and when available, provide feeding habitat for birds. Extreme low shore habitats are a functioning part of the intertidal system and are an integral part of this system, even if not used by birds.
 - loss of intertidal habitat due to erosion and sedimentation will impact an area of up to 7 hectares.
 - from the bathymetry maps in the EIS it is clear that approximately 20% (estimate by eye only) of extreme low shore intertidal habitat will be lost irreversibly or converted to subtidal habitat within the Tolka Estuary. This loss may be more significant in this part of Dublin Bay as it is used primarily as a feeding and low tide roosting area. The upper reaches of the estuary are already reclaimed and not available to birds at high water.
 - the proposed reclamation/berth creation site was used on average by 16 different species of waterfowl (including terns and auks in the summer months). The peak number of species is 26 and the minimum was 8 (data from Table 8 of the Appropriate Assessment).

Using the peak of 26 species which were recorded on the reclamation/berth creation site 10 of these are listed species under the SPA designation for the Tolka Estuary/Sandymount Strand SPA and 13 are listed under the North Dublin Bay SPA designation.

The three species Oystercatcher, Curlew and Turnstone, which were found in the EIS, to use the reclamation/berth creation site regularly, are part of the qualifying interest for the Tolka estuary and/or North Dublin Bay SPA's.

Dunlin, Turnstone and the Annex 1 species, Bar-tailed Godwit and Common Tern, occurred within the reclamation/berth creation site, occasionally in nationally important numbers.

- Co-ordinated count data shows that, when available, a high percentage (given the size of the site) of Oystercatcher, Curlew and Turnstone, the three species identified as regularly occurring on the reclamation/berth site, have been concentrated on the site relative to the Tolka Estuary as a whole.
- The Group C samples of invertebrates, characterised by an increased biodiversity relative to the other sample groups, were taken from within the extreme low shore intertidal habitats of the reclamation/berth creation site and will be lost as a result of the development.
- The previous development proposals (the subject of EIS's in 1997 and 2002) involved an intertidal habitat loss of 9.6 hectares compared to that of 23.27 hectares in the current proposal. However, it is not clear if bird data has been gathered for this much larger area. It appears, on the basis of the 2008 EIS that only the 2008 Bird Data relates to the larger impact area.
- By reference to the statement of Hamish Hall, on behalf of the applicants, the area to be affected by erosion and/or accretion is not clear (previously stated as 10.75 hectares, now estimated at 7 hectares). There is also the issue of possible recurrence of erosion to those areas to be subject to refill from material won in the maintenance dredge. No data is shown to show the use of these areas by wintering birds.
- Notwithstanding the mitigation proposed to reduce increased sedimentation due to dredging some sedimentation is likely within the Tolka Estuary. This impact must be viewed together with the other greater impacts identified.

9.2.10 Clontarf Residents Association

This includes:

- The Indecon Report clearly shows that Dublin Port has capacity to about 2025-30.
- The effects of ongoing dredging, associated with the development, on the SPA is not adequately addressed.
- The propensity of Dublin Bay to create spits and sand bars, as evidenced by the recent movements resulting from the Sutton to Ringsend drainage works is of grave concern.
- The alleged title to the area is totally inadequate. This matter has been previously raised with the Chief State Solicitors Office and the Minister for Communications Marine and Natural Resources (copy correspondence attached). The documentation submitted by Dublin Port Company to support its claim to possessory title is inadequate.
- The community gain proposal is a “poison chalice” given ongoing maintenance costs.

9.2.11 Dublin Bay Watch/Clontarf Residents Association – Joint Legal Submission, Donal O’Laoire, BL

This submission is laid out in four parts by reference, in turn, to the Birds Directive, the Habitats Directive, the EIA Directive and Proper Planning and Sustainable Development.

The primary submission is that the application falls to be considered under the strict regulatory regime of the Birds Directive (without amendment). The other three submissions are stated to be default submissions in the event of An Bord Pleanála not accepting the first, primary submission.

The submission includes:

1. Birds Directive

- Although the area in question is not yet classified as an SPA, the lack of designation does not imply that a member state can escape its obligations. The area is protected as if it was designated – Ref. ECJ C355/90 (Santona Marsh case).
- The amendment to the Birds Directive contained in Article 7 Habitats Directive, and which provides for a relaxation of the very strict regime under Article 4 Birds Directive, applies from, whichever is the later date, either the date of implementation of the Habitats Directive or the date of classification of an area under the Birds Directive.

- Therefore, areas not classified as SPA's, and which should have been, are governed by Article 4.4 Birds Directive without amendment.
- The Authority for this point is ECJ C374/98 (Basses – Corbieres case).
- The proposed SPA, therefore, is subject to the special protection regime afforded by Article 4 Birds Directive which specifies that member states shall take appropriate steps “to avoid pollution or deterioration of habitat or any disturbances affecting the birds insofar as these would be significant having regard to the objectives of this directive”.
- The practical consequence of this is that the test of whether or not the proposed development is significant is not whether it causes “significant adverse effects” as laid down in the Habitats Directive but rather the much more restrictive test laid down in the Birds Directive, and specifically by reference to the objectives of that directive set out in Article 4.
- The significance of the area in question has already been determined by the ECJ in Case C418/04 where it was held that the area should have been included in the SPA.
- The area considered by the ECJ was just 11 acres of the 52 acres now proposed for infill and the proposed development also includes a further 67.4 acres for dredging etc. To grant planning permission for the development would be blatantly inconsistent with the ECJ judgement.
- Even if it is not accepted that the proposed development is significant, when considering the application in the light of the objectives of the Birds Directive, An Bord Pleanála is still confined to very specific grounds – Ref. ECJ C57/89 (Leybucht Dykes Case) which considered the grounds upon which member states may reduce the area of an SPA.
- The grounds were stated to correspond to “a general interest which is superior to the general interest represented by the ecological objective of the Directive – economic and recreational requirements do not enter into consideration”.
- This point was again determined in ECJ C335/90 (Santona Marsh case). The logic of this judgement is that Ireland (or its emanation An Bord Pleanála) cannot both propose to classify an area as an SPA and reduce that same area by granting planning permission on any ground other than a general interest superior to the ecological objectives of the directive and, in considering the subject application, An Bord Pleanála cannot take economic requirements into account. ECJ C44/95 (Lappel Bank case) is also referenced in this regard.
- Given this exclusion it is submitted that the applicant's entire case is tainted as it is premised on an economic requirement.

- The proposed development would also be in breach of the judgements in ECJ C191/05 where it was stated that a member state may not reduce the surface area of an SPA or alter its boundaries unless the areas excluded are no longer the most suitable for the conservation of species of wild birds within the meaning of Article 4(1) Birds Directive. The very fact that Ireland is in the process of designating the area as an SPA means that it considers the area most suitable for such purpose.

2. Habitats Directive

- The submission of the NPWS constitutes a devastating critique of the application and this is echoed in the submission of Bird Watch Ireland.
- The leading case on the issue of significant effect is ECJ 127/02 (Waddenzee case).
- Given the clear difference of opinion on the scientific proof advised from the various official bodies and individuals it is difficult to see how there cannot but be reasonable scientific doubt as to the likely effect of the development.

3. EIA Directive

- By reference to the heavy metal contaminants identified in the material to be dredged, which are hazardous wastes under EU Directive 91/689/EEC, the EIS fails to identify if the waste is registered or the quantity of hazardous waste illegally disposed or that Dublin Port Company will require a licence from the EPA for its recovery /disposal. This is a material deficiency in the EIS and precludes reasonable scientific certainty of no significant effects and breaches Article 5 EIA Directive.
- The absence of assessment of cumulative effects calls into question whether the EIS meets statutory requirements.
- The EIS fails to contain an outline of alternatives.
- The further surveys and sampling required in relation to contaminated sediment, as referred to in the SMS, in the context of an area subject to numerous environmental designations, is a legal flaw in the EIS.
- The failure to provide comprehensive data on the potential pollution from dredging means that any EIA carried out by An Bord Pleanála is itself legally flawed.
- By reference to DoEHLG Circular letter PL2/07, it is not open to An Bord Pleanála to cure inadequacies or omissions in the EIS by conditions.

4. Proper Planning and Sustainable Development

- The submission of DCC is another damning criticism of the application.
- Reliance is also placed on “Climate Change – Scenarios and impacts for Ireland” (EPA) that advised against further development in river estuaries.
- It is most unusual that an application for planning permission for a strategic infrastructure development should be so severely opposed by such a range of official bodies. By reference to Section 143, Planning and Development Act 2000, and accepting An Bord Pleanála’s discretion, it must be a fair inference that a decision to grant planning permission would likely not be in the interest of proper planning.
- The applicant should have carried out a Sustainable Development Assessment.

9.2.12 An Taisce - Submission

This includes:

- An endorsement of the submissions of Dublin Bay Watch and Clontarf Residents Association, excluding the support for the Bremore proposal.
- The EIS does not meet the information requirements as set out in Articles 3 and 5 and Annex IV, EIA Directive. In particular, it does not provide the required information on direct and indirect effects in relation to climate, nor does it address the issue of impacts on another member state.
- To proceed with the oral hearing without the required data on climate emissions generated by shipping to/from Dublin Port and the carbon footprint of manufacture and production of goods passing through the port means that the overriding environmental impact of this project is not even being quantified, let alone assessed.
- The policy of An Bord Pleanála and other current authorities internationally, of disregarding climate emissions is no longer tenable in the context of mounting scientific evidence in relation to climate change.
- Section 11 of the EIS on air quality does not properly address shipping movements even in national waters entering/leaving Dublin Bay, let alone trans boundary shipping movements.
- The flood modelling is deficient being based on historic data rather than on revised flood models referred to in EPA reports and Met Eireann projections.
- The Water Framework Directive requires member states to prevent deterioration to the status of all bodies of surface water and to protect/enhance/restore such bodies so as to achieve good status by 2015.

The Tolka Estuary, Liffey Estuary Lower and Dublin Bay have all been classified as being at risk of not achieving good status by 2014.

- By reference to Ms. Marie Kendals statement, for the applicants, in relation to the proposal to restrict dredging to the ebb tide, it is extremely difficult to predict any time period for dredging that would not be subject to unpredictable storm events which would spread suspended silt across the bay and particularly into the Tolka Estuary.
- The consideration of alternatives presents a false choice between do nothing or the proposed project. The analysis of the capacity of existing berthage in the port is entirely deficient. The comparisons, in terms of efficiency, with the port of Belfast, as cited by the Dublin Bay Watch, are noted.
- The land interface for the Bremore proposal is now actually proposed at Gormanstown, County Meath.
- There is no proposal (for Bremore) that has legal status. Drogheda Port, although it has now formed a joint venture with Treasury Holdings and the Bremore Port Company, does not have the legal status or remit to develop a port at Bremore. The application to extend its area of legal remit under the Harbours Act was only lodged back in August and a decision is awaited.
- There are overwhelming arguments as to the unsuitability of the proposed location for Bremore viz; SPA designation; archaeology; amenity; river flows. It is not, therefore, an appropriate alternative to the current proposal.
- The prime alternative to the subject proposal is the more efficient use of existing berthage and port area.
- In terms of general economic arguments, there are irreconcilable difficulties presented between overriding global sustainability issues and the sort of growth model that has prevailed over the last 20 years and which is still being promulgated. Reference documentation submitted includes: -
 - Recommendation for December Copenhagen Climate Negotiations by An Taisce, September 2009.
 - Abstract of “The Economics of Climate Change – The Stern Review 2006”.
 - “Chinadependence” The second UK Interdependence Report.
 - “Change for Bad”.
 - “Guaranteed Irishish”.

9.2.13 Sean Haughey T.D.

This includes:

- It is entirely feasible to retain Dublin Port and allow it to continue to operate while accommodating any requirements for additional facilities in the development of a new port at an alternative site or sites.
- The proposal may be in contravention of the Dublin City Development Plan 2005-2011.

9.2.14 Helen McCormack (Sinn Fein)

This includes:

- Concerns re flooding particularly in the context of changed weather patterns in recent years.
- Predictions based on previous levels of activity at Dublin Port are unsustainable.
- Account should be taken of the recommendations of the task force before finalising a decision.
- The amenity value of the bay must be protected.

9.2.15 Cllr. Gerry Breen

This includes:

- Support for the presence of Dublin Port Company in Dublin.
- Query regarding claimed need for facility to cope with ships of 2,000 to 3,000 TEU with draughts up to 12-13 metres and the EIS figures in relation to maintaining the access channel at 7.8 metres that allows a tidal draught of only 11.9 metres.
- Dublin Port Company has made for bad neighbours to the coastal communities and to the City of Dublin.
- Query Dublin Ports efficiency and connectivity. Rail connectivity yet only 2% of port traffic is by rail.

9.2.16 Port of Waterford Company

The submission states that the proposal has not demonstrated a sufficiently robust strategic analysis to justify the level of impact the development will have on the sustainable development of the region. Alternative locations at regional and national level have not been properly assessed.

The submission includes:

- The proposal would conflict with the core objective of the NSS of achieving balanced regional development. It would threaten the viability of other ports such as Waterford and a virtual monopoly position within the unitised freight sector would emerge at Dublin Port.
- The application has little regard to the policy direction, based on the exploration of opportunities for co-operation between ports within an overall integrated transport policy framework, as set out in the Ports Policy Statement 2005.
- Freight capacity within an all island market can be better provided for by alternative locations with significantly improved transportation links. This is illustrated by the experience of Waterford Port where a significant (almost 50%) part of its market place for its container trades is the Greater Dublin Area. Operational efficiencies will further improve with the completion of the motorway network from early 2010.
- It is also critical to consider the ability of Waterford to serve national freight requirements to other gateway settlements in the Atlantic Region.
- Belview Port has a number of advantages including; linkage to the national rail and road networks; nearest port to Continental Europe; proximity to major urban centre; land bank of zoned but undeveloped land; extant planning permission for further expansion.
- The implications for the national economy in the event that Dublin Port could not fulfil its critical role due to operational difficulties must be a material consideration regarding the proposal.
- The Board must be satisfied that it is in a position to assess the economic impacts of the project on the implementation of national ports policy and the justification for the scale of the project.
- The submission includes some details of the main operational parameters at the Port of Waterford.

9.2.17 Bremore Ireland Port Limited

9.2.17.1 Mr. John Spain, John Spain Associates, Planning and Development Consultants

This includes:

Consideration of Alternatives

- Contrary to the applicants ascertions it is entirely practicable for the applicant to study potential alternative locations on the entire east coast, including Bremore Ireland Port.

- Subject to An Bord Pleanála confirming its strategic infrastructure status it is intended to submit a planning application for Bremore Port in 2011.
- Bremore is acknowledged in the Indecon Report as a significant and important alternative to the Dublin Gateway Project. Its potential as such has not been fully considered by the applicants.
- Responses to the analysis of Bremore in the submission of Mr. Durney for the applicants include:
 - There are many examples of both long established and state of the art modern ports that do not have natural harbour characteristics.
 - Bremore is being designed to cater for adverse weather conditions and it is anticipated to operate in all weather conditions including north easterly winds.
 - Bremore can be served directly by a road link to the M1 Motorway (approximately 2 kilometres to the Gormanstown Interchange) and by rail (via a link to the Dublin-Belfast line).
 - The Fingal County Development Plan 2005-2011 contains a specific objective regarding the future development of Bremore.
 - Bremore Ireland Port is fully aware of the archaeological significance of the Neolithic burial sites at Bremore headland and the proposed port is being designed to avoid any adverse impacts.
 - Bremore provides the opportunity to provide a fully state of the art integrated port complex which addresses from the outset the issue of potential land use conflicts. This is in contrast to the Dublin Gateway Project where very significant such issues arise – reference the Dublin Port objection to the Dublin Docklands Development Authority Draft Planning Scheme for Poolbeg.
 - In calculating comparative distances and emissions Mr. Durney incorrectly assumes that Bremore would serve the same market as Dublin Port. Given its strategic location on the Dublin/Belfast corridor and its connections to both conurbations it is envisaged that the pattern and distribution of land journey and trade patterns will be somewhat different to Dublin Port. It will compete more effectively than Dublin Port for trade from all parts of Ireland, including Belfast.
 - Bremore will provide an integrated distribution hub as part of the port complex, significantly reducing truck journeys between ports and distribution warehouses with consequent CO₂ savings.
 - Mr. Durney provides no analysis of the CO₂ differential of developing a new port facility as opposed to extending an existing deficient 19th century port.

- Bremore will encourage greater efficiency in shipping movements in facilitating larger ships than those that can be accommodated in Dublin Port. This will also reduce CO₂ emissions.

Dublin Port Capacity and the Indecon Report

- The Indecon Report concludes that there is a need to develop additional port capacity in Ireland by 2025-2030.
- However, the contention by the applicants that such additional capacity is acutely required is not supported by the Indecon Report.
- While the Indecon Report concludes that the expansion of Dublin Port is one option to deal with the medium to long term requirements for additional capacity it is not the only option. Furthermore, it would not provide the right type of capacity in terms of adequate deep water facilities. The appropriateness of the Dublin Port Gateway proposed in shipping terms has not been addressed in any detail in the Indecon Report.
- The Indecon Report does refer to the availability of adequate deep water depth as impacting on the competitiveness of port services into the future and states that over time some activity would be likely on commercial grounds to shift away from Dublin Port if sufficient competitive alternatives were available.
- Within the time period identified in the Indecon Report when significant additional capacity will be required, an alternative port facility at Bremore can be developed and fully operational. The report also refers to the development of a new port such as Bremore as having significant regional and national benefits and likely to enhance competition in the ports sector.

Operational Limitations of Dublin Gateway

- The statement of Mr. Seamus McLoughlin, for the applicants, indicates that the berth structure proposed is designed to facilitate future deepening to 15 metres alongside, to accommodate larger ships in the future if required, and subject to relevant future statutory consents. There is no assessment of the potential impacts of such further dredging in the current application.
- There is no guarantee that such a Foreshore Licence would be forthcoming so that the design of the proposal is deficient to meet the anticipated needs of the port.
- In a submission to the Joint Committee on Transport (21 October 2009) Mr. Connellan, CEO Dublin Port County, indicated that, in fact, the requirement at Dublin Port would be to cater for 2,000 to 3,000 TEU vessels with draughts of 12 and 13 metres.

- It is clear, therefore, that Dublin Port needs to accommodate larger vessels than the current proposal is designed to cater for. The current proposal only proposes to maintain the access channel at -7.8 metres CD giving a maximum but tidal draught of 11.9 metres at high water. The application contains no assessment of the substantial additional dredging or of the significant environmental and technical implications.
- The applicants references to larger vessels operating partly laden to the Irish market, and thereby being accommodated at Dublin Port, is an unsustainable and economically inefficient proposal.
- Most fully laden vessels of 2000 TEU require a berth depth of in excess of 11 metres and, therefore, cannot be accommodated in the proposed development. They also require a channel depth considerably in excess of the Dublin Port channel depth of 7.8 metres. To be served by Dublin Port, therefore, 2000 TEU vessels must be only partly laden and even then will be subject to a relatively restricted tidal window to enter/exit the port. The proposed development, therefore, is not fit for purpose.

9.2.17.2 Mr. Scott Kerr, PMT Transport Solutions Limited

This includes:

The National Interest

- There are a number of constraints in the Dublin Gateway proposal that indicate that Dublin Port Company is only considering a certain market sector in the unitised cargo business, namely the container feeder service market. The proposal does not fully take account of the medium to long term development of shipping services and the size of ships likely to be used. The national interest requires that port development is considered in a long term time frame and that the markets definition of what constitutes a true deepwater port is provided.
- Dublin's existing near monopoly in Lo-Lo traffic, and lack of competition is also contrary to the national interest.

Trends in Ship Sizes and Service Provision

- 2,000 TEU is not a common design capacity for container vessels.
- Given the proposed maximum low water depth alongside at the proposed berths of 11.0 metres the deepest draught vessel that could normally be berthed there would be 10.5 metres, allowing for the normal 5% for water under the keel at berth. Such ships are unlikely to have a design capacity in excess of 1,200-1,300 TEU.
- Delays caused by tidal windows can be a significant cost item for a ship operator. A modern port subject to such a restriction would be placed at a serious commercial disadvantage.

- Restricting service operators to using vessels of considerably less than 2,000 TEU will result in Irish importers/exporters facing higher costs and/or poorer service levels.

Terminal Design Capacity

- From a practical point of view the following should be considered:
 - All approaching/leaving traffic will use Alexandra Road, already a busy road serving existing port areas.
 - There is no holding/waiting area for vehicles wanting to proceed through the container yard check gates, and which could give rise to queuing on Alexandra Road.
 - The proposed layout of empty containers stacked immediately behind the main quay with a rail line running between the empty and full container stacks is most unusual. Normally the rail line would be located to the rear of the terminal so as not to interfere with operations.
- Query the EIS estimates for capacity – the per hectare figure versus per metre of quay figure. If existing facilities were to operate at the capacity levels projected for the new terminal then the proposed development would not be required for the foreseeable future.

Responses to the applicant's submissions include:

- Irish exporters are penalised compared to UK/Continental competitors by being forced to use feeder services to connect with main line container vessels serving all major markets beyond Europe.

To design facilities that could have a depth of 15 metres but only plan to provide 11 metres at the berth is no statement of confidence to Irish industry that Dublin Port has their interests at heart when providing facilities that cannot accommodate the size of vessel that would likely be used on direct calling services.

- Dwell time primarily occurs because the importer of the container or freight unit finds it more economic to store the unit at the terminal until it is required rather than removing it soon after discharge from the ship and storing it elsewhere. The major part of the solution to the problem lies with the terminal operator and its shipping services customer.
- The examples of UK ports expanding in their original locations, as cited by Mr. Durney for the applicants, include a variety of circumstances particular to each location, and do not all constitute moves back to more central locations as contended.

9.2.17.3 Mr. S. Wray, Ocean Shipping Consultants

This submission provides detailed evidence of the trends towards larger vessel size in the container shipping market, the forces driving these changes and considers how these developments will impact on Irish container trades and port markets.

It includes:

- While the focus of these trends has been the long haul deep sea trades, where economies of scale can be maximised, there will also be increased pressure for larger vessels on all trades due to pressure for scale economies and the “cascading” effect of medium size vessels into secondary trades as they are displaced from the primary deep sea routes by larger vessels.
- It is anticipated that the size of container ships used on the intra-North European trades will increase significantly to average 750 TEU by 2015 with much larger vessels being introduced. The somewhat longer hauls from Ireland to the north continent hubs will see larger vessels typical for the Irish trades.
- The increase in feeder vessel sizes will be a relatively slow process with the largest vessels moving to around 2000 TEU capacity (and possibly considerably larger) from 2015.
- Two major implications for the container port sector in Ireland are identified as follows:
 - Significant increases can be anticipated in the sizes of vessels that are used for feeding containers via transshipment hubs to remote markets. This will be an evolutionary trend that will be a part of the general ship size increase in the trades. In addition, the introduction of new transshipment services from more distant ports in the Gibraltar Straits and the Atlantic islands will see such larger vessels deployed on rotations including the UK, Spain and Ireland. This will see the need for considerably larger vessels. These will rise to around 2,500 TEU and could be significantly larger than this.
 - As demand increases for Irish container trade, there will come a point when the possibility of direct calls on some deep sea trades will become realistic. For example, a direct call in Ireland may make sense as part of a North-America to North Europe service. This will only be possible if Irish ports have the capabilities to berth the kind of vessels that will be used on these trades and are able to offer unrestricted tidal access at all times.

9.2.17.4 Captain T. Drennan, Drennan Marine Consultancy Limited

This includes:

Adequacy of Existing Navigational Channel

- The channel depth is entirely inadequate for a post Dublin Gateway population of shipping.
- The channel is not wide enough to enable a large Dublin Gateway design ship (up to 2,000 TEU) to pass a large non-gateway ship.
- The tidal window for sailing a ship of 10 metres draught to/from the proposed berths, on the particular spring tide examined, was approximately 38% of the time. On neap tides it is possible that the required water level would simply not be achieved.
- Deepening the channel in the future is not straight forward because of the existence of the Dublin Bay Project Pipeline which crosses the channel about 0.6 miles east of Poolbeg Light.
- It is not possible to navigate the ultimate ship size described by Dublin Port Company of over 2,000 TEU in the existing channel even at the highest tides so a major channel upgrade is essential.
- Existing constraints and pressures on port operations are acknowledged in a report from the Marine Casualty Investigation Board into the grounding of the tanker “Bo Traveller” on 17th September 2005.

Increased Risk of Marine Accidents

- The application does not include a marine risk assessment to test the extent to which the marine risk might change in a post Dublin Gateway era.

Inadequate Port Marine Services

- There is no evidence in the application that Dublin Port Company is fully equipped to provide all the other essentials to ensure that the enlarged port will function safely and effectively.

Responses to the applicant’s submissions include:

- In relation to the possible future deepening of the berth to allow an alongside depth of 15 metres n consideration is given to the tidal window required for a ship to sail from such a deep water berth. Even a conservative estimate for limited channel improvement generates a dredge requirement of approximately 7.11 ml.m3. There also remains the obstacle of the Dublin Bay Project Pipeline which imposes a constraint in the depth to which the channel can ever be dredged.

9.3 Cross-questioning

9.3.1 Mr. Gardiner (Applicants) to Bremore Ireland Port Limited

- Mr. Spain (Bremore) confirmed that they agree with the conclusion of the Indecon Report in respect of the need for additional port capacity in Ireland.
- Mr. Spain confirmed that Bremore is not dependant on the outcome of the Dublin Gateway application. It is expected that an application will be lodged in early 2011 and that it will be operational in 2015.
- Mr. Spain indicated that Bremore Port would now be located in the local authority functional area of Meath, right on the border of Fingal.
- Mr. Spain confirmed that Meath County Council does not have as a proposition the development of a port at Bremore in its development plan but Fingal County Council does.
- Mr. Spain confirmed that discussions are progressing with Irish Rail in relation to a connection to the Dublin – Belfast rail line.
- Mr. Spain confirmed that Bremore would be 11-14 kilometres further distant from the M50/M1 Interchange, the key interchange for access to distribution centres etc, around the M50.
- Mr. Spain confirmed that Bremore does not pre-suppose the construction of the Leinster Orbital Route, that, given its location, it would be designed to serve a wider market including the Dublin – Belfast corridor and that it would compete with other ports, including Belfast.
- Mr. Kerr (Bremore) confirmed in relation to his statement that there was no indication from Dublin Port as to how further growth at the end of the ten year period could be accommodated that he was not aware of the revised capacity estimates presented by Mr. Burke (applicants) at the hearing.
- Mr. Kerr confirmed Bremore's contention that it is in Ireland's interest to provide for intercontinental services in the future and that Mr. McLoughlin (applicants) does not seem to have that vision for Ireland through services at Dublin Port.
- Mr. Wray (Bremore) confirmed that for European trades 750 – 800 TEU vessels is probably the maximum required. However, feeder vessels from further south (Atlantic Islands) would be 2,500 TEU or thereabouts.
- By reference to Mr. Wray's statement of evidence, that feeder vessel size is also increasing as a slow process to around 2,000 TEU capacity from 2015, Mr. Gardiner (applicants) notes Dublin Port's application for up to

2,000 TEU, being their estimate of anticipated maximum capacity into the future.

- Mr. Gardiner (applicants) confirmed that it is not the aspiration to use the 15 metre availability any time in the foreseeable future.
- Captain Drennan (Bremore) confirmed that the 15 metre deep berth and the wider dredging measures necessary to serve such a facility is not before the Board in this application.
- Captain Drennan confirmed that some of the shipping accidents he referred to in his evidence may not have been at Dublin Port but reiterated that Dublin probably does have its share of accidents because all ports do.
- Mr. Gardiner (applicants) indicated that, in relation to ship manoeuvrability, the clear distance in the mid river swinging area would be 380 metres or 320 metres with a ship berthed at both Poolbeg and Dublin Gateway rather than the 270 metres suggested in Captain Drennan's evidence. Captain Drennan (Bremore) stood over his measurements and suggested that the differences could only be resolved by further measurement.

9.3.2 Inspector to Applicants and Bremore

- In relation to the depth of water required to cater for a fully laden ship of 2,000 TEU, Mr. Gardiner (applicants) indicated his understanding that the port has already facilitated such ships. Captain Drennan (Bremore) indicated that such ships would have a draught within a range. Typical allowances made are 10% of draught in the channel and 5% at the berth, although different ports/jurisdictions have different views.

9.3.3 Mr. Fitzsimons (Applicants) to NPWS

- M. Kelly (NPWS) rebutted the contention by Dublin Bay Watch that as the site is not yet classified the more protective requirements of Article 4(4) of the Birds Directive applied rather than Article 6 of the Habitats Directive. The requirements of the Birds Directive would amount to a development freeze. The NPWS position is that once a site is published and notified that is the date on which the site is recognised or classified in accordance with the law and thereby allowing the more relaxed requirements of Article 6, and particularly Article 6(4), wherein a derogation is facilitated.
- Mr. Kelly confirmed that the Notice of Intention to Designate indicates that the site includes a number of areas, not just intertidal areas.
- Mr. Kelly confirmed, by reference to the Notice of Intention, that the qualifying interests for the site, as distinct from the conservation interests referred to later in the document, relate exclusively to the species of birds as listed.

- In response to the suggestion that the primary focus of the Notice of Intention is the species and the habitats that sustain them, Mr. Kelly disagreed and referred to the Directive requiring that the wetland be protected as well as the waterbirds. He agreed that the primary detail in the notice relates to the enumeration of a total of 14 species.
- Dr. Tierney (NPWS) indicated that the conservation objectives for the site are based on the special conservation interests which include the qualifying species and the additional conservation interests which includes the wetland habitat. The conservation objective is to maintain the favourable conservation status of the site based on these.
- Dr. Tierney confirmed that the conservation objectives have not been formally set out for the site but in the future when they will be they will be based on the 15 special conservation interests listed in the Notice of Intention to Designate (14 species plus the wetland habitat).
- Dr. Tierney confirmed that no management plan has been prepared for the site.
- Dr. Tierney confirmed that the AA should be based on the special conservation interests as listed.
- Mr. Fitzsimons (applicants) queried the NPWS calculations of areas to be lost as a result of the proposed development, in particular, why they focus exclusively on the intertidal area and omit any reference to subtidal area even though the Notice of Intention refers to some subtidal areas. Dr. Tierney defended the approach adopted.
- Dr. Tierney (NPWS) indicated that he defines intertidal as from the spring high tide to lowest astronomical tide.
- Dr. Tierney confirmed that he did not calculate the area of the portion of shallow marine waters of the bay that is specifically referred to in the Notice of Intention.
- Dr. Tierney indicated that the main conflict, potential conflict, for this development would be the loss of intertidal habitat and adjacent shallow subtidal areas which would be permanently lost.
- Dr. Tierney indicated that the development site is not a main feeding area for the Light-bellied Brent Goose.
- Dr. Tierney indicated that the various surveys/reports inform him that not enough surveys have been done when the site has been exposed.
- Mr. Fitzsimons (applicants) queried the availability of any evidence as to the presence on the development site of the knot, sanderling, bar-tailed

godwit, redshank, common tern, arctic tern or roseate tern. Dr. Tierney (NPWS) referred to the EIS and other documentation before the Board.

- Dr. Tierney confirmed that usage of the site is an important consideration in conjunction with the wetland habitat as that concept goes.
- Dr. Tierney indicated that if you had an absolute value on the site then the proposition that the site being used to a very restricted degree reducing in some way its significance could be accepted but that the problem in this instance is that there hasn't been enough survey to establish the full usage of the area at critical times for the various water bird species.
- Dr. Tierney indicated that there has been very few surveys of the site during the winter months, in particular October, November and December at suitable tidal states.
- Dr. Tierney confirmed that further surveys, conducted between September and November 2009 (since the hearing adjourned) could be of some assistance to the Board in this regard.
- Dr. Tierney clarified that he questions the correction factor (employed by the applicants) for being simplistic in trying to characterise the nature of an estuary which is in constant flux with water birds distributing themselves according to the tidal cycle, moving with the tide edge as feeding grounds become uncovered.
- Dr. Tierney indicated that he could not categorically agree that an area that is infrequently exposed is of less value than one that is frequently exposed to certain birds.
- Dr. Tierney indicated that all of the species listed on the Notice of Intention could feed on an area that has at least some wetted component to it. Common Terns feed in subtidal areas by plunge diving for fish. Similarly arctic and roseates, if they are there, would feed in subtidal waters. They can feed over many metres of water, depth is not a constraining factor.
- Dr. Tierney indicated that if an area is infrequently uncovered the potential prey items of the birds have a chance to reproduce and grow so that when they are exposed the area has a higher resource value to birds as opposed to those areas that are frequently exposed and depleted of their prey items.
- Dr. Tierney confirmed that infrequently exposed areas are still subject to predation by other, non-bird species, such as fish and invertebrates. During the winter months, in these areas of intertidal, prey depletion by birds would be a main driver of prey abundance. In response to the proposition that there are other factors in play he stated that there are a lot of uncertainties with quantifying and qualifying the ecosystem which again calls into question the adequacy of a simplistic correction factor.

- Dr. Tierney indicated that biodiversity is not the be all and end as a feeding resource for waterbirds, but is one factor among several.
- Mr. Kelly (NPWS) confirmed that, given resources available and priorities, conservation objectives for the site will not be produced in the near future. The same applies to a management plan.
- Mr. Kelly confirmed that in terms of the preparation of an AA the core documents are the Notice of Intention to Designate and the Site Synopsis.

9.3.4 Mr. Richard Nairn (for the applicants)

Mr. Nairn submitted a report on further bird surveys conducted during September – November 2009.

The report concludes that the site is only of minor significance for most bird species and the proposed development will not cause any significant effects on the populations of waterbird species in Dublin Bay.

9.3.5 Ms. Uí Bhroin (for Mr. Sweetman) to NPWS

- Mr. Kelly (NPWS) confirmed that Ireland has not yet signed into law the Statutory Instrument for the South Dublin Bay and River Tolka SPA.
- Mr. Kelly confirmed that Dublin Port Company have not received any derogation licences under the Habitats Directive for works they proposed to undertake on the site.
- Dr. Tierney (NPWS) confirmed that birds, when feeding, will go for the most profitable areas.

9.3.6 Inspector to NPWS

- Mr. Kelly (NPWS) confirmed, in relation to conservation objectives, that there is no further information that can be made available at this time over and above that already taken into account by the applicants in their assessment of the project.

9.3.7 Ms. O’Leary (for Dublin Bay Watch) to NPWS

- Mr. Kelly (NPWS) confirmed that the view of the department that the application comes under the Habitats Directive and not the Birds Directive is not a change of procedure. The Department has always taken the view that Article 6 applies from the date of notification to the public or to landowners. Ref. the Dragaggi Principle arising from an ECJ judgement that addressed this point.

9.4 Further Submissions

9.4.1 Ms. Elizabeth Mawson, No. 421 Clontarf Road, Clontarf

This includes:

- Dublin Bay is a wonderful natural amenity.
- The lack of interest/concern shown to the residents of Clontarf and surrounding areas.
- The applicants 120 degree angle camera shots that make the Bull Wall and Ringsend seem much further from the Clontarf Road than they actually are.
- Silting up of the bay is already evident.
- The Dublin City Council flood defence scheme as evidence of flood risk.
- The claimed existing 24 operation of the port being on an “as required” basis indicating that the need for more land cannot be so great.
- Silting will give rise to a ‘stink’.
- The whole truth is not being told in relation to noise.
- Dust and dirt are also likely to be issues.
- Query re Dublin Port Company’s estate management practices. There is already sufficient land. The acquisition is for real estate purposes and not from necessity.
- Only 50% of the freight through the port is for Dublin. The remaining 50% is for elsewhere and causes unnecessary traffic problems within Dublin.
- Bremore is a potential alternative.
- Who is going to be responsible for compensation in the event of flooding?
- Flooding is not just a result of global warming. The causeway and reclamation to date have already contributed.
- Outstanding studies of the Bay remain to be completed.

9.4.2 Mr. Peter Bailey (for Ms. Mary Bailey), 64 Hollybrook Road, Clontarf

This includes:

- The development will be a major visual obstruction in the city.
- The amenity value of Dublin Bay to the city cannot be stressed highly enough.
- The photographs presented give the false impression that the development would be far away.
- The development is not necessary given current operational inefficiencies at the port.

9.4.3 Mr. Frank Hamill, 20 Dollymount Avenue, Dollymount

This essentially repeats the points made in his original written submission.

It also includes:

- The applicants photographs are misleading.
- The importance of the amenity and tourism value of the Bay.

9.5 Cross-questioning

9.5.1 Mr. Fitzsimons (applicants) to Ms. Harris (Dublin City Council)

- Ms. Harris indicated that under the EU Guidance notes for AA one may take into account a variety of existing plans and not be confined to those produced by NPWS.
- Ms. Harris acknowledged that the EIS (Section 7.1, Flora) refers to consideration of the BAP but states that it does not appear to have manifested itself in the assessment.
- Ms. Harris also referred to the North Bull Island Management Plan.
- Ms. Harris indicated that while the applicants presentations to the oral hearing had included further characterisation of the development site there were still areas which require certain habitats and the interaction between them and the proposed development to be characterised more fully.
- Ms. Harris indicated her acceptance of Mr. Nairn's evidence of the infrequent use of the development site by the Light-bellied Brent Goose.
- Ms. Harris accepted that the frequency of use of a site is a factor that one considers in determining whether or not a particular area is valuable.

- Ms. Harris confirmed her criticism of data collected in May 2008 as it may be inaccurate in relation to wintering birds but accepted that continued survey outside the winter months is useful as some bird species are present throughout the year.
- Ms. Harris confirmed, in relation to her previous reference to the BAP, that there are no roosting terns at all on the development site between the months of July and early September. She did, however, refer to the possibility that terns may roost adjacent to the site and that there could still, therefore, be a potential construction impact.
- Ms. Harris indicated her acceptance of Mr. Nairn's evidence that sanderling has never used the development site but also referred to the context of a range of species.
- Ms. Harris indicated that regular usage could in fact be fluctuating given the estuarine nature of the site.
- Ms. Harris accepted that on the basis of the data presented the roseate tern has never used the site.
- Ms. Harris indicated that her comments in relation to potential disturbance from construction noise pre-dated Mr. Nairn's (applicant's) submission.
- Ms. Harris accepted that when the development site is exposed this is the point of maximum exposure across Dublin Bay.

9.6 Further Submissions

9.6.1 Mr. Kelly, 276 Clontarf Road, Clontarf.

This includes:

- The proposal would be an abomination on the seafront in Clontarf, an amenity enjoyed by the population of Dublin.
- The photomontage views are totally deceptive and do not properly represent the impact of the development.
- The attempted screening of existing areas is poor.
- Why have the Dublin Port Company leased so much of their property?
- Commentary on the UK examples of port developments cited by the applicants – circumstances in each case not the same as in Dublin.

9.6.2 Mr. Fagan, 165 Seafield Road East, Clontarf.

This includes:

- Reference to flood risk.

9.6.3 Mr. Justin O’Flaherty, (for Eleanor Lanigan), 282 Clontarf Road, Clontarf

This includes:

- The issue of alternatives has not been dealt with in a satisfactory manner in the EIS. The potential of Arklow, Bremore and other ports.
- There are no capacity issues at Dublin Port at present – ref. Indecon.
- Every port on the east coast has a rail link.
- Ports in most major cities have migrated out of urban areas over time.
- Dublin Port has a virtual monopoly on the east coast.
- The development would be a totally unnecessary intrusion into the vista of the Bay.
- The existing screening of the port is a joke.
- Existing port operations are very noisy, by day and night.

9.6.4 Mr. Sean Dublin Bay Loftus, Nephin, 5 Seafield Avenue, Clontarf.

This includes:

- There are alternative locations and no need to expand at least until 2025 – Ref. Indecon.
- The Government should tell Drogheda Port Company and Dublin Port Company, both owned by the state, to enter into a joint venture to develop a deepwater port at Bremore.
- The proposal is premature pending a plan for the Bay and it contravenes Policy CUF6 of the Dublin City Development Plan.
- The proposal will give rise to periodic flooding.
- It would be highly undemocratic if the objections of so many people were not taken into account by An Bord Pleanála when coming to a decision.

- The Clontarf Yacht and Boat Club will lose its position as a sailing club due to siltation.
- When economic costs together with environmental and social disadvantages of expanding the existing port are considered Indecon's second option of the development of Bremore quickly becomes the best option.
- A stay should be put on the application until the three studies of Dublin Bay are fully assessed.
- There is no need for the proposed expansion.

9.6.5 Mr. Martin Clynes, 50 Kincora Grove, Clontarf.

This includes:

- Dublin Bay is a unique amenity.
- The development would have a serious negative impact on the visual amenity of the area.
- It would give rise to a deterioration in water quality.
- The development will increase flood risk.
- There will be an increase in traffic.
- There will be an impact on wildlife.
- There is likely to be an increase in noise pollution.
- The development is not necessary and there are alternative locations.

9.6.6 Mr. Michael Shannon, 99 Mount Prospect Avenue, Clontarf.

This includes:

- Concern re visual impact and traffic issues.
- There are alternatives.
- The development will increase the risk of flooding.
- The development will create a precedent for further reclamation.

9.6.7 Mr. John P. Tuite, 197 Mount Prospect Avenue, Clontarf.

This includes:

- Dublin Port is extremely inefficient.
- Noise is an issue, particularly at night.
- The development will have a serious impact on the vista.
- Flooding is an issue.

9.6.8 Mr. David McPherson, 50 Vernon Park, Clontarf.

This includes:

- The evidence does not support the contention that rail will become a more important means of transport for freight in the future. Despite its location at the heart of the national rail network, currently rail only accounts for about 1.6% of the ports throughput. A rail connection has been lost as a result of construction at the Point Depot.
- Existing landscaping in the port is poor.
- Further reclamation is likely to be needed for future expansion.
- The community gain proposal is cynical.
- The applicants photographs are misleading, taken with a very wide angle lens.

9.6.9 Mr. Joe Malone (for Elizabeth Nolan), 1 Chelsea Gardens, Clontarf.

This includes:

- The extent of infill in the Bay to date is unbelievable.
- The applicants photographs are misleading.
- Flooding is a serious risk.

9.6.10 Councillor Bronwyn Maher

Councillor Maher was chair of the Dublin Bay Taskforce between June 2008 and June 2009 and the submission was stated to focus on the work of the taskforce.

It includes:

- The application should not be decided until the work of the taskforce is completed.
- The taskforce met from July last year to May of this year and the Dublin Regional Authority adopted its recommendations at its last meeting and sent them to the Minister in September.
- The recommendations outlined a mechanism for drawing up a management plan for Dublin Bay and for coastal zone management. It describes the area to be mapped and included in the plan and it outlines and recommends that any plan for the bay be drawn up using best practice guidelines recommended by the EU and the UN. Dublin Port Company is a full member of the taskforce.
- Visual impact is a very important issue.

9.7 Cross-questioning

9.7.1 Inspector to Ms. Hunt (Dublin Bay Watch)

- Ms. Hunt indicated that the new bird survey data submitted by the applicants does not change significantly her evidence.

9.7.2 Mr. Fitzsimons (Applicants) to Ms. Hunt (Dublin Bay Watch)

- Ms. Hunt agreed that one could value different parts of a wetland system in different ways.
- By reference to the Notice of Intention to Designate Ms. Hunt indicated that there is ambiguity in the citation between “qualifying interests” and “special conservation interests”. She checked with the NPWS (Dr. Tierney) and it is her understanding that all features referred to, i.e. species listed and wetlands and waterbirds, are qualifying interests for the site. She also stated that the assemblage of 20,000 waterbirds on the site is another qualifying criteria and that all of the birds, including the nationally important numbers, are important to the site.
- Mr. Fitzsimons (applicants) emphasised the fact that, for whatever reason, the NPWS had chosen to distinguish between qualifying interests and special conservation interests.
- Ms. Hunt indicated that she did not consider that any distinction should be made between the categories – they are all listed under qualifying interests.
- Ms. Hunt agreed that, in the absence of published conservation objectives for the site, it is valid to look at the interests cited on the Notice of Intention to Designate.

- Ms. Hunt confirmed that the Tolka Estuary, including the development site, is not counted during I-WeBs because it is submerged during high tides and I-WeBs is a high tide count.
- Ms. Hunt confirmed that her submission focussed on the intertidal rather than on the subtidal.
- Ms. Hunt confirmed that when the development site is exposed all of the intertidal habitats of Dublin Bay are exposed.
- Ms. Hunt agreed that the entire development site is below MLWS.
- Ms. Hunt confirmed that her estimate of low shore intertidal habitat within the development site was calculated by eye. She focussed on the Tolka Estuary because it's an estuarine system whereas Dublin Bay as a whole includes a range of habitat types.
- Ms. Hunt indicated that the Tolka Estuary is used for feeding and roosting at low tide.
- Ms. Hunt indicated that the development site is of importance as a feeding site and is not used for roosting.
- Ms. Hunt confirmed that when looking at designating SPA's one looks for thresholds of national and international importance (in terms of numbers) and regular use.
- Ms. Hunt agreed that as oystercatcher, curlew and turnstone occurred within the development site on most of the counts that were undertaken their use is considered to be regular. Mr. Fitzsimons indicated that Mr. Nairn's (applicants) evidence is that these species did not in fact occur on most counts.
- Mr. Fitzsimons queried Ms. Hunt's contention that dunlin occurred within the development site in nationally important numbers.
- Ms. Hunt indicated that the argument cannot be focussed solely on regular use, though it is important. Occasional use by some species can also be important.
- Ms. Hunt agreed that, in assessing whether or not a development may or may not have an adverse effect on the integrity of the site, regular use is a factor together with others.
- Ms. Hunt reiterated that whether one refers to the larger development site area or the smaller one there is a higher density of birds using the development site compared to the rest of the Tolka Estuary.

- Ms. Hunt indicated that, on the basis of the density analysis, when the entire intertidal area of Dublin Bay is available certain species appear to be favouring the proposed development site.
- Ms. Hunt reiterated her overall conclusions; that while the development site is infrequently exposed it supports a higher density of birds; that some species appear to be favouring it; that its an integral part of the intertidal system; that the benthic community there contributes to that system, including recruitment into the system.

9.7.3 Ms. Harris (Dublin City Council) to Ms. Hunt (Dublin Bay Watch)

- Ms. Hunt indicated that while on the occasion of the 1997 count the site had nationally important numbers of dunlin it does not itself regularly support nationally important numbers.
- Ms. Hunt indicated that when the site is available it could be providing better quality feeding habitat for birds so that the length of time of exposure is not necessarily the only true indicator of its value as a feeding resource.

9.7.4 Mr. Byrne/Ms. Uí Bhroin (for Mr. Sweetman) to Ms. Hunt (Dublin Bay Watch)

- Ms. Hunt confirmed that the development site is used by some birds even when not exposed (refer to sandwich terns in ECJ judgement) but that this is not considered to be as important an issue as use of the intertidal habitats by wading birds.
- Ms. Hunt reiterated her conclusions that there is enough evidence to say that the development is likely to have an adverse effect on the SPA.

9.7.5 Inspector to Ms. Hunt (Dublin Bay Watch)

- Ms. Hunt indicated that she did not think that a small number of night-time bird counts relative to daytime counts was detrimental to getting a picture of their feeding habits.

9.7.6 Ms. O'Leary (Dublin Bay Watch) to Ms. Hunt (Dublin Bay Watch)

- Ms. Hunt confirmed that the ECJ has held that the development site is an integral part of the wetland ecosystem.

9.8 Further Submissions

9.8.1 Ms. S. Murphy, 64 Blackheath Gardens, Clontarf.

This includes:

- Clontarf is a prime amenity area.

- The proposed development will increase the level of noise, interfere with seascapes and increase the risk of flooding.
- The proposal will give rise to requests for further port expansion.

9.8.2 Ms. Deirdre Tobin, 35 Castle Avenue, Clontarf.

This includes:

- Is there a hidden agenda in the future plan to dredge even deeper so as to accommodate even larger ships?
- Moving the oil tank farm would free up about 90 acres of land. Offshore pumping of oil would obviate the need for oil tankers in the port.
- The absence of submission of support from freight/stevedoring companies.
- The applicants photographs are not representative of the view with the naked eye.
- The National Spatial Strategy indicates other options rather than expanding Dublin Port.
- The proposed SPA boundary is only returning the area to approximate to that as originally proposed.
- The noise assessment appears to have been really only one exercise. There is no information on weather conditions at the time.
- The sighting of one seal on just one day of survey on North Bull Island equates to a 100% success rate.
- The discrepancies in the public notice vis-à-vis the lodged drawings (site area as referred to by Mr. Gardiner for the applicants) would, if this was an application to a Planning Authority, have resulted in the application being rejected as invalid.
- Further infill will accelerate the siltation in the bay that is already underway.

9.9 Cross-questioning

9.9.1 Ms. O’Leary (Dublin Bay Watch) to Mr. Burns (Applicants)

- Mr. Burns indicated that the first set of photomontages included in the EIS were taken with a 50 millimetre lens. The second set, presented at the oral hearing, were also taken with a 50 millimetre lens but they were joined to give a wider view.

- Mr. Burns indicated that while photomontages are useful in a visual presentation they are not the visual assessment. They are only an aid, they do not and cannot represent reality.
- Mr. Burns indicated that there are a whole series of issues that effect how an image of a development may look closer or further away.
- Mr. Burns indicated that a different focal length would give a different concept of how near or far a thing is.
- Mr. Burns indicated that no matter what image is used the scale of the development relative to the scale of the background would still be exactly the same and would be correct.
- Mr. Burns indicated that the photomontages reflect what you see in reality in the best way that you can do with a camera.
- Mr. Lyons (a photographer advising Ms. O'Leary) insisted that the photomontages as presented do not represent what the eye actually sees.

9.9.2 Ms. Harris (Dublin City Council) to Mr. Burns (Applicants)

- Mr. Burns indicated that it could be argued that private views are more important than views from public areas.
- Mr. Burns indicated that his assessment fully recognised the amenity of the Clontarf promenade, Bull Island, Bull Wall, South Wall and other areas.
- Ms. Harris referred to the continuous nature of the public parks and open spaces which stretch from Fairview through Clontarf and onwards to Raheny and Sutton.
- Mr. Burns confirmed that the assessment recognised that there would be a loss of views of the South Dublin Bay coastline from the Clontarf promenade. However, the promenade is located within the Dublin Port area and its defining view is the existing port and this is not changing.
- Mr. Burns indicated that the visual impact would be localised and restricted and would have no negative impact on the wider character of the bay.
- Mr. Burns suggested that the greatest recreational use is probably just walking, the promenade and the two walls.
- Mr. Burns suggested that there is no significant impact from any beach because of the development.

- Mr. Burns indicated that the development would have no visual impact from Howth or upon Bull Island or any of the SAAO.
- Ms. Harris referred to the S2S project, a proposed walking/cycling route from Sutton to Sandycove, as a specific object of the Development Plan.
- Mr. Burns reiterated that the area of prime visual influence for the development is the area contained within the south peninsula of Ringsend, the two walls and Clontarf.

9.10 Further Submissions

9.10.1 Mr. Sweetman, 14 Postnet, 184 Lower Rathmines Road, Dublin 6 (represented by Ms. Uí Bhroin and Mr. Byrne)

This includes:

- Support for the submissions of Dublin Bay Watch and Clontarf Residents Association, exempting that for the Bremore proposal.
- Support for the wider ecological argument advanced by An Taisce in relation to cumulative effects and climate change.
- The combination of changed economic conditions, the need to manage emissions due to climate change and the impact of carbon levies will result in reduced volumes of TEU's and the space requirement to accommodate them.
- The proposal will require continual dredging of the bay.
- To allow this application would be to commit to what is unsustainable.
- The current economic downturn provides the opportunity to pause and make a more informed decision for the future.
- In relation to the new information submitted by the applicants (the additional bird count data) the Board is in breach of Article 6 EIA Directive in that in accepting the information it has failed to ensure that it has been made available to the public concerned.
- Reference to post consent surveys and relevant ECJ case judgements.
- Endorsement of the legal submission by Mr. O'Laoire on behalf of Dublin Bay Watch and Clontarf Residents Association. Confirmation by Mr. Kelly (NPWS) that the statutory instrument which is the final step in classifying the SPA has not in fact been signed into law indicates that the NPWS's contrary position, that the less restrictive requirements of the Habitats Directive apply in this case, rather than the Birds Directive, seems unjustified and without sound basis.

- ECJ Case C-418/04 has already examined the SPA in this case and adjudicated that the area of the proposed development is an integral part of the wetland ecosystem.
- The evidence of Ms. Jackie Hunt (Dublin Bay Watch) indicates that the development site is in fact favoured by bird species while they have at their disposal the whole bay.
- The application has engaged in project splitting.
- The strategic infrastructure framework does not facilitate a substantive or procedural review as provided for under Article 10(a) EIA Directive (as amended) and, therefore, there is a legal argument as to the validity of the proceedings. Where an issue relating to EU law might be unclear An Bord Pleanála is required to refer the matter at the earliest possible point to avoid making an illegal decision.
- The highly prized landscape of Dublin Bay will be compromised by the development.
- The Dublin Bay habitats of international importance will be compromised by the development.
- The ownership of the site is at issue.
- The legality of the planning application form as completed and the site notice is an issue.

9.11 Cross-questioning

9.11.1 Mr. Fitzsimons (Applicants) to Ms. Siobhain Egan (Birdwatch Ireland)

- Ms. Egan confirmed that, in relation to the table at the second last page of her evidence, the I-WeBs count data is over the same blocks, the same time periods for which the applicants also did survey work. She confirmed that the I-WeBs counts are high tide counts whereas the applicants' counts refer to low tide. The table, therefore, gives an indication of what proportion of the populations present in Dublin Bay over the same period of time are using the site area.
- Mr. Fitzsimons referred to the fact that at high tide many of the species of birds leave the intertidal area and move inland and also are not included in the I-WeBs estimates. In response Ms. Egan confirmed that I-WeBs counts are taken over a period of time as it approaches high tide so as to pick up as many birds as possible. She acknowledged that during the process there is a movement of birds so that the design of I-WeBs has to take that into account.

- Ms. Egan confirmed that a high tide count would generally exclude brent geese as these will have moved inland.
- Mr. Fitzsimons suggested, therefore, that Brent Geese would more likely be caught in a low tide survey in relation to the development site than as part of the Dublin Bay wide I-WeBs site. In response Ms. Egan indicated that the issue is that we do not know. While the chances are that more species move inland or to different sites as high tide approaches we cannot say what proportion of that species would be captured by Dublin Bay counts necessarily.
- Ms. Egan confirmed the same scenario would apply to the oystercatcher.
- Ms. Egan reiterated that the applicants AA did not cover things sufficiently, in particular cumulative impacts.
- Mr. Fitzsimons referred to his instructions that the development site is not used for roosting. Ms. Egan queried if there was data available to support that.
- Ms. Egan indicated that, in relation to the issue of frequency of use, it depends on what you are looking at and that the important issue is to address species needs. The applicants data shows that the development site is being selected by certain species even when other areas are available.
- Ms. Egan indicated that, according to the applicants' data, twelve listed species use the development site for feeding. She also referred to the tern interest which is very important.
- Ms. Egan indicated that the assessment carried out under AA is different to that under EIA. It is not appropriate under AA to assess the scale or magnitude of impacts. The assessment must be against the conservation objectives for the site and the issue is maintaining the integrity of the site. So even if one small part of the site is not used at all by any birds at any point in time it may still be an important part of the site because the obligation is to maintain and enhance these areas and populations of species they support into the longer term. Over time there is a requirement for change in a site and there has to be that allowance so that in the longer term conservation objectives are achieved.

9.11.2 Inspector to Ms. Egan (Birdwatch Ireland)

- Ms. Egan referred to the new bird survey report submitted by the applicants and advised that a quotation in the report from the Irish East Coast Bird Report 2002 should include the remainder of the paragraph from which it was extracted and which indicates the value and importance of maintaining Dublin Bay and its constituent parts.

9.11.3 Mr. Gardiner (Applicants) to Mr. Price (Irish Seal Sanctuary)

- Mr. Price confirmed that the major seal haul-out site on North Bull Island is at Sutton Creek, approximately 5 kilometres from the development site.
- Mr. Price referred to the possibility of construction noise disturbance to seals feeding or foraging near the development site and that the assessments carried out do not address the actual seal's use of the area.
- Mr. Price confirmed that he had never seen seals hauled out at the development site. He had seen them using the shallows on one or two occasions.
- Mr. Price disagreed with the proposition that porpoises and dolphins do not use port areas and referred to numerous sightings in and around Dublin Bay.
- Mr. Price indicated that Dalkey Island was both a haul-out and breeding area for seals and that it is suspected that seals may be actually breeding in the bay, more than likely on North Bull Island, and perhaps at other sites.
- Mr. Price indicated that most of Mr. Velterops (applicants) references were to islands, Ireland's Eye, Lambay Island and Skerries Island, that is, outside of Dublin Bay.
- Mr. Gardiner referred to the fact that the seal activity, including breeding, within Dublin Bay as referred to by Mr. Price has taken place in the context of port operations. Mr. Price confirmed this to be the case.

9.11.4 Inspector to Mr. Price (Irish Seal Sanctuary)

- Mr. Price confirmed that the site at Sutton Creek would be the closest and most frequently used haul-out site for seals to the proposed development site.

9.11.5 Ms. Tobin (35 Castle Avenue) to Mr. Price (Irish Seal Sanctuary)

- Mr. Price confirmed that seals are regularly found in Howth Harbour.

9.12 Further Submissions

9.12.1 Bremore Ireland Port Limited

In response to an earlier request from the Inspector, Mr. Spain submitted a short note, prepared by Drennan Marine Consultancy, on berth and channel depth requirements for ships in the size range of approximately 2000 TEU. The conclusions include the following: -

- The majority of the target ship size for Dublin Gateway (2000 TEU) cannot remain berthed at low water when the ship is fully loaded.
- The vast majority of the target ship size for Dublin Gateway (2000 TEU) can only navigate in the channel by utilising the tidal window.
- For a substantial number of the target ship size for Dublin Gateway (2000 TEU), the tide will never achieve a sufficient rise to enable the ship to navigate the channel when fully laden.

9.13 Cross-Questioning

9.13.1 Mr. Cawley to Dublin City Council

- Mr. Conway (Dublin City Council) indicated that the Clontarf Coastal Protection scheme is now at detailed design completion stage, having been approved by An Bord Pleanála in July 2008, and is awaiting a decision on funding.
- Mr. Conway indicated that the design criteria for the scheme included a 1:200 year return period and taking account of sea level rise/climate change in accordance with ICPP and other expert groups. The general wall/mounding height will vary between 1.2 and 2.4 metres depending on ground levels.
- Mr. Conway confirmed that the scheme is high priority, though acknowledging that in the current economic climate it was not possible to be certain about funding.
- Mr. Conway indicated satisfaction with the fluvial flood modelling applied by the applicants and derived from the Dublin Coastal Flooding Protection Project.
- Mr. Conway indicated that there are no coastal erosion issues within the port area or west of the Bull Wall.

9.13.2 Inspector to Dublin City Council

- Mr. O’Sullivan (Dublin City Council) confirmed that the main concern in relation to water supply is the quality of the water and that he does not see any immediate solution. This is why he did not recommend a condition but recommended a refusal.
- Mr. Conway (Dublin City Council) indicated that the concern raised in relation to SUDS could be addressed by condition. The issue is the quality of any runoff rather than the volume.
- Mr. Conway (Dublin City Council) indicated that the Dublin Bay Project Pipeline was designed to be well below all shipping channels including

any risk from anchoring or normal dredging at the time. This particular application may not have been taken into account. The route of the pipeline is well out into the bay, running from east of Bull Island on a loop around to the Ringsend Wastewater Treatment Works.

9.14 Further Submission

9.14.1 Ms. Harris (Dublin City Council)

This is in response to an earlier request from the Inspector for comments on the applicants' additional bird counts report submitted at the hearing. It includes:

- It should be noted that the data (Table 1) indicates the key months for exposure of the intertidal sediment occurs in spring, from March to April. This includes the months preceding the breeding season for protected species such as terns, which is April to July.
- The reports reference to the presence of the sand mason worm is of significance in that it might indicate the presence of a reef, on Annex 1 habitat under the Habitats Directive. The extent and nature of the sandworm habitat may require further investigation.
- It is difficult to get an accurate picture of the regularity and frequency of usage of the site by some of the bird species.
- The report tries to calculate the significance of the feeding resource of the site for oystercatchers as measured by time of potential availability of the site for feeding in relation to the Tolka Estuary and Dublin Bay. This is a repeat of the argument in the EIS that the smallness of the development area and the limited number of hours of exposure indicate lack of importance. However, the recorded count of oystercatcher of 3.5% of peak counts for Dublin Bay over only a three month period in 2009 would appear to indicate otherwise.
- The EU Guidance on Managing Natura 2000 Sites indicates that any event that contributes to a reduction of the size of the habitat of species within the site can be regarded as a significant disturbance and that this may lead to deterioration.

9.15 Cross-Questioning

9.15.1 Ms. Harris (Dublin City Council) to Applicants

- Ms. John (applicants) confirmed that in the preparation of the EIS the applicants were aware of and had sight of the draft management plan for North Bull Island prepared by Dublin City Council. Ms. Harris referred to Dublin City Development Plan Objective H44 which signals the preparation of such a plan.

- Ms. Harris also referred to development plan Objective H23, which refers to a proposed special amenity area for south Dublin Bay, the National Nature Designation and the National Bird Sanctuary Designation for Bull Island. Ms. John/Mr. Nairn (applicants) indicated that the proposed development would not affect these areas.
- Mr. Velterop (applicants) indicated that, in relation to seal haul-out sites, North Bull Island was missed from the rapid baseline assessment initially carried out for the EIS. This was based on a review of surveys carried out by NPWS.
- Ms. Harris (Dublin City Council) referred to the evidence for regular populations of grey and common seals hauled out on North Bull Island, which is also believed to be a breeding site, from the staff of the Bull Island Interpretative Centre and which is also reported in the BAP and the North Bull Island Management Plan. She also indicated that the NPWS surveys referred to by the applicants did not include Dublin Bay.
- Mr. Velterop indicated that as the haul out site on North Bull Island is approximately 5 kilometres from the development site, and the site itself is not such a site, the issue is not one of relevance.
- Ms. Harris referred to the potential for passage of seals to/from breeding or feeding areas and that as Dublin Bay has not been surveyed adequate information is not available.
- Mr. Velterop disagreed and referred to the numerous specialists that worked within the site over the years, none having seen seals. While seals do occur in ports, in ones or twos following trawlers for example, and you will occasionally see the odd seal hauled-out in a port, you would not see 200 seals hauled out at the development site.
- Mr. Velterop indicated that salmonid smolts migrate downstream during conditions of high fresh water discharge and at night between March and May and generally pass through the estuary in a matter of hours. The dredging operations are scheduled to be undertaken from September to March so, for the main, outside the downstream migratory timeframe.
- Mr. Velterop indicated that there was no assessment of the potential for toxicity of copper of crustaceans because there would not be any. Any contaminated sediment is to be used within the site itself. The levels of copper are not high enough to disassociate from the sediment particles in re-suspension. In any dilution or dispersion of sediment the particles, and their associated contaminant, will settle out of the water column (ref. to Ms. Pendles evidence).
- Mr. Velterop indicated that the baseline section of the EIS referred to the possibility of an SAC designation for Harbour Porpoise in Dublin Bay, but that the proposed development would not have any impact on this

species as they tend, in the main, to stay further offshore and you would not get them within the harbour walls.

- Ms. Harris referred to published sources from UCD and TCD in relation to the natural history of Dublin Bay and which provide significant baseline data for fish and marine mammal species. Mr. Velterop cited his references to sources in TCD and to other sources as referenced in the EIS.

9.16 Further Submission

9.16.1 Dr. David Tierney (NPWS)

This is in response to an earlier request from the Inspector for comments on the additional bird counts report submitted by the applicants at the oral hearing. It includes:

- The report refers to only two new surveys conducted when the low tide reached below 0.40 metres above LAT and only one of these at below 0.35 metres above LAT. The surveys were conducted on 21st September 2009 and 18th October 2009, the early stages of the over wintering period.
- It is further acknowledged that suitable low tides can occur during hours of darkness thereby potentially compromising the quality of the bird data recorded, in particular the recording of bird behaviour. One of the two aforementioned surveys was conducted in conditions of 0% daylight.
- It is noteworthy that one of the new surveys recorded five Little Egret, an Annex 1 species, using the site. This is a new species to the list of birds recorded at the site.
- There is agreement with the report findings that the set of surveys of 2009 give an underestimate of some species using the estuary as certain species peak at certain times of year and a lot of species that use the site would be peaking around January which was outside of the survey window.
- NPWS previous comments on this issue stand.

9.17 Cross-Questioning

9.17.1 Dr. Tierney (NPWS) to Applicants

- Ms. John (applicants) confirmed that some of the site is above LAT, contrary to an ascertainment put by the applicants in the earlier cross-questioning of NPWS that all of the site was below LAT and later clarified. It was calculated that about 53% of the site is below LAT. All of the site is below MLWS, the area that's traditionally used in calculations of what constitutes inter-tidal within the Tolka and South Dublin Bay (up to MHWS).

- Ms. John confirmed that 23.27 hectares of intertidal area, above LAT, would be affected by the proposed reclamation and dredging.
- In response to the proposition put by Dr. Tierney that, in addition to the 23.27 hectares there are areas of shallow subtidal that would also be used by some waders, Mr. Nairn (applicants) indicated that, while he would agree with the general contention, in his experience of this particular site all birds leave the site once it is covered with water, with the exception of a very small number of cormorant and black-headed gulls. All wading birds leave the area once it is covered with water. Mr. Nairn accepted that there is a possibility that some waders feed just at the moment when the area is inundated by tide, but that it is of extremely minor significance.
- Ms. John indicated that the number of surveys undertaken (this year) reflects the availability of the site. On average the site is only exposed four times a month and in December the average is once. It is exposed most in April/May, about six times per month. And when it is exposed it is only for a brief period of time. Mr. Nairn added that for 2009, on the basis of the tide tables for October to December, there was only a single tide which falls below 0.4 LAT. In November and December there were no such tides.
- Ms. John (applicants) confirmed that some of the site is exposed at 0.45 LAT. Dr. Tierney (NPWS) suggested that it would be interesting to analyse the frequency of these tides. Mr. Nairn (applicants) indicated that on 19th October 2009 tide height was 0.45 and in fully light conditions three cormorants and one grey heron were observed on the site. He could see no exposure at that time. All parties agreed that tide data does not take account of barometric effects which can generate some minor differences in actual water levels.
- Dr. Tierney referred to Mr. Nairn's references to disturbance to birds from recreational use in other parts of Dublin Bay, such as people and dogs walking on the intertidal area of South Dublin Bay and the use of the development site as an occasional refuge when this occurs. He suggested that this would make the area more valuable than suggested, albeit that it is only exposed at very infrequent times. Mr. Nairn responded that the majority of the Tolka Estuary is not used for recreational use of this type because it is soft mudflat. He suggested, however, that parts of the estuary are used for bait digging which is a form of disturbance that birds habituate to. He acknowledged that the development site is not, in his experience, used by bait diggers.
- Mr. Nairn/Ms. John confirmed that density of water birds has not been used as a measure of value of the area because it is an invalid assessment because the development site has been the focus of an intensive survey effort over a number of years that has not been applied to the rest of the system. There is not, therefore, equivalent information about the use of this site compared to the rest of the Tolka Estuary. Comparisons based on the existing information show falsely high density levels for the

development site simply because it has been counted more times when the site is most available for bird feeding. Until the whole of Dublin Bay is surveyed valid density comparisons cannot be made.

- Dr. Tierney (NPWS) disagreed and suggested that some sample sites could be chosen to get an idea of relative importance in terms of density.

9.17.2 Ms. O’Leary (Dublin Bay Watch) to Applicants

- Ms. O’Leary queried the site area for the proposed development and the area specified in the site notice. Mr. Durney (applicants) referred to the clarification on the matter put by Mr. Gardiner for the applicants earlier in the hearing. Ms. O’Leary indicated that the areas cited in the site notice, the application and the EIS (Table 4.4) are very different.

9.17.3 Mr. Spain (Bremore Ireland Port Limited) to Applicants

- Mr. McLoughlin (applicants) confirmed that the Dublin Gateway proposal is designed to take container ships up to 2,000 TEU fully laden, but not to accommodate larger ships than this.
- Mr. McLoughlin indicated that this is the type of ship that will be employed in the intra-European trade for the foreseeable future. The design, however, allows for the possibility of further deeper dredging accommodating larger ships if necessary in the future.
- Mr. McLoughlin confirmed the design for an 11 metre draught at the berth utilising the existing channel which is currently dredged to 7.8 metres.
- Mr. McLoughlin indicated the draught of ships of similar TEU vary significantly and that there is no such determination as the depth required for a 2,000 TEU ship fully laden. While there are ships of 2,000 TEU that the proposed facility will not be able to handle there are many around that size that it will be able to handle. It also depends on whether or not a ship is fully laden. There could be a 3,000 TEU ship partly laden that could be accommodated.
- Mr. McLoughlin rejected the proposition that the proposed 11 metres is inadequate to cater for most fully laden ships of 2,000 TEU.
- Mr. McLoughlin agreed that the channel depth is inadequate to cater for fully laden or even partially laden ships of 2,000 TEU at low tide, 7.8 metres. The port operates on a tidally restricted basis as do many ports.
- Mr. McLoughlin rejected the proposition that most fully laden ships of 2,000 TEU would not be able to access the port even at high tide.
- Mr. McLoughlin indicated that there is 8 metres over the Dublin Project Pipeline below current channel depth.

- Mr. Spain queried whether any desktop, mathematical or assimilation assessments have been undertaken for the Dublin Gateway Project in terms of ship manoeuvring, and channel congestion issues, particularly having regard to the tidal window issues. Mr. McLoughlin indicated that such assessment had been undertaken in the form of discussions with the Harbour Master. While no such information has been submitted to the Board, the applicants are satisfied on the basis of their operational experience that it can handle the shipping traffic as envisaged. The port is a very efficient operation and handles some 17,000 ship movements every year without any constriction or congestion. Even within this schedule the ro-ro ferries are assured of particular time slots.
- Mr. McLoughlin confirmed that the Harbour Master is satisfied that the proposed development can accommodate fully laden ships of 2,000 TEU.
- Mr. Spain queried if the environmental impacts of future dredging of the berths to 15 metres, as allowed for in the design of the quay structures, have been taken into account in the EIS in the context that while such further dredging would require a foreshore licence, it would not require planning permission. Mr. McLoughlin indicated that the current application does not provide for this deeper dredging, but that the design has simply been future-proofed. Any future deeper dredging, and any environmental impacts arising, would be dealt with through a foreshore licence application.
- Mr. McLoughlin rejected the proposition that the current proposal does not meet the requirements of Dublin Port. The proposal to deal with ships of 2,000 TEU will meet needs for the foreseeable future. The applicants are also being prudent in allowing for possible change further into the future.
- Mr. Burke (applicants) confirmed that one of the conclusions to the Indecon Report refers to the need to develop additional port capacity in Ireland by 2025 to 2030 and that will require the expansion of Dublin Port or the development of Bremore Port or some other equivalent. He also emphasised that the capacity constraint referred to was a national one and that Dublin Port would run out of capacity well in advance of that time.
- Mr. Burke indicated that by reference to figures/tables in the Indecon Report that the assessment is at an all-island level. Dublin Port has to address its own customer base.
- Mr. Burke referred to the title of the Indecon Report and its explicit reference to Dublin Port. On this basis it is reasonable to assume that the focus of the exercise was on Dublin Port and its requirements. Therefore, it is legitimate to read the figures/tables as suggested.

9.17.4 Mr. Byrne (Mr. Sweetman) to Applicants

- Mr. Nairn (applicants) confirmed that all five tern species that occur in Ireland are listed for protection under Annex I of the Birds Directive. The gull species are not listed.
- Mr. Hall (applicants) indicated that the hydrodynamic model developed by 21 IHDI is a good model for assessing hydrodynamic flow regimes and does not require a regular channel.
- Mr. Dunsire (applicants) indicated that the most likely option, of several different options, for fixing the contaminated sediment within the reclamation area would be by adding cement to solidify the material.
- Mr. Dunsire (applicants) indicated that the amount of cement to be used is a detailed design issue. The cement would be brought by ship.
- Mr. Dunsire (applicants) indicated the maximum volume to be dredged in any one day will be 43,000 cubic metres.
- Ms. Pendle (applicants) indicated that the dredging rate, down to metres per second, has not been calculated, as this would depend on the ship that would be used, but she would accept that it would be between 0.5 metres and 1.0 cubic metre per second.
- Mr. Byrne suggested that on the basis of that rate of dredging, over a 12 hour period, being the proposed ebb tide dredging, and allowing for 10 times the volume of water as solid material taken up in the dredging process as set out in the EIS, the resultant volume of material of 475,200 cubic metres would exceed the volume of the bund within the reclamation area, estimated at approximately 400,000 cubic metres.
- Ms. Pendle indicated that the volume of water will be allowed to drain back to the estuary through a system of weirs.
- Mr. Byrne queried what period of settling would be required before water is allowed to discharge back to the estuary. Mr. Dunsire responded that the question is hypothetical in that it depends on the type of dredging kit used by the contractor; international dredging companies have looked at the proposals and are satisfied that the dredging operations are viable.
- Mr. Byrne indicated that his contention was that the area within the proposed reclamation area available to build the bunds is not big enough to hold the amount of liquid proposed and to allow sufficient time for it to settle so as to ensure that relatively clean water goes back into the bay. His concern is that dirty/contaminated water would be released back into the bay over a 24-hour period on the flood and ebb tides.

- Mr. Dunsire (applicants) indicated that this is not correct and that it would be unacceptable to allow contaminated material back into the bay. If there is a restriction on the size of the lagoons within the reclamation area then it would increase the time required for settlement. All of these are matters of detailed design and operations.
- Mr. Byrne indicated that on the basis of a settlement rate of 1.7 metres in 12 hours, the figure for the lightest fraction of material given in the SMS, dredging will only be carried out every three days, so that the dredging period will stretch to possibly 21 months.
- Mr. Dunsire indicated that there are different ways of treating the sediment brought ashore and that this would be a matter for the dredging contractor as in all major reclamation contracts.
- Ms. Pendle indicated that not all the dredge material is contaminated and that only a limit amount of contaminated material is potentially to be put through a lagoon system. Therefore, you are not looking at extending the dredging period to 21 months. You may be looking at extending the contaminated dredging over a longer period than might otherwise be the case. Mr. Dunsire suggested that perhaps only half of the dredge material would have to be treated in that way.
- Mr. Byrne queried the containers need to transport sediment samples for analysis to the Welsh Environment Agency Laboratories. Mr. McLoughlin (applicants) indicated that all the requirements of the Welsh Laboratory and the Marine Institute were complied with.

9.17.5 Mr. Gardiner (Applicants) to Councillor Dermot Lacey

- Councillor Lacey indicated that he understood that Dublin Port is querying aspects of the report sent by the Dublin Bay Taskforce to the Minister last July.

9.17.6 Mr. Byrne (Mr. Sweetman) to Applicants (continued)

- Ms. Pendle (applicants) indicated that the 18 further sediment samples taken were all surface samples as this was all that could be done within the time available. Mr. Byrne submitted that this was project splitting as the applicants have only tested the top of the sediment and they know it is contaminated but have not gone any further. They are assuming that they are going to do that either as part of the foreshore licence or as some process outside the purview of the Board. The Board cannot make a decision on the application without knowing the level of contamination.
- Ms. Pendle indicated that depth samples were included in the first round of sampling. The real concern to much of marine toxicity is in the surface. It was expected that the surface areas would have more contamination.

- Ms. Pendle stated that the sampling done so far was considered to be suitable for the EIS and this was agreed with the Marine Institute.
- Ms. Uí Bhroin (Mr. Sweetman) referred to NPWS Circular 01/07, PD2/07 re compliance conditions in EIA.
- Ms. Pendle indicated that the mitigation measures proposed are on the basis of the worst case scenario whereby the entirety of the sediment is contaminated.
- Mr. Hall (applicants) indicated that the use of a backhoe dredger was not modelled for sediment dispersal because it would only be used if the material is of a larger particle size or the cutter suction was not working and the fines coming from that dense material are likely to be limited.
- Mr. Dunsire indicated that the worst case dispersal would be in the upper zones where a cutter suction technique would be used.
- Mr. Byrne queried where in the EIS does it show the mitigation that will be put in place for a backhoe dredger. Mr. Hall indicated that while the mitigation measures stated in the EIS specifically relates to cutter suction dredging the same would apply if a backhoe dredger had to be used in the eastern area that is to be dredged on the ebb tide.
- Mr. Dunsire indicated that a closed bucket backhoe dredge could be used to minimise the escape of sediment and the dispersion rate would be a lot less than the maximum used in the model.
- Mr. Byrne referred to the sampling record for the hydrographic survey and the problems reported. Mr. Hall indicated that sufficient data was collated to calibrate and validate the model.
- Mr. Nairn (applicants) confirmed that gulls are Annex II species (Birds Directive) – Annex II refers to species that may be hunted under national legislation.
- Mr. Byrne stated that the Mediterranean Gull is an Annex I species and has been counted on the site. Mr. Nairn indicated that this species has not been recorded on the site.
- Mr. Byrne contended that all of the gulls spotted on the site and all of the terns are protected species and they feed over open water.
- Mr. Nairn confirmed that terns feed in the water and gulls can feed on both water and land.
- Mr. Byrne queried the areas surveyed for the various bird counts – there appears to be differences, one for the previous EIS. Ms. John (applicants)

indicated that all of the surveys were done over all of the area of intertidal that was exposed within the vicinity. The earlier surveys, 2001, 1002 for example, were carried out when Dublin Port Company had a different project with a smaller footprint. The later surveys, for the larger development were undertaken over the same area of exposed intertidal.

- Mr. Byrne referred to the tidal adjustment factor employed by Mr. Coveney (applicants) and queried if this technique was used elsewhere. Ms. John agreed that it is unique. She indicated that the applicants have subsequently not relied on it as Mr. Coveney was not available to explain its use.
- Ms. John (DPC) indicated that the reference to one-off use by the Bar-tailed Godwit in Appendix 13 of the EIS is incorrect but that the applicants stand by the conclusion that the three incidents of their occurrence is not significant.
- Ms. John referred to her witness statement in relation to potential impact of lighting on biodiversity and that it is addressed at section 8.3.49 of the EIS.
- Mr. Nairn (applicants) indicated that there is no evidence whatsoever that artificial lighting causes any negative effects on estuarine water birds. It may actually be beneficial in enabling some water birds to feed for longer. In any case birds that use Dublin Bay are habituated to artificial lighting.
- Ms. Uí Bhroin queried Ms. John on whether or not she fundamentally disagreed with the ECJ ruling that the first area in question, which basically incorporates the subject area, is an integral part of the wetland ecosystem. Ms. John stated that undeniably the subject site is part of the wetland system, but the Habitats Directive does not say you can do nothing within a designated site – what it says is that activities you undertake should not adversely affect that site. She also referred to the NPWS Conservation Objectives for Annex I Habitats for SACs which refer to maintaining the range of mudflats and sand flats as stable within Ireland and preventing the equivalent of a 1% loss per annum and no more than 10% loss in total. This confirms that you can have change and you can have loss within a designated site.

9.17.7 Mr. Cawley (An Bord Pleanála) to Applicants

- Mr. Cawley queried the methodology of the bathymetric survey; vessel or diver survey; what resolution; how many lines and what spacing.
- Mr. Hall (applicants) referred to the hydrographic survey locations shown on Fig. 10.2, EIS but stated that he did not have a full bathymetric plot.
- Mr. Hall confirmed that the modelling of the rivers (Tolka and Dodder) stopped at the estuary, at the new bridge on the Tolka. While it is tidal above this bridge the bridge is the major constriction on the Tolka.

- Mr. Hall confirmed that the numerical mesh without the development is slightly different to that with the development.
- Mr. Hall confirmed that a constant Mannings in was used to keep the calibration exercise as simple as possible to get a good fit between actual tide data and what the model was predicting.
- Mr. Hall confirmed that there were no calibration points in the Tolka Estuary. There were confined to the main channel.
- Mr. Cawley referred to the sediment transport modelling being developed to look at the proposed dredging and the plume and not at the sediment transport system in the estuary itself. Mr. Hall confirmed that it only looked at the former and any change in bed shear stress.
- Mr. Cawley queried the apparent increase in velocities to the north of the development by reference to Fig. 3.18 of the Sediment Modelling Report, Fig. 7.7 of the FRA and page 20 of Mr. Hall's evidence. Mr. Hall referred to the different stages of dredge design process leading to smoother gradients to reduce bed shear stress.
- Mr. Hall indicated that it is expected that the future maintenance dredging regime will be the same as the current operation, which is every 18 months to two years.

9.17.8 Mr. Durney (applicant) referred to the site areas issue raised earlier by Dublin Bay Watch. He referred to Table 4.4 of the EIS. The reclaimed area of 21 hectares plus the dredged area of 28.5 hectares gives a total area of 49.5 hectares.

9.18 Closing Statements

9.18.1 Ms. Uí Bhrion (for Mr. Sweetman)

This includes references to:

- NPWS Circulation Letter 1/07, Compliance Conditions.
- Obligations under the Birds and Habitats Directives.
- The Waddenzee Judgement.
- Inadequacy of flora and seal surveys.
- Inadequate assessment of light impacts.
- Inadequacy of the proposed bund.

- Completion of assessments of contaminated material post planning permission not acceptable or legally permissible.
- Inadequate assessment of cumulative impacts.
- ECJ Ruling 418/04.
- Site ownership not proven.
- Illegal site notice.

9.18.2 Elizabeth Nolan (Mr. Nolan), 1 Chelsea Gardens, Clontarf

This includes reference to:

- Flooding.
- Lighting.
- Dredging and area discrepancies.

9.18.3 Richard and Deirdre Tobin, 35 Castle Avenue, Clontarf

This includes references to:

- Area/measurement discrepancies.

9.18.4 Mary Bailey (Peter Bailey), 64 Hollybrook Road, Clontarf

This includes references to:

- Visual impact and amenity value.
- Contamination during dredging.

9.18.5 Martin Clynes (Councillor Breen) 50 Kincora Grove, Clontarf

This includes references to:

- Disturbance to birds.
- Contaminated sediments, dredge dispersion.
- Noise and vibration.
- Inadequacy of bird count data.
-

9.18.6 Sean Dublin Bay Loftus, ‘Nephin’, 5 Seafield Avenue, Clontarf

This includes references to:

- Flooding.
- History of port proposals.
- Prematurity.

9.18.7 Bremore Ireland Port Limited (Mr. Spain)

This includes reference to:

- Inadequate assessment of alternatives.
- Material contravention of Dublin City Development Plan.
- Prematurity.
- Indecon indicates more than sufficient capacity in the state to 2025 at least.
- Proposal is not fit for purpose.
- Lack of assessment of further future dredging of berths and channel, serious shortcomings in EIS.
- Inconsistencies re ship size, berth depth and channel depth.
- Bremore Port as alternative.

9.18.8 Councillor Gerry Breen

This includes reference to:

- Flooding.
- Competition.
- Inefficiency in exiting operations, use of port estate lands.

9.18.9 Clontarf Residents Association

This includes references to:

- Proposal contrary to all environmental and climate change advice and contrary to EU Law.

- Operations managed through Celtic Tiger years without additional lands.
- Efficiency.

9.18.10 Concerned Blackheath Residents Group

This includes references to:

- Flooding.
- Visual impact.
- Air pollution.
- Noise.

9.18.11 Dublin Bay Watch

This includes references to:

- Environmental, planning, capacity, competition, vista and amenity issues.
- Application of the strict regulatory regime of the Birds Directive.
- Lack of support in the Dublin City Development Plan, the NSS or the RPG GDA.
- Material contravention of Dublin City Development Plan.
- Prematurity.
- Indecon Report indicates no immediate capacity issue.
- Inefficiency/productivity.
- Modern polycentric approach as best way forward.
- Obvious alternatives.
- Competition.
- Vista and recreation.
- Noise.
- Flooding.
- Loss of approximately 20% of the extreme low shore intertidal habitat within the Tolka Estuary.

9.18.12 Dublin Transportation Office/National Transport Authority (DTO/NTA)

This includes references to:

- Clarity required in relation to impact of HGV movements in the context of other transport objectives for the area.
- Need for greater focus on rail freight.
- A travel plan to be required by condition.

9.18.13 Dublin City Council

This includes references to:

- Policies E24 and CUF6 of the Dublin City Development Plan.
- Section 15.20.0 of the Development Plan.
- The City Council's support for the continued development of the port, as in Policy E24, being subject to qualifications.
- While Dublin City Council continues to favour the relocation of Dublin Port, it is acknowledged that this may be a long term strategy.
- Dublin City Council will continue to support the development of Dublin Port within the context of existing policies as referred to above.
- Major concerns still remain in relation to:
 - Adequacy of EIS in relation to impact on the ecosystem.
 - Adequacy of AA in taking existing plans/policies of Dublin City Council into account.
 - The need for further investigation of the significance of the site, i.e. whether it is a potential Annex I habitat, prior to determination of the application.
- Dublin City Council recommends refusal of permission on the grounds set out to the hearing in September.

9.18.14 Applicants

This includes reference to:

- The development would not materially contravene the Dublin City Development Plan – reference policies CUF6 and E24.

- The development is in accordance with the NSS and with national ports policy – reference Indecon Report.
- The application is not premature as Dublin Bay has been subject to endless studies.
- While 2018 may not be critical in capacity terms the only issue is when the port will eventually run out of capacity. The provision of additional capacity is a lengthy process.
- Bremore Port is at least as unlikely to proceed as it is likely to proceed.
- No evidence has been presented to indicate that Belfast Port is more efficient.
- There is no contrary evidence before the Board, to that presented by the applicants, on the issue of title.
- The discrepancy between the area to be dredged as stated in the site notice and the red line area on the site location map. The EIS addressed the larger, correct area.
- Flooding risk to the Clontarf area would not be increased and it should marginally improve.
- The questions raised by Mr. Cawley, in the event of doubt, should form the basis of a request for further information.
- The development will not have a negative visual impact.
- Noise, dust and air quality impacts will not be significant.
- The DTO/NTA issues could have been raised in questions to the applicants. It is important that a travel plan be agreed in the context of an operating port.
- The port is the preferable location for serving the Dublin market/M50 Corridor and the carbon emission benefits are clear.
- The sediment sampling is adequate for the purpose of the EIS according to the Marine Institute.
- There will be no impact on the nearest seal haul out site.
- The drainage and water issues raised can be dealt with by conditions. Dublin City Council's views on potable water are based on a misunderstanding of the designed system (reference submission by Mr. Dunsire to the hearing).

- It has been established that the proposed development will not disrupt those factors that maintain the favourable condition of the pSPA, or interfere, in any significant way, with the species referred to as Qualifying Interests or Special Conservation Interests for the pSPA. Accordingly, it will not cause any significant impacts on the structure or function of the pSPA and thus, will not adversely affect the integrity of that site.
- The appropriate test is that under the Habitats Directive – ref. Sweetman v. An Bord Pleanála (Birmingham J.).
- Applying either the Habitats Directive or Birds Directive tests the Board should come to the same result.
- It is suggested that the Board should proceed, first, to consider whether or not it is satisfied beyond reasonable scientific doubt that the proposed development will not affect the integrity of the site and, if it is so satisfied, secondly, it should consider whether it is precluded by the supposed different test under the Birds Directive from granting permission. It is inevitable that the Board will conclude that it is not precluded.

10.0 ASSESSMENT

This issues raised in this application are numerous and range from those of a strategic nature to matters of more site specific and local interest.

I am satisfied that all of the main issues that need to be considered by the Board in assessing the proposed development have been raised in the various written and oral submissions received and that no other substantive issues arise.

It should be noted that the approach in the assessment is to focus on the principal substantive issues that are considered critical to deciding whether or not planning permission should be granted for the proposed development.

The issues are addressed under the following headings: -

- Preliminary legal and other matters
- Ports Policy and Planning Framework
- Alternatives
- Environmental Impacts and Other Issues
- Flooding, Hydrodynamics and Climate Change
- Appropriate Assessment.

10.1 Preliminary Legal and Other Matters

10.1.1 Birds Directive v. Habitats Directive

This refers to the issue of whether, in assessing the impact of the proposed development on the South Dublin Bay and Tolka Estuary pSPA, the assessment is subject to the provisions of Article 4(4) of the Birds Directive, prior to amendment, or to Article 6 of the Habitats Directive (and which is an amendment to the said Article 4 of the Birds Directive).

The issue is raised in several of the written submissions to the Board but is particularly referred to in the legal submission to the oral hearing by Mr. O'Laoire, BL, on behalf of Dublin Bay Watch and Clontarf Residents Association (see Section 9.2.11 above). In fact Mr. O'Laoire had sought to make a preliminary submission on the matter at the opening of the hearing on the grounds that the Birds Directive regime implies a more restricted test and that its application would preclude the consideration of any evidence of an economic nature.

The proposition as put on behalf of Dublin Bay Watch/Clontarf Residents Association is opposed by the NPWS (see Sections 9.3.3 and 9.3.6 above) and

on behalf of the applicants, by Mr. Gardiner, S.C., (see Section 9.2.1.21 and 9.18.14 above).

The basis of the argument advanced by Mr. O’Laoire, on behalf of Dublin Bay Watch/Clontarf Residents Association is that as the site in question is a proposed SPA and has not yet been formally classified as an SPA it is subject to Article 4(4) of the Birds Directive prior to the amendment applied by Article 7 of the Habitats Directive and which provides for the application of Article 6(2), (3) and (4) in place of the obligations arising under the first sentence of Article 4(4) of the Birds Directive.

The current legal position in relation to the South Dublin Bay and Tolka Estuary pSPA is that while the Notice of Intention to Designate was published on 28 May 2008, with a deadline for objections of 26 August 2008, the statutory instrument required to finalise the designation process has not yet been signed into law (see Section 9.3.5 above). The site, therefore, remains a proposed SPA.

Mr. O’Laoire grounds authority for his argument on ECJ Case C374/98 – The Basses Corbieres case (case decided 7 December 2000).

In this case the Commission sought a declaration that France, in failing to classify the Basses Corbieres site as an SPA and in failing to take appropriate steps to protect the site as a result of the opening of a limestone quarry, contrary to Article 6(2) to (4) of the Habitats Directive, had failed to fulfil its obligation under the EC Treaty.

As referenced by Mr. O’Laoire the judgement expressly addressed the issue of the applicability of Article 6(2) to (4) of the Habitats Directive to areas that have not been classified as SPA’s but should have been so classified. It concluded that such areas continue to fall under the regime governed by Article 4(4) of the Birds Directive prior to amendment. The Commission had argued to the contrary on this point, contending that this would give rise to a duality in protection regimes that would be hard to justify in that the regime under the Birds Directive would place areas of ornithological interest that have not been the subject of a national classification measure such as an SPA under a stricter protection scheme than that applicable to areas that have actually been classified as SPA’s by Member States. In countering this argument the Court found that this duality of regimes is not without justification. In this regard the Court cited the opinion of the Advocate General that a Member state cannot derive an advantage from its failure to comply with its Community obligations. It stated that, in this respect, “if it were lawful for a Member State, which, in breach of the Birds Directive, has failed to classify as an SPA a site which should have been so classified, to rely on Article 6(3) and (4) of the Habitats Directive, that State might enjoy such an advantage”.

The Courts argument appears to be premised on a concern that the absence of formal measures at Community level for classifying SPA’s makes it particularly difficult for the Commission to monitor the application by Member States of the procedure laid down in Article 6(3) and (4) of the

Habitats Directive and that, therefore, there is an increased risk of serious or irreparable ecological damage being caused to the site. The judgement further refers to the opinion of the Advocate General that “the duality of regimes applicable, respectively, to areas classified as SPA’s and those which should have been so classified gives Member States an incentive to carry out classifications, insofar as they thereby require the possibility of using a procedure which allows them, for imperative reasons of overriding public interest, including those of a social or economic nature, and subject to certain conditions, to adopt a plan or project adversely affecting an SPA”.

The NPWS position in relation to the matter is stated to be grounded on the “Dragaggi Principle”, arising from ECJ Case C-117/03 (see Sections 9.3.3 and 9.3.7 above). This case related to the applicability of Articles 4(5) and 6(2) to (4) of the Habitats Directive in the context of SAC designation. The case arose from the cancellation of a contract for dredging works and sediment on reclaimed land that was classified as a site of Community Importance. The contractor argued that as the procedure for classifying the site as one of Community Importance had not yet been completed, wherein while the Italian authorities had proposed the site in a list to the Commission the latter had not yet adopted the list as required under Article 4(2) (third paragraph) of the Directive, the obligation to carry out a prior assessment of the project that had significant implications for the site, as required under Article 6(3), was not yet applicable. The Court found that, on a proper construction of Article 4(5) of the Directive the protective measures prescribed in Article 6(2), (3) and (4) are required only as regards sites which are on the list of sites selected as sites of Community Importance adopted by the Commission.

It should be noted that the NPWS did not elaborate on their position beyond that as summarised at Sections 9.3.3 and 9.3.7 above and that they were not invited to do so. In the absence of any such elaboration I assume that the net point of their argument is that notwithstanding the provisions of Article 4(4) of the Habitats Directive that gives member states up to 6 years to actually designate SAC’s, the point in the process of the adoption of such sites as sites of Community Importance corresponds to the Notice of Intention to Designate as issued in respect of SPA’s. The logic, therefore, is that Article 6(2), (3) and (4) applies to pSPA’s in respect of which such Notices of Intention to Designate have issued, as is the case in relation to the South Dublin Bay and Tolka Estuary pSPA.

This is a difficult and complex legal issue that, depending on which view is taken, has a significant bearing on the assessment of the proposed development. The ECJ judgement in Case C-374/98 confirms that the application of Article 4(4) of the Birds Directive, prior to amendment, would constitute a more onerous test than would be the case if Article 6(2), (3) and (4) of the Habitats Directive, and which essentially allow for derogations from the earlier regime, is taken to apply and the NPWS refer to the former as amounting to “a development freeze” in relation to the pSPA.

I would make the following comments on the matter:

- In relation to ECJ Case C-374/98, while the French Government apparently intended to commence procedures for the classification of the Basses Corbieres site as an SPA no such procedure had commenced at the time of the court case. This is in contrast to the subject case where the formal process for designating the South Dublin Bay and Tolka Estuary SPA had already commenced, through the publication of the Notice of Intention to Designate, prior to the lodgement of the planning application.
- I find the argument in the judgement in relation to the possibility that a Member State might gain some advantage, if it was conceded that Article 6(2) to (4) of the Habitats Directive applied, to be difficult to follow. It is not clear to me what the nature of the advantage would be. If there is a matter of concern in relation to monitoring the use of that procedure by Member States then I would have thought that this is an issue to be addressed in its own right. Furthermore, I find it difficult to reconcile, within the argument being advanced, the final reference in the judgement to the opinion of the Advocate General which refers to the duality of regimes acting as an incentive to Member States to classify sites so as to be able to avail of the derogatory mechanism of imperative reasons of overriding public interest (IROPI) that is provided for in Article 6(4) of the Habitats Directive. Within the terms of the argument being advanced, therefore, the advantage, appears to lie in classifying areas rather than any supposed advantage from not doing so. In this connection I find it difficult to comprehend a situation, as apparently did the Commission, whereby a site that is not classified should be afforded even greater protection than a site that has been classified.
- The judgement places critical reliance on the precise wording of Article 7 of the Habitats Directive and states that “the text of Article 7 of the Habitats Directive states that Article 6(2) to (4) of that Directive replace the first sentence of Article 4(4) of the Birds Directive as from the date of implementation of the Habitats Directive or the date of classification by a Member State under the Bird’s Directive, where the latter date is later”. It concludes that this passage “appears to support the interpretation to the effect that the application of Article 6(2) to (4) presupposes the classification of the area concerned as an SPA. However, in referring to the implementation date Article 7 of the Habitats Directive actually states as follows:

“...as from the date of implementation of this Directive or the date of classification or **recognition** by a Member State under Directive 79/409/EEC (The Birds Directive), where the latter date is later”. (My emphasis).

I note, in particular, the use of the word “recognition”, in addition to the word “classification” and which was not referred to or commented upon in the judgement. I would suggest that this could be interpreted as referring to an earlier stage in the classification process, such as the point at which the ornithological value of a site is recognised and, on this basis, the Notice of Intention to Designate is published.

- It is noted in the subject case that, notwithstanding that the classification of the South Dublin Bay and Tolka Estuary as an SPA is not yet completed, the application has been prepared as if the site was so classified.
- It is also noted that Mr. Gardiner, for the applicants, has expressly stated that the applicants place no reliance whatever on the provisions of Article 6(4) of the Habitats Directive (IROPI) and that he advised that the Board, in assessing the proposal, should not do so either.
- It is difficult to see, therefore, that there is any context or opportunity for an advantage, of the type referred to above, in the subject case.

I conclude, therefore, that the Board should proceed on the basis that Article 6(2) to (4) of the Habitats Directive apply in this case. In this regard it should be noted that the argument as to whether or not economic considerations can be taken into account only becomes relevant if the Board was contemplating involving the IROPI procedure as provided for under Article 6(4) and, which, as stated earlier, the applicants are not seeking to rely on. This matter is referred to further at Section 10.6.7.11 below.

As indicated by Mr. Gardiner, for the applicants, it would still be open to the Board, having carried out the appropriate assessment as required under Article 6(3), and noting that the IROPI procedure as provided for under Article 6(4) is not contemplated by the applicants, to then apply the test under Article 4(4) of the Birds Directive, prior to amendment.

Finally, I also wish to comment on some of the other case law referenced by Mr. O'Laoire, for Dublin Bay Watch/Clontarf Residents Association.

The judgement in Case C-57/89, the *Leybucht Dykes* case, referred to very limited and exceptional grounds upon which Member States could permit the reduction of an SPA and these are as outlined in Mr. O'Laoire's submission. However, it must be noted that this case preceded the Habitats Directive and its consequent amendments to the Birds Directive.

The judgement in Case C-355/90, The *Santona Marsh* case, as submitted by Mr. O'Laoire, established the principle that areas not designated as SPA's, but which should have been, are afforded the same protections under the Directive as if they had been designated. This proposition is not contested by the parties to the subject application. This case also preceded the Habitats Directive and its consequent amendments to the Birds Directive.

The judgement in Case C-44/95, the *Lappel Bank* case, expressly addressed the amending Article 6(2) to (4) of the Habitats Directive and drew a distinction between the classification process for SPA's and the process allowed for under this article. In relation to the former the judgement echoed the ruling in Case C-57/89, whereby classification of sites as SPA's must in all circumstances be carried out in accordance with the criteria permitted under Article 4(1) and (2) of the Birds Directive and which exclude economic

requirements at that stage. In relation to the latter, however, the judgement makes it clear that economic requirements, as an imperative reason of overriding public importance (IROPI), can be taken into account at this later stage.

Case C-191/05 was concerned solely with the earlier stage process of classifying an SPA under Article 4(1) and (2) of the Birds Directive.

10.1.2 Adequacy of the EIS

10.1.2.1 General

I am satisfied that the EIS submitted with the application, and as summarised in Section 2.5 above, is in compliance with the requirements of Article 94, Planning and Development Regulations, 2001 and by extension with the requirements of the EIA Directive, as amended. I am further satisfied that the EIS, together with the other application documentation, the further information requested and received by the Board, and as summarised in Section 7.0 above, and the written and oral submissions received by the Board, provides a proper basis for the Board to carry out an environmental impact assessment (EIA) of the proposed development and as required under the Directive.

Some objection was raised at the oral hearing, in particular by Ms. O’Leary, on behalf of Dublin Bay Watch, and by Ms. Uí Bhroin/Mr. Byrne, on behalf of Mr. Sweetman, to the submission by the applicants of a report, prepared by Mr. Nairn, on further bird counts conducted between September and November 2009 since the earlier adjournment of the hearing (see Section 9.3.4 above), on the basis that this constituted new evidence and would require a further notice period to enable consideration by the public at large and in accordance with proper EIA procedures. I am satisfied that the limited nature and scope of the material presented did not warrant such an approach and that it fell within the normal parameters of additional information/elaboration that could be accepted during an oral hearing. It should be noted that I expressly afforded all parties in attendance at the hearing time to consider the information submitted and to comment further if they wished to do so.

10.1.2.2 CO₂ Emissions

This refers to the adequacy of data on CO₂ emissions included in the EIS. The issue is raised by An Taisce both in their written submission (see Section 5.6 above) and in their submission to the oral hearing (see Section 9.2.12 above). In fact Mr. Lumley, for An Taisce, had sought to make a preliminary submission on the matter at the opening of the hearing on the grounds that the information sought related to the overriding environmental impact, that is climate change, arising from the proposed development. The submission also referred to the issue of compliance by Dublin Port Company under Directive 2003/35/EC on access to information on the environment (The Aarhus Directive).

The key information required was stated to be data on the CO₂ equivalent emissions generated by increased shipping to/from Dublin Port and the carbon footprint of manufacture and production of goods in other countries that would arise as a result of the proposed development.

As suggested by Ms. John, for the applicants at the oral hearing (see Section 9.2.1.9 above) global trade issues are not matters to be addressed by the applicants in this case. Any impact arising from the proposed development on increased global CO₂ equivalent emissions, if such was to arise, would be infinitesimally small and be beyond measurement. The wider issues raised need to be dealt with at inter-governmental and policy level and cannot be addressed at the level of an individual project. The data, therefore, is not a requirement for a project level EIA.

In relation to the Aarhus Directive the Board has no role in adjudicating on obligations of bodies that may or may not arise under the terms of the Directive.

10.1.2.3 Alternatives

This refers to the adequacy of the approach to the consideration of alternatives as set out in the EIS. The issue is raised in the initial written submissions and in submissions at the oral hearing by both An Taisce and Bremore Ireland Port Limited (see Sections 5.6, 6.3.5, 9.2.12 and 9.2.17.1 above).

I am satisfied that the consideration of alternatives as set out in the EIS is adequate and complies with the requirements laid down in the EIS Directive, as amended. In this regard I would echo the reference by Mr. Gardiner, for the applicants (see Section 9.2.1.21 above) to the recent High Court decision in *Klohn v. An Bord Pleanála* (2008), I.E.H.C. 111, which considered this issue. The judgement referred to the terminology employed both in the Directive and similarly in national legislation (Planning and Development Regulations 2001, S.I. No. 600, 2001) and, in particular, to the use of the terms “an outline...” and “...main alternatives...”, and described the requirements as “low threshold”.

It should be noted that the request that alternatives be “fully considered”, as stated in the Board’s Notice to the applicants following the pre-application process goes beyond simply environmental considerations and was an attempt to ensure the application would facilitate as comprehensive a planning assessment as possible.

10.1.2.4 Further Sediment Sampling

This refers to the proposals for further sediment sampling as referred to in the Sediment Mitigation Strategy (SMS) (see Section 7.2.2.2 above). The necessity for further sampling arises from the findings both from the initial sampling carried out for the EIS (see Section 2.5.9 above) and repeat sampling carried out for the SMS which indicated elevated levels of heavy metal contamination. Most of the samples were surface samples with a small number

of shallow depth samples, to a maximum depth of 2.0 metres, so that further sampling to greater depths is required.

The issue focuses on whether or not the level of sampling carried out to date, and hence the information in relation to the level of contamination and the volume of contaminated material that would have to be removed during the capital dredge and its subsequent treatment, is sufficient for the purposes of EIA.

The issue was raised initially in written submissions by the NPWS and the Clontarf Residents Association (see Sections 8.2.1 and 8.5.1 above). It was further referred to by the NPWS and Dublin Bay Watch/Clontarf Residents Association in their submissions to the oral hearing (see Section 9.2.3 and 9.2.11 above) and it was also raised in cross-questioning at the hearing between Mr. Byrne, on behalf of Mr. Sweetman, and Ms. Pendle, for the applicants (see Sections 9.17.4 and 9.17.6 above).

The applicants response to the concerns raised is that the sampling carried out to date was agreed with the Marine Institute as being suitable and sufficient for the purposes of an EIS and that the further sampling proposed would be carried out for the Foreshore Licence and Dumping at Sea permit applications and which require a different sampling strategy to give more detailed information (see Section 9.2.1.14 above).

While Mr. Dunsire, for the applicants, indicated that the Marine Institute would be engaged in relation to finalising dredging and reclamation methods in accordance with their requirements (see Section 9.2.1.8 above) it appears that no agreement on the management of the sediment is as yet in place (see NPWS comments in Section 8.2.1 above).

This is a difficult issue particularly given the extreme environmental sensitivity of the area within which it is proposed to carry out the development and the imperative to carry out an adequate prior assessment under the EIA Directive and the additional requirement for appropriate assessment under the Habitats Directive. In this regard the NPWS has expressly drawn the Board's attention to DoEHLG Circular Letter PD 2/07 and NPWS 1/07 concerning the restriction on use of compliance conditions. The issue is dealt with in detail in Section 10.6.7.6. below.

10.1.2.5 Possible Future Dredging

This arises from the statements to the oral hearing by Mr. Connellan and Mr. McLoughlin, for the applicants, that while the proposed development provides for a Lo-Lo berth depth of 11 metres the berthing structure (the quay wall) has been designed so as to allow for future deepening of the berth to 15 metres alongside to facilitate larger vessels if the trade requires this in the future (see Sections 9.2.1.1 and 9.2.1.2 above). Any such further dredging would be subject to the relevant statutory consents.

Mr. Spain, for Bremore Ireland Port Limited, suggested that it was a serious shortcoming in the EIS that it did not consider the environmental impacts of such further dredging particularly given that while such works would require a Foreshore Licence they would not require planning permission. Mr. McLoughlin's response is that the current application does not provide for the deeper dredging and that the design has simply been future-proofed (see Sections 9.2.17.1 and 9.17.3 above).

I am satisfied that the scope of the current application is as stated, to include for the provision of Lo-Lo berths dredged to 11.0 metres depth, and that the EIS, properly addresses the environmental impacts arising. Building in a design flexibility to allow for possible future deepening, subject to market requirements, and which would also be subject to further appropriate statutory consents, is, in my view, a perfectly reasonable way to proceed. In this regard I am also satisfied that there is no issue of project-splitting involved as suggested on behalf of Mr. Sweetman (see Section 9.10.1 above).

10.1.3 Title Issue

This refers to the status of the applicants claim to legal title over the area within which the proposed development is located. The issue is raised by many of the parties to the application but in particular by Dublin Bay Watch and Clontarf Residents Association (see Sections 6.2.2 and 9.2.10 above). The issue is responded to on behalf of the applicants in the submission of Mr. Barr to the oral hearing (see Section 9.2.1.4 above).

The resolution of any dispute as to title is a matter for the Courts. The Board's role is limited to considering whether or not the applicants have demonstrated sufficient legal interest for the purposes of making a planning application. I am satisfied that the applicants have demonstrated such sufficient interest. As in all such cases the caveat provided for in Section 37H(6), Planning and Development Act 2000, as amended, and which stipulates that a person shall not be entitled solely by reason of a planning permission to carry out any development, also applies.

10.1.4 Public Notice

This refers to discrepancies in the stated site area for the proposed development as between the public notices, the application form and the EIS. The implication drawn is that the public notices may not have been legally adequate for the information of the public.

The issue was raised, in the first instance, in the written submission of Dublin Bay Watch (see Section 6.2.2 above). It was addressed by Mr. Gardiner, for the applicants, in his submission to the oral hearing (see Section 9.2.1.21 above) and it was raised further during cross-questioning (see Sections 9.17.2 and 9.17.8 above).

At Question 6 on the planning application form it is indicated that the areas to which the application relates are c.21 hectares of land and 22 hectares of

dredging and these areas are repeated in the public notice, which also states the volume of material to be dredged as 1,475,000m³ from the southern and eastern berths and the approaches from the main channel.

In the EIS, Sections 1.1.6 and 4.10.1, which describe the main components of the development, refer to the proposed reclamation area of 21 hectares only with no reference to the dredge area. The latter is described in Section 4.11.16 and Table 4.4 which indicates the total proposed dredge area as 285,000 square metres (28.5 hectares) and the volume of material involved as 1,475,000m³.

Mr. Gardiner, for the applicants, explains the discrepancy in dredge area between the application form/public notices and the EIS in that the former excluded the required dredge area between the proposed new berths and the main navigation channel. He emphasises, however, that the volume of material to be dredged is correctly stated in the public notices and that it is this volume, and the entire area of 28.5 hectares, that is the subject of assessment in the EIS.

I am satisfied that the omission in the public notices is that as stated by Mr. Gardiner in that it relates solely to a misrepresentation of the area to be dredged. The volume of material proposed to be dredged is correctly stated and the notice does properly describe the areas within the proposed development from which this material would be dredged, i.e. the southern and eastern berths and the approaches from the main channel.

As such, and having regard to the requirements for public notices as set out at Section 37E(3)(a), Planning and Development Act 2000 (as amended) and Article 19(1)(d), Planning and Development Regulations 2001 (as amended) and which refer to notices “indicating the nature and location of the proposed development” and providing “a brief description of the nature and extent of the development”, I am satisfied that the misrepresentation identified is of a minor nature and would not mislead the public as to the overall scope of the development proposed.

By reference to the map measurements referred to by Dublin Bay Watch in their initial written submission (see Section 6.2.2 above), while there may be some discrepancy between the scaled area from the Site Location Map (Drg. No. DPC/1, Scale 1:1000) and the other more detailed drawings, to larger scales, I am satisfied that the drawings submitted, and in particular these latter drawings, are sufficiently accurate for planning purposes. A site location map, by definition, is indicative in nature only.

10.1.5 Prematurity

The issue of Prematurity is raised by many of the parties to the application. It is submitted that to consider granting planning permission for the proposed development would be premature pending the completion of the following plans/studies:

- *Dublin Bay – An Integrated Economic, Cultural and Environmental Vision for Sustainable Development* (The Dublin Bay Study), Dublin City Council, September 2007.
- *Dublin Port National Development Plan Study* (The Indecon Report), Department of Transport, July 2009.
- The Report of the Dublin Bay Taskforce.

The first two of these have since been concluded and published and are considered at some length within this assessment. The work of the Dublin Bay Taskforce is still at a relatively early stage and this matter is considered further at section 10.2.3.3 below.

It should be noted that the stance of Dublin City Council in relation to this matter, in conjunction with the other strategic concerns raised by the planning authority, is further considered at section 10.2.3.4 below.

I do not, therefore, consider that the objections on grounds of Prematurity should be upheld.

10.2 Ports Policy and Planning Framework

This refers to issues relating to national ports policy and national, regional and local planning policy, and includes consideration of port capacity issues.

The majority of parties to the application refer to at least some of these issues.

In particular the issues are raised in detail in the submissions by Dublin Bay Watch (see Sections 6.2.2 and 9.2.9 above) and on behalf of Bremore Ireland Port Limited (see Sections 6.3.5 and 9.2.17 above). The issues were also raised in cross-questioning at the oral hearing (see Sections 9.3.1 and 9.17.3 above).

The submissions on behalf of Dublin City Council are also of particular note (see Sections 4.0 and 9.2.2 above). The issues are also referred to in the submission on behalf of the Port of Waterford Company (see Section 9.2.16 above).

The issues are particularly dealt with, for the applicants, in the Planning Report (see Section 2.3 above), the EIS (see Sections 2.5.1, 2.5.2 and 2.5.4 above) and in the submissions to the oral hearing by Mr. Connellan, Mr. McLoughlin, Mr. Burke, Mr. Power and Mr. Durney (see Sections 9.2.1.1 to 9.2.1.3 and 9.1.2.5 to 9.1.2.7 above).

10.2.1 Context

10.2.1.1 Importance of Port Infrastructure

The critical importance of port infrastructure to Ireland is fully recognised and is not disputed by any of the parties to this application.

This importance fundamentally derives from Ireland's status as an island nation with a small open economy that is driven by external trade. The ports carry 99% by volume of this trade. Their significance is reflected in the ports policy and planning policy documents referenced at Sections 3.1 and 3.2 above.

10.2.1.2 The Dominance of Dublin Port

Dublin Port is by far the largest sea port in the Republic of Ireland and on the island of Ireland. As indicated by Mr. Burke, for the applicants, in 2008 the port handled approximately 41% of national trade, including 65% of national Lo-Lo trade and 80% of national Ro-Ro trade (see Section 9.2.1.3 above). It is also significant that its dominance has been increasing in recent years. The corresponding percentage shares for the year 2000 were 35%, 58% and 77% (see Mr. Burke's full witness statement). It is clear, therefore, that during this period of rapid economic growth, "The Celtic Tiger" years, Dublin Port outperformed all other ports, most particularly in the Lo-Lo sector. It also easily outperformed the Port of Belfast.

The significance, therefore, of Dublin Port to the national economy cannot be overstated and this is again reflected in the ports policy and planning policy documents referenced at Sections 3.1 and 3.2 above. It is also reflected in the commissioning by the government of the Indecon Report and which was a specific commitment of the National Development Plan (NDP).

10.2.1.3 The Capacity Issue

Again, by reference to the ports policy and planning policy documents referred to at sections 3.1 and 3.2 above, it is clear that there is a recognised need to ensure that there is adequate capacity within the ports sector in Ireland to service the needs of the economy into the future. While the estimates of capacity shortfalls vary, both in quantitative terms and in terms of timing, there is a consistent message that additional capacity is required. The long lead-in time for the provision of significant port infrastructure is also emphasised. In this context, and despite the current economic downturn and the consequent reduction in port activity as reported by the Irish Maritime Development Office (IMDO), I am fully satisfied that now is an appropriate time to bring forward proposals, such as the subject application, for further port expansion.

The Indecon Report is the most recent and up to date review of port capacity issues. It was published in August 2009 during the currency of the subject application.

The report refers to the need to develop additional port capacity in Ireland (all-island basis) by 2025-2030 (see Section 3.1.5 above). However, it should be noted that the report also indicates that demand could exceed existing port capacity for Lo-Lo by 2020-2025 and for Ro-Ro by 2025 (see Point 3, page 137 of the Indecon Report).

In relation specifically to Dublin Port the report considered a number of different scenarios for future development. Under Scenario 3(b) the port would be retained but capacity would be capped at current (2009) levels. For this scenario the analysis, which included an examination of current operational activities at the port, indicates both Lo-Lo and Ro-Ro capacity being exhausted in or around 2017 to 2018, at which time any additional demand would have to be diverted to other ports.

This assessment generally corroborates the applicants predictions in relation to capacity constraints at Dublin Port, particularly in the later submissions to the oral hearing, by Mr. Burke and Mr. Gardiner, (see Sections 9.2.1.3 and 9.18.14 above) which, reflecting the impact of the recent economic downturn, suggest some easing of the predicted timeline for the exhaustion of existing capacity to 2017-2018, or even some time beyond this, compared to the earlier estimates of as early as 2015 as indicated in the EIS (see Section 2.5.2 above). It is noted, however, and as pointed out by Mr. Burke (see Section 9.2.1.3 above), that the Indecon Report assumed lower capacity estimates for existing port facilities than those applied by the applicants, so that there is a possibility that capacity constraints at the port could still occur at an earlier date.

The following should also be noted in relation to the forecasts contained in the Indecon Report:

- (a) Trade projections assume a constant market share as between the different ports, except where changes are implicit for some of the scenarios considered (see Page 30 of the Indecon Report).
- (b) It is stated that the above average growth rates in the Irish economy up to 2007 should not be assumed in planning future port capacity (see page 36 of the Indecon Report).
- (c) The adopted projections for future port traffic are based on declines in the Irish economy in 2009 and 2010 with a subsequent return to growth but at more moderate levels (see page 36 of the Indecon Report).
- (d) It is stated that if demand proves to be even lower than expected this will impact on the timing of additional capacity requirements rather than the need for such capacity (see page 37 of the Indecon Report).
- (e) Estimates of port capacity requirements are based on assuming that utilisation levels will be in line with international norms. In other words, improvements in the use of existing resources are assumed before new investment is required (see page 42 of the Indecon Report).

A further aspect of the capacity issue that is important to consider is referred to in the Ports Policy Statement 2005. This is that in order to ensure competitive conditions between ports, and which is a central tenet of ports policy, there will be an inevitable requirement for ongoing capacity surpluses in order to attract new business together with forward planning in order to ensure that projected deficiencies are dealt with in sufficient time (see Section 3.1.1

above). The situation, therefore, is clearly a dynamic one where ports must have scope for change and development within a competitive environment.

While, as stated above, it is accepted that there is a need for significant additional port capacity, and that this needs to be planned for well in advance, one important consequence of the recent economic slowdown is that there is now somewhat less urgency than as suggested by the applicants when the application was first lodged with the Board in August 2008. There is some more time, therefore, to ensure good decision making in this critically important area.

10.2.2 Ports Policy

As indicated the Ports Policy Statement 2005 is the primary policy document in relation to ports in Ireland (see Section 3.1.1 above).

Central to stated ports policy is the promotion of competition and the avoidance of monopolistic conditions and it is recognised that the provision of additional capacity will have significant implications in this regard.

It is the contention of many of the parties opposed to the proposed development that it would be contrary to this policy position and that it would further enhance the dominance of Dublin Port to the detriment of competition nationally.

Existing unitised freight throughput and operational capacities at Dublin Port are set out in the EIS and summarised at Section 2.5.2 above. The operational capacities of the proposed new Gateway facility are also indicated. It is evident from these figures that the proposed development would increase operational capacities at the port by over 31% for Lo-Lo and almost 40% for Ro-Ro. In terms of existing (2007) throughput the proposed facility could handle the equivalent of about 40% of existing Lo-Lo traffic and almost 60% of existing Ro-Ro traffic. The relative scale of the proposed development is confirmed in the submission of Mr. Connellan, for the applicants, in his assertion that the project would deliver a 50% increase in throughput capability for unitised trade at Dublin Port (see Section 9.2.1.1 above).

In the context of the existing scenario, as outlined at Section 9.2.1.3 above, whereby Dublin Port already handles approximately 41% of national (Republic of Ireland) trade, including 65% of national Lo-Lo trade and 80% of national Ro-Ro trade, it is difficult not to conclude that the proposed development would diminish effective competition with other ports and give rise to a monopoly situation. In fact the ports policy statement recognises that, even at present, Dublin Port does not experience significant competition from outside. It is difficult, therefore, to reconcile the proposal with current Government policy in terms of fostering competition between ports.

The ports policy statement does acknowledge that there is vibrant competitive conditions within Dublin Port and this is the principal counter argument advanced by the applicants in relation to this issue. Such competition arises

from the “landlord model” employed at Dublin Port whereby the Dublin Port Company does not provide stevedoring services directly but licences terminal operators who compete with each other (see Section 9.2.1.1 above). While it appears that Dublin Port may be the most advanced in relation to this model the ports policy statement refers to many of the key commercial ports evolving into landlord ports (see page 9 of the Ports Policy Statement).

While it is clear that the ports policy statement also envisages competition within ports as an important element of strategy this is subject to the obvious proviso that there is an arena large enough at any given port location to allow for such competition to emerge. Given the existing dominance of Dublin Port relative to the remainder there must be a strong possibility, in my view, that the scale of the proposed expansion there would make it much more difficult for other port locations to develop such an arena of adequate size. Again, therefore, the proposed development appears to be running counter to Government policy.

The NDP (see Section 3.1.3 above) puts in place the implementation framework for the Ports Policy Statement. While indicating that those projects being progressed by the ports sector at that time, being those examined in the Fisher Report and which included the subject proposal, would support the strategic objectives of the Ports Policy Statement 2005, the plan indicates that capital appraisals and Ministerial approvals for such projects as are advanced would be informed by the high level strategic goals of the NDP, which include, in addition to the maintenance of national competitiveness, the promotion of regional development.

One of the key conclusions of the Indecon Report is that nothing should be done at a policy level to block either the proposed expansion of Dublin Port or the proposed development at Bremore at this stage as there is a significant cost to Ireland if neither of these projects develop. This is in no sense meant to prejudge the outcome to either the subject application or the prospective application for the Bremore proposal as it is recognised in the report that this is a matter for the consent authority, namely An Bord Pleanála, who will have to weigh a wide range of policy, planning and environmental issues in the light of the full information that only becomes available through the formal planning application process. In this connection the recommendation for policy level support for both projects was made in recognition of the considerable uncertainty as to the eventual outcome to the consent process for either proposal.

The terms of reference for the Indecon Report require that, amongst other matters, it take account of the National Spatial Strategy (NSS), and this is referred to in Section 2.0 of the document. It is important to note, however, that the analysis in the report is essentially an economic one, focused primarily on port capacity competition and efficiency issues, and that considerations relevant to national spatial planning or regional planning policy are not brought to bear in the assessment of the various scenarios considered. The only reference in the report that could be construed as indicating such an assessment is the statement in the overall conclusion to the report, and which

underscores the key conclusion referred to above, to the effect that the development of a new port such as the proposed Bremore would have significant regional and national benefits (see Point 5, page 138 of the Indecon Report). If any conclusion can be drawn from this it is that it appears to favour the development of a new port over the proposed development at Dublin Port in national spatial or regional planning terms.

In relation to the central tenets of ports policy as outlined above, the following observations within the Indecon Report are of particular relevance in assessing the proposed development:

- In terms of competition it is stated that the development of a new port facility as a direct competitor to Dublin Port would undoubtedly increase inter port competition. This would have resultant benefits for all port service users especially importers and exporters (Section 7.7.1 of the Indecon Report).
- It is stated that the estimated benefits of competition would be related to improved efficiencies. The development of a new port facility would undoubtedly have additional efficiency benefits, especially in terms of Lo-Lo handling (Section 7.7.2 of the Indecon Report).
- Another benefit that would accrue from the development of a new port facility like Bremore is the ability to locate distribution activities close to the port site thus maximising port centric benefits (Section 7.7.3 of the Indecon Report).

These observations, again in my view, reinforce the conclusion that the proposed development would run counter to the thrust of Government port policy.

10.2.3 Planning Policy

This includes planning policy at national, regional and local levels and the relevant documents are summarised at Sections 3.2 and 3.3 above.

It is the contention of many of the parties opposed to the proposed development that it would be contrary to adopted policy at all three levels. At local, development plan level, the position of Dublin City Council is of particular importance.

10.2.3.1 National Spatial Strategy (NSS) 2002-2020

The key elements of the NSS are summarised at Section 3.2.1 above. The strategy, in overall terms, is based essentially on fostering the development of the Greater Dublin Area (GDA) as the primary engine of national growth while also achieving more balanced regional development.

While the vital importance of Dublin Port, both to Dublin and the national economy, is fully recognised the NSS also refers to capacity shortage issues at

the port giving rise to the need for more land to accommodate its expanding activities.

One possible solution suggested is, in the medium to longer term, the relocation of some port activities to alternative locations. The activities cited are transit/storage of petrochemicals, bulk goods and cars. The other suggestion is the encouragement of more port business to be handled by other nationally strategic ports. It is recognised that this may require substantial investment in facilities at alternative ports and supporting improved access so that transit times and costs are competitive with those available from Dublin.

The applicants responses to these suggested measures are set out in the Planning Report submitted with the application (see Section 2.3 above) and in the witness statement of Mr. Durney to the oral hearing (see Section 9.2.1.6 above).

While I am inclined to concur with the applicants that the first option referred to does not address the requirements in terms of unitised trade, and which is the focus of the subject application, the second option could clearly offer possibilities in this regard. In relation to the latter I would not agree with Mr. Durney's contention that this would be contrary to stated policy encouraging competition between ports (see Mr. Durney's full witness statement, page 8) for the reasons already outlined at Section 10.2.2 above.

It should be noted that the GDA, as referred to in the NSS, refers to not just Dublin but also to the adjoining counties of Meath, Kildare and Wicklow. This area includes the location for the proposed Bremore Port and Drogheda Port is also immediately adjacent to the north. There are, therefore, other potential locational options for the provision of port facilities to service this extensive area, other than just Dublin Port, and which could, if developed, equally ensure the continued vibrancy of the economy of the GDA. With the completion of Ireland's strategic motorway network options further afield may also become viable.

The development of such options would appear to be more in keeping with the future scenarios envisaged in the NSS than the continued substantial expansion of Dublin Port and would also better align with the strategic objective of achieving a more spatially balanced Ireland.

10.2.3.2 Regional Planning Guidelines – Greater Dublin Area (RPG/GDA) 2004-2016

The key elements of the RPG/GDA are summarised at Section 3.2.2 above. The Guidelines again recognise the significance of Dublin Port and refer to its need to be able to respond to trends in shipping, including increased ship size, and the rapid growth in unitised cargo as far as is reasonable and practical. They refer to the improved access provided by the Port Tunnel and the potential for further improvements from a southern port access route. The Guidelines also recommend the preparation of a plan, by Dublin Port and Iarnrod Eireann, on the future role of rail access.

In general, the proposed development can be considered to be consistent with the provisions of the guidelines. The guidelines reference to Drogheda Port as an alternative to Dublin Port as a provider of port facilities for unitised and bulk traffic is also noted.

The issue of the more efficient use of existing lands at Dublin Port, as referred to in the guidelines, is addressed under “Alternatives” below.

10.2.3.3 The Dublin Bay Taskforce

The terms of reference for the taskforce are set out at Section 3.2.3 above. The submissions of both Councillor Dermot Lacey and Councillor Bronwyn Maher, present and former chairpersons of the taskforce, are particularly relevant (see Section 9.2.8 and 9.6.10 above). Both submissions suggest that a decision on the application would be premature pending the completion of the work of the taskforce and this position is also put by many of the parties to the application. The issue of the taskforce was also raised in questions by Mr. Gardiner, for the applicants, to Councillor Lacey (see Section 9.17.5 above).

It is evident that the work of the taskforce is still at a relatively early stage – the Dublin Regional Authority’s (DRA) website does not refer to any further developments over and above that indicated in the submission of Councillor Maher. No deadline for the completion of its work appears to have been published.

In the circumstances I do not consider that the Board should decide that it is precluded from granting a permission for the proposed development at this time due to the work of the taskforce.

10.2.3.4 Dublin City Development Plan 2005-2011

The critical strategic provisions of this plan are Policy E24 and Objective CUF6, as set out at Section 3.3.1 above. The study entitled *Dublin Bay – An Integrated Economic, Cultural and Environmental Vision for Sustainable Development* (The Dublin Bay Study) is the first stage in the preparation of the plan referred to in Objective CUF6 and its principal findings are summarised at Section 3.3.2 above. The relevant provision included in the Draft Dublin City Development Plan 2011-2017, and which is currently on display for public consultation, is as set out at Section 3.3.3 above.

From a strategic perspective the objections of Dublin City Council to the proposed development as set out in the initial Planning Report to the Board are essentially based on the findings of the Dublin Bay Study that Option 7, full relocation of the port, was the preferred option (see Section 4.1 above).

The Indecon Report, which was published subsequent to the first Dublin City Council submission to the Board, included an assessment of the Dublin Bay Study’s finding in favour of complete relocation. While acknowledging the citywide sustainability benefits of such a relocation the Indecon Report indicated that these would not justify the additional costs involved (see

Section 3.2.2 above). Of the various scenarios considered for Dublin Port, which included a range of options from no change to partial or complete relocation, the report found that the complete relocation of the port would be the least beneficial. This was primarily because it would involve very significant capital costs, the benefits in terms of alternative land use were estimated to be much smaller than previously envisaged, reflecting, in particular, the recent severe downturn in the property market and because of disruption costs to existing tenants (see page 134 of the Indecon Report). The report also drew particular attention to the scale of redevelopment that would be involved if the entire port be moved and the long term time horizon required to realise its full development (see page 105 of the Indecon Report).

The submissions of Ms. Claire Caffery, for Dublin City Council, to the oral hearing are summarised at Sections 9.2.2 and 9.18.13 above. These refer to the Indecon Report and indicate that, notwithstanding the changed economic climate, the preferred option is still port relocation. As before it is acknowledged that this is a long term strategy. Ms. Caffery also indicates that Dublin City Council will continue to support the development of Dublin Port within the context of existing policies.

The position is further referred to in the Draft City Development Plan, which while making provision in terms of urban structure and transport for the ultimate relocation of the port, also recognises that significant elements of the port are likely to remain for the foreseeable future. It also indicates that proposals for the port area will be assessed both in the context of facilitating port development or relocation depending on the outcome of the Dublin Bay Taskforce.

It is clear that Dublin City Council's strategic policy in relation to the port is evolving and remains somewhat uncertain. While the overall direction of policy is currently being steered towards relocation of the port it appears that the final determination on this matter will have to await the formal adoption of the new City Development Plan and, ultimately, perhaps the recommendations of the Dublin Bay Taskforce.

In this context the issue of whether or not the proposed development contravenes, or materially contravenes, the current City Development Plan, and as contended by Dublin City Council and several of the other parties that are opposed to the application, is not, in my view, of primary importance. In this connection, it is noted that the draft plan does not contain any equivalent to Objective CUF6, with its reference to prematurity. In any case, while the Board must have regard to the provisions of the development plan it is not bound by them in the same way as the Planning Authority.

In relation to the Dublin Bay Study it should be noted that while the bulk of the study tends to focus on potential benefits to the city, in terms of sustainable development, quality of life, economy and the environmental quality of the bay area, and this is also very much the focus of its conclusions, the study does also recognise the vital importance of Dublin Port both to the regional and national economy and the need to ensure its continued

operational viability. To this end the appraisal of the various options considered included criteria relevant to future port operations. Against virtually all of these criteria the preferred option, full relocation, scored highest, generally on the basis that a new port, purpose designed, would offer the greatest potential for port efficiency, flexibility, future expansion etc, (see Dublin Bay Study full report pages 22-25). These findings are consistent with the observations in the Indecon Report, relating to competition and efficiency issues, as referred to in Section 10.2.2 above.

10.2.3.5 Dublin Docklands Area Master Plan 2008 and the Draft Poolbeg Planning Scheme 2008

As indicated in section 3.3.4 above the general thrust of policies outlined in the Master Plan in relation to the port is supportive of its presence and its future development having regard, in particular, to its importance nationally and to the city in terms of trade and employment.

However, it is noted that Mr. Durney, for the applicants, indicates that Dublin Port Company is objecting to proposed rezonings of lands on the Poolbeg Peninsula to residential use that are close to deepwater as it would have the potential to diminish the capacity of the port operations. It is suggested that if such rezonings are confirmed then the proposed Dublin Gateway Project becomes even more critical to maintain capacity (see Mr. Durney's full witness statement to the oral hearing).

There is clearly, therefore, some conflict in planning terms notwithstanding the overall policy support for Dublin Port.

The Dublin Docklands Development Authority (DDDA) website indicates that submissions on the draft planning scheme are now being considered pending submission to the Minister for final approval.

10.3 Alternatives

The issue of the consideration of alternatives is referred to by most of the parties to the application. In particular it is raised in detail in the submissions of Dublin Bay Watch (see Sections 6.2.2 and 9.2.9 above) and on behalf of Bremore Ireland Port Limited (see Sections 6.3.5 and 9.2.17 above). The issue was also raised in cross-questioning at the oral hearing (See Sections 9.3.1 and 9.17.3 above). The issue is also referred to in the submissions of Dublin City Council (see Sections 4.0 and 9.2.2. above), An Taisce (see Sections 5.6 and 9.2.12 above) and the submission on behalf of the Port of Waterford should also be noted (see Section 9.2.16 above).

The issue is particularly dealt with, for the applicants, in the EIS (see Section 2.5.4 above) and in the submissions to the oral hearing by Mr. Connellan, Mr. McLoughlin, Mr. Burke, Mr. Power and Mr. Durney (see Sections 9.2.1.1 to 9.2.1.3 and 9.1.2.5 to 9.1.2.7 above).

The following sections deal, firstly, with the alternatives as considered in the EIS. This includes consideration of the issue of port efficiency and 24 hour operations as referred to by several of the parties. Secondly, the matter of the proposed Bremore Port, and the port operational issues raised on behalf of Bremore Ireland Port Limited, are dealt with.

10.3.1 Alternatives Considered in the EIS and Related Issues

As indicated at Section 2.5.4 above seven alternative options to the proposed development were examined in the EIS. I would comment on each of these as follows:

1. Do-Nothing Scenario

I accept the applicants contention that this is not a viable option given the critical dependence of Ireland, as a trading nation, on port infrastructure.

I consider that the proposition put by An Taisce in relation to curtailing port capacity and reducing imports/exports is one that cannot be dealt with at an individual project level.

2. Use of Other Locations within the Port Area

In general, I am satisfied in relation to the applicants examination of this alternative and the conclusions drawn. I would place particular emphasis on the following:

- While the port estate lands are extensive in total area they are subject to a complex myriad of legal interests which have developed over a considerable period of time. While there may be argument as to why this was allowed to happen or that it represents poor estate management it is, nevertheless, still a fact so that access to lands is not a straightforward matter.
- The vacant and short-term let lands examined are generally too small, being relatively isolated pockets, or too distance from deep water. The two sites identified with potential for development, Site 7 (The Texaco Site) and Site 8 (Stack R), would provide additional container handling capacity. They are scheduled to be operational between 2018 and 2022 (see EIS Sections 1.2.45 and 4.4.36). While the additional capacity would be significant it would be far less than that provided for in the proposed development and neither area provides any opportunity to provide additional berthing.
- Of the remaining areas that are indicated as being on long term leases or licenses, those that are not already in use for terminal operations and associated cargo handling are generally significant distances from deepwater. Even if they were to become available,

therefore, there must be some doubt as to their suitability and it is very unlikely that they could be configured as a workable alternative to the proposed development which also includes, crucially, the provision of additional deepwater berthage.

- For similar reasons I do not consider that the suggestions put by several of the parties opposing the development, that existing uses at the port such as oil/gas storage, vehicular compounds or office space could be moved to other locations, even if this could be achieved at all or within a reasonable timeframe, would be likely to present a viable alternative to the proposed development.
- The suitability of much of the older port lands must also be questioned in the light of the comments by Mr. McLoughlin, for the applicants, that, in general, the fabric of the older port infrastructure was designed to cater for much lower levels of physical loading and smaller cargo throughput than that resulting from modern unitised operations (see Section 9.2.1.2 above).
- I consider that the strategic plan for the port lands as outlined by the applicants (see Section 2.3 above and Section 5.3 of the EIS, including associated maps) is credible and logical. The long term objective is stated to be to return all lands south of Tolka Quay Road to direct cargo operations. In addition to the area in the southern port, this will concentrate unitised trade close to deepwater on either side of the main navigation channel and is regarded as the limit within which direct unitised operations can be carried out efficiently (see Section 9.2.1.2 above). In the meantime the acquisition of leases for areas not in core cargo handling activities will continue as they become available.

3. Intensification of Use within the Port

It is contended by many of the parties opposing the application that existing operations at Dublin Port are inefficient and that there is, therefore, an existing reservoir of capacity that should be utilised first before any further reclamation is contemplated. This argument is put in some detail on behalf, in particular, of Dublin Bay Watch (see Sections 6.2.2 and 9.2.9 above).

I have already dealt with the substantive issue of capacity at Section 10.2.1.3 above. In terms of the specific arguments in relation to efficiency of operations, and how this might present an alternative to the proposed development, the following issues considered in that assessment are, in my view, particularly relevant:

- The estimates of port capacity requirements contained in the Indecon Report are based on assuming that utilisation levels will be in line with international norms. The report does not identify any significant existing inefficiencies at Dublin Port and its

conclusions as to when capacity would be exhausted, in the absence of any further expansion or alternative port developments, are broadly in line with those suggested by the applicants. This is not supportive, therefore, of the view that there are serious inefficiencies within current operations at the port.

- The reference to the requirement under the Ports Policy Statement 2005 for excess capacity at ports in order to ensure competition. Such excess capacity, therefore, should it exist, would not represent inefficiency.

It should be noted that, by reference to the Indecon Report, the analysis of relative port productivities advanced on behalf of Dublin Bay Watch in their initial written submission to the Board (see Section 6.2.2 above) was based on very high port productivity benchmarks of 1,100 to 1,200 TEU's/quay metre/year and which more properly apply to deep sea ports rather than to feeder ports such as those in Ireland and in respect of which the Indecon Report indicates an appropriate benchmark of 700 TEU's/quay metre/year (see pages 2-3 of the 2008 Griantec Teoranta Report attached in Appendix 2 of the Dublin Bay Watch submission and pages 40-41 of the Indecon Report).

The comparative data presented on behalf of Dublin Bay Watch to the oral hearing (see Section 9.2.9 above) is largely based on the Indecon Report and, in particular, on Annex 3 to that document which sets out industry benchmark productivity data for a range of European container ports with an annual throughput of more than 200,000 TEU. The table includes a wide range of ports from major deep sea hubs to feeder ports of relatively modest size so that straight, league table comparisons, do not seem to be appropriate. The productivity rates indicated appear to be highly variable, both within and across the different port categories. It is not obvious, therefore, that firm conclusions as to relative productivity can be drawn in the manner suggested in the Dublin Bay Watch submission and I note that, apart from the global conclusion that there is potential to improve utilisation of ports in Ireland, no such conclusion is drawn in the Indecon Report. To make proper comparisons between individual ports I would have thought that it would be necessary to have detailed and comparable information on each port being investigated.

I would also draw the Board's attention to the comment by Mr. Burke, for the applicants, that the concepts of productivity and efficiency at ports can be confused (see Section 9.2.1.3 above). In particular, the notion that productivity, as a measure of throughput at a particular point in time, will vary with market changes and, therefore, is not necessarily a measure of efficiency (see page 22 of Mr. Burke's full witness statement to the oral hearing).

The other related argument advanced by many of the parties opposed to the development is that Dublin Port should operate on a 24 hour basis.

According to the evidence of Mr. Burke the port is open on this basis, and 365 days per year, depending on market demand (see Section 9.2.1.3 above).

I am satisfied, therefore, that intensification of use within existing port operations does not constitute a viable alternative to the proposed development.

4/5. Creation of Other Additional Port Areas/Other Possible Reclamation Areas

I am satisfied, by reference to the assessment of these options in the EIS, that they do not present viable alternatives to the proposed development.

6/7. Alternative Port Locations

As indicated at Section 2.5.4 above the assessment identifies the ports of Belfast, Waterford, Greenore and Cork as the principal potential alternatives with the possibility for additional unitised capacity within the short to medium term.

Of these locations I would accept the view that both Belfast and Cork are too distant from the Dublin market, notwithstanding that there is some existing competition, especially from Belfast. Both these locations have substantial hinterlands in their own right so that it should be expected that these areas would be the main focus for any planned expansion of these ports.

In relation to Greenore (see Section 4.7.2.9 of the EIS) the assessment indicates that this port is capable of catering for large deepwater vessels. The main constraint is a rock bar at the mouth of Carlingford Harbour at a depth of -6.3 metres CD but this is technically capable of improvement by excavation. Local road access could be an issue and there is no rail access. Environmental issues are also likely.

Proposals for expansion at Greenore were before the Board, at pre-application stage under Strategic Infrastructure (Ref. PC0011). The development involved the reclamation of approximately 5 hectares of foreshore, 300 metres of quay, two number Lo-Lo berths and 10 hectares of container storage. The berths are designed to cater for vessels of 15,000 – 20,000 tonnes. The Board subsequently issued a Notice, pursuant to section 37(B)(4)(a), Planning and Development Act 2000 (as amended), confirming that the development would constitute strategic infrastructure. No application for planning permission has yet been lodged.

While it is stated that this port, which is 50% owned by the Dublin Port Company, is designed to act as a regional service provider it clearly has potential to accommodate some of the type of traffic currently

handled at Dublin Port, but not the larger vessels for which the Dublin Gateway extension is designed.

In relation to Waterford (Belview) (see Section 4.7.79 of the EIS) the assessment acknowledges that this port already services some of the southern parts of the Dublin Region. It is stated to have appropriate deepwater facilities and can handle vessels up to 200 metres in length. The Duncannon Bar is maintained at a depth of -6.5CD. The port benefits from extensive landside development potential and the quayside container handling and storage facilities are modern and efficient. It has direct access to the national road network and a rail link.

The submission on behalf of the Port of Waterford Company to the oral hearing (see Section 9.2.16 above) generally confirms the above description of the ports capabilities. It also indicates that there are plans to deepen the channel at the Duncannon Bar to -7.5 CD metres or greater in the future. It also indicates that almost 50% of its container traffic is already accounted for by the Greater Dublin market and that operational efficiencies will further improve with the completion of the motorway network in 2010.

The evidence is, therefore, that Waterford has a significant potential to handle some of the type of traffic currently handled at Dublin Port, though again not the larger vessels for which the Dublin Gateway extension is designed.

As noted in section 2.5.4 above the overall conclusion to this assessment in the EIS is to dismiss these possible alternative locations on a number of grounds. I would take issue with the reasons cited.

Firstly, the assertion that the locations are too distant from the Dublin market. This market extends well beyond the M50 and in the case of Waterford Port it is clear that it already services this area to a significant extent and with the completion of the motorway network accessibility will further substantially improve. It should also be noted that the distances and journey times quoted from Belview to Dublin refer to Dublin City Centre (see Table 4.2 of the EIS) whereas many destinations within the Dublin market to the south and south-west of the M50 would be substantially closer and, crucially, involve significantly shorter journey times than those suggested.

Secondly, the impacts on national competitiveness due to increased costs would not, in my view, be as clearcut as suggested. By reference to Section 10.2.2 above it seems likely that such costs would be significantly offset by benefits arising from increased competition.

Thirdly, this would also be a factor in the consideration of the impact of traffic movements and consequent environmental emissions.

Fourthly, I am not convinced that the carrying capacity of the national road system, soon to be substantially complete to motorway or similar standard, is a significant issue and, in any event, there could be offsetting benefits from relieving congestion on the system in the immediate environs of Dublin City, including in particular the M50 corridor.

In conclusion, while I accept that neither Greenore nor Waterford offer a direct alternative to the proposed Dublin Gateway project, which is designed to cater for larger vessels, I consider that they do offer potential to handle some of the existing freight traffic currently handled at Dublin Port. Waterford Port, in particular, has the potential to play an important role in this regard.

10.3.2 The Proposed Bremore Port

The current status of the proposal for a new port at Bremore is that it is at pre-application consultation stage before An Bord Pleanála under the Strategic Infrastructure Act (Ref. An Bord Pleanála PC0039). As indicated by Mr. Spain, for Bremore Ireland Port Limited, subject to An Bord Pleanála confirming its strategic infrastructure status, it is intended to submit a planning application in 2011 and it is intended that it would be operational in 2015 (see Sections 9.2.17.1 and 9.3.1 above).

The location for the port as originally proposed was at Bremore, just north of Balbriggan in County Fingal. However, Mr. Spain confirmed at the oral hearing that it is now intended to locate the development to the north of this within the functional area of Meath County Council, on the border with Fingal (see Section 9.2.17.1 above).

As indicated at Section 6.3.5 above, the proposed port, to be built on a phased basis, would comprise an integrated multi-modal deepwater port to cater for up to 50 million tonnes of annual freight traffic, including Lo-Lo, Ro-Ro, break bulk and bulk cargo. It would also handle passenger traffic. The port would have an operational design depth of 14 metres CD – the deepest shipping berths on the east coast – and have 24 hour marine access. Vehicular access would be via a new link road to the M1 Motorway and rail access would be via a new rail spur to the Dublin – Belfast rail line.

Bremore Ireland Port Limited is stated to be a fully approved joint venture PPP between Drogheda Port Company Limited and Castlemarket Holdings Limited.

As indicated at Section 3.2.2 above the proposed Bremore Port is the primary potential alternative to the proposed Dublin Gateway project considered in the Indecon Report and is widely referred to both in the body of the report and in its main conclusions, including the key conclusion that nothing should be done at a policy level to block either of the two projects at this stage (see Conclusion No. 5, page 138, and page 142 of the Indecon Report).

It should be noted that Mr. Spain, for Bremore Ireland Port Limited, emphasises that the development of Bremore Port is not dependant on the outcome of the subject application (see Sections 6.3.5 and 9.3.1 above).

The approach in this part of the assessment is not to attempt in any way to reach conclusions in relation to the Bremore proposal itself, as this is a matter than can only be determined by the Board on receipt of a formal planning application, but rather to focus on some of the key issues raised in connection with Bremore by the applicants in support of the proposed development and on a number of key operational issues raised in the submissions on behalf of Bremore Ireland Port Limited and which I consider cast significant doubt on the merits of the proposed Dublin Gateway Project.

As indicated in Section 2.5.4 above the applicants overall conclusion in relation to the Bremore proposal is that it is, as yet, an unquantifiable concept on economic, archaeological and environmental grounds and that it would involve unnecessary additional traffic movements and consequent increased emissions. The assessment of the Bremore proposal is set out in full in Sections 4.8.2 to 4.8.20 of the EIS. The submission of Mr. Durney at the oral hearing refers further to the matter (see Section 9.2.1.7 above). The responses, on behalf of Bremore Ireland Port Limited are summarised at Sections 6.3.5 and 9.2.17.1 to 9.2.17.4 and 9.12.1 above and the issues raised were further pursued in cross-questioning at the hearing (see Sections 9.3.1 and 9.17.3 above).

The Bremore proposal is still at a relatively early stage in the planning process. It is currently before the Board at pre-application consultation stage under the Strategic Infrastructure Act. The concept for its development has been under consideration for sometime and it was one of the projects examined in the 2006 Fisher Report (see Section 3.1.2 above).

As stated earlier the Bremore proposal is the primary potential alternative considered in the Indecon Report. Clearly a project of this scale and complexity will face many significant obstacles and require considerable resources and time to bring to fruition. I am satisfied, however, in relation to the concept as outlined and, in this regard, I note that the key conclusion in the Indecon Report is underscored by the consideration that “the development of a new port such as the proposed Bremore, if commercially feasible, would have significant regional and national benefits and would be likely to enhance competition in the Irish Port Sector” (see page 138, under Conclusion No. 5, of the Indecon Report).

A key issue raised by the applicants is the matter of distances from the Dublin market. While the applicants initially referred to comparative distances to/from Dublin City Centre I concur with the representatives of Bremore that the most relevant distance is to the M1/M50 interchange which is the key nodal point for the distribution of HGV traffic around the Dublin area, including for HGV traffic to/from Dublin Port via the Port Tunnel. To this point there would be differences of approximately 14 kilometres in distance terms and 14 minutes in journey time terms in favour of Dublin Port as against

the Bremore proposal (see Table 2 in Mr. Durney's full witness statement to the oral hearing). I do not consider that such differences are significant. The proposed location for Bremore is within the GDA, as defined in the National Spatial Strategy and the RPG/GDA, and could readily service that key market via the M1, M50 and associated motorway network. This is implicitly acknowledged in the Indecon Report. In this connection the point raised, on behalf of Bremore, in relation to the location of major distribution centres around the M50 corridor, is a valid one and the applicants figures in relation to origin/destination for existing port traffic also confirm a widely dispersed geographical pattern, well beyond Dublin City proper.

The related issue of increased CO₂ emissions is not substantiated by the applicants and it is likely, in my view, that any increases would be more than offset by the greater efficiencies associated with a purpose built port facility and associated integrated distribution hub. That such efficiencies could be expected is explicitly acknowledged in the Indecon Report as referred to earlier (see Section 10.2.2 above). The ability of the proposed facility at Bremore to service a somewhat different geographical market than Dublin Port, given its location on the Dublin/Belfast corridor, as indicated, is also an important factor in this regard. It is also worth noting that the development of a facility such as that proposed at Bremore does not necessarily presuppose a full relocation of Dublin Port and, in fact, the continued operation of Dublin Port in conjunction with developments such as Bremore is among the favoured options identified in the Indecon Report.

The key operational issues raised in relation to the proposed development refer to:

- International trends in ship size.
- The suitability of the proposed development to cater for its target vessel size.
- The adequacy of the existing navigational channel at Dublin Port.
- Potential in the long term.

It should be noted that the issues raised here focus on the Lo-Lo sector as it is within this sector that the most significant increase in ship size is occurring, including, crucially, increased draught. Ro-Ro vessels tend to be relatively shallow in draught and Dublin Port already handles one of the largest Ro-Ro vessels in the world, The Ulysses.

There is agreement amongst the parties that Lo-Lo vessel sizes are increasing and that this trend is set to continue but there is a substantial difference of opinion as to what the appropriate target size for a further expansion at Dublin Port or for a new port facility in Ireland should be.

Given its current role as a feeder port to other larger ports within the UK, Northern Europe and the Mediterranean the Dublin Gateway Project is stated

to be designed to cater for vessels in the region of 2,000 TEU which is the anticipated largest size of container ship required for this type of trade for the foreseeable future (see Section 1.2.16 of the EIS and Section 9.17.3 above).

The counter argument put on behalf of Bremore Ireland Port Limited has essentially two aspects. First, that there is a need to be able to handle larger vessels than this even on feeder services, although the evidence presented on this appears to be somewhat confusing (see in particular Sections 6.3.5, 9.2.17.3 and 9.3.1 above). Second, that there is a need to have the flexibility to be able to handle larger vessels servicing the major trade routes. On this basis the Bremore facility is predicated on the capability to handle vessels up to 5,000 TEU.

It should be noted that in their evidence to the oral hearing Mr. Connellan and Mr. McLoughlin, for the applicants, indicated that while the proposed berth would be dredged to a depth of 11 metres the berthing structure is to be designed to allow for potential further deepening to 15 metres if trade conditions in the future require it. Such further deepening would be subject to the necessary statutory consents (See sections 9.2.1.1 and 9.2.1.2 above). While it is not anticipated, by the applicants, that this facility would be required in the foreseeable future the decision to build this flexibility into the design does, in my view, tend to add credence to the case being put on behalf of Bremore for a deepwater port capable of addressing long term requirements. It is noted that there was no mention of this element of the design in the original application documentation as lodged for planning permission. In this connection, the provision of 15 metres deep berths at Dublin Port would not be a simple matter and would have significant consequences for the navigational channel into the port. This is considered further below.

There is considerable dispute between the parties as to the capability of the Dublin Port Gateway Project to accommodate the target vessel size of 2,000 TEU. While there are some differences of opinion as to the berth depth requirement for such a vessel the main focus of the argument is on the navigation channel into the port. This is currently maintained to a depth of -7.8 metres CD. For larger vessels the port currently operates on a tidal window basis, a practice that is not uncommon in many ports, according to the applicants.

Mr. McLoughlin, for the applicants, in cross-questioning rejected the contention, put on behalf of Bremore Ireland Port Limited, that most fully laden ships of 2,000 TEU would not be able to access the port even on high tide. According to Mr. McLoughlin draughts of ships of similar TEU can vary significantly and there is no such determination as the depth required for a 2,000 TEU ship fully laden. While there are ships of 2,000 TEU that the proposed facility will not be able to handle there are many ships around that size that it will be able to handle. It can also depend on whether or not a ship is fully laden. There could be a 3,000 TEU ship partly laden that could be accommodated.

While I accept Mr. McLoughlin's explanation as to the reality of how ship designs, including draught, varies and how, in practice, different configurations would be handled in the port, I would also conclude the following from the evidence presented:

- In seeking to accommodate vessels of up to the region of 2,000 TEU the proposed facility, and Dublin Port, would appear to be operating to limit of its capacity in terms of ship size.
- Such vessels will require the operation of an even more restricted tidal window than at present.

If it should become necessary in the future to deepen the berths to 15 metres this would have very significant consequences for the navigation channel which would also have to be upgraded in order to provide for access. The evidence put on behalf of Bremore is that even a conservative estimate, based on limited channel improvements, would generate a dredge requirement of over 7 million cubic metres, or many times the volume of material proposed to be dredged in the current application (see Section 9.2.17.4 above). There is also the issue of the Dublin Bay Project Pipeline that crosses the channel to the east of Poolbeg Light. According to Mr. McLoughlin, for the applicants, the pipeline is at a depth of 8 metres below current channel depth (see Section 9.14.3 above). While I am not in a position to advise as to whether or not this would pose a difficulty it is clearly an issue that would have to be addressed.

The representatives of Bremore Ireland Port Limited also raised, in their initial written submission to the Board, the issue of the restricted width of the navigational channel and questioned its ability to efficiently handle larger vessels. They also raised issues related to ship manoeuvring and the possible necessity to use tugs (see Section 6.3.5 above). Apart from references in Mr. McLoughlin's submission to the oral hearing, for the applicants (see Section 9.2.1.2 above), to the use of a tidal window and confirmation that tugs are used at present and would continue to be used for larger vessels, the applicants made no detailed response to the issues raised. The matter was further pursued by Mr. Spain, for Bremore, in cross-questioning (see Section 9.17.3 above). He queried if any assessments had been undertaken in terms of ship manoeuvring and channel congestion issues, and with regard to the tidal window. Mr. McLoughlin's response was essentially to refer to discussions with the Harbour Master and to rely on the ports operational experience to date as evidence that it can handle the shipping traffic envisaged.

It should be noted that the Indecon Report did not specifically address port operational issues in terms of shipping. However, in reaching one of its key conclusions, the report does refer to the availability of adequate deepwater depth to facilitate increasing ship size as impacting on the competitiveness of port services into the future (see page 139, under Conclusion No. 6, of the Indecon Report).

I consider the issues raised, and in particular the question of the future adequacy of the navigational channel, to be of critical importance in

determining whether the proposed development should proceed or not as it has a direct bearing on the long term viability of the port. In this context I am surprised that the applicants did not seek to address these matters in detail at the oral hearing and I consider the absence of proper assessment to be a significant deficiency in the applicants case.

It would seem imperative that an island nation, critically dependent on external trade, should develop a modern port infrastructure with the capability and flexibility to meet all potential requirements and opportunities for the long term rather than to invest further in an existing facility where the capacity to meet future needs may be limited and which has not been adequately demonstrated. This, in turn, perhaps points to a difficulty with existing ports policy which, as stated in the Indecon Report, is essentially market led and does not attempt to implement an interventionist planned approach (see page 12 of the Indecon Report). Securing the necessary type of port infrastructure to meet Ireland's future needs might require such direct intervention.

10.4 Environmental Impacts and Other Issues

10.4.1 Visual/Landscape Impact

The impact of the proposed development in visual and landscape terms is raised by most of the parties to the application. The issue is particularly dealt with for the applicants in the EIS (see Section 2.5.14 above) and in the presentation by Mr. Burns at the oral hearing (see Section 9.2.1.20 above). The issue was also raised under cross-questioning, particularly by Ms. O'Leary, for Dublin Bay Watch, and Ms. Harris for Dublin City Council (see Sections 9.9.1 and 9.9.2 above).

The exceptional amenity and recreation value of Dublin Bay is well recognised and is reflected in the myriad of amenity and natural heritage designations that apply across the bay and in the various development plan policies and objectives employed to protect and enhance this value (See Sections 3.3.1 and 3.4 above). Full account is taken of this status in this assessment.

I concur with the applicant's assessment that the area of prime visual influence for the proposed development is that defined by Clontarf Promenade to the north, the North Bull Wall to the east and the Great South Wall to the south (see Fig. 14.3 in the EIS). There would be no significant impact beyond this area out into the wider bay due to a combination of the relatively flat topography, the lengthy separation distances involved and various intervening obstructions or existing developments.

In landscape character terms, this visual catchment is already dominated by the port, major infrastructural utilities, including the twin 210 metre high towers at the ESB PowerStation on the Poolbeg Peninsula, and associated industrial development. In addition, construction work has now commenced on the Dublin Waste to Energy Facility on the Poolbeg Peninsula. The proposed

development would be an extension to these existing established land uses and would not change the character of the area.

The primary sensitive visual receptors for the proposed development are the Clontarf Promenade, the North Bull Wall and the Great South Wall.

In relation to Clontarf Promenade there are essentially two types of sensitive receptors. The first arises from the recreational value of the promenade and associated linear park which is heavily used for walking, cycling and other activities and is set for further improvements through the development of the S2S Sutton to Sandycove Walking Cycling Route Project (see Objective R08 in the City Development Plan – Section 3.3.1 above). The second arises from the many residential properties along Clontarf Road that have views into Dublin Harbour and out into Dublin Bay. The direct line distance from the seafront to the proposed development would be approximately one kilometre compared to approximately 600-800 metres to the existing port development.

From the perspective of both recreational users and residents along the Clontarf frontage it is clear that the proposed development as with existing port development would be easily visible from the stretch of frontage directly, or close to directly, opposite the development (see EIS Photomontages 1 and 2 and Oral Hearing Photomontages 5 to 9). The principal effect would be to extend the existing industrial vista eastward and to partly obstruct existing views of Killiney Hill and the Wicklow Mountains in the distance. While the proposed boundary treatment and landscaping along the northern boundary of the proposed reclamation area would mitigate the view to some degree it is clear that the cranes, lighting masts and container stacks would still be visible.

The EIS acknowledges these impacts as negative and I would agree with this assessment. However, there are significant mitigating circumstances. Firstly, the existing port/industrial context would significantly diminish the perceived impact. Secondly, the development would be viewed, at least in part, against the existing industrial backdrop of the Poolbeg Peninsula. Thirdly, the obstruction of the view to the mountains would generally be partial only in a very wide panorama. I do not consider, therefore, that the impact would give rise to a serious injury to visual amenities.

There are also the same two types of sensitive receptor on the North Bull Wall. It is heavily used for recreational purposes and eight residential properties, the Bull Wall cottages, are located just east of the Wooden Bridge. The distance from the North Bull Wall to the proposed development would be approximately 900 metres.

Again the proposed development would be easily visible from the North Bull Wall (see EIS Photomontage 4 and Oral Hearing Photomontage 12). However, the development would be set against the backdrop of the existing port, and within a wide panorama, so that the visual impact, in my view, would not be significant.

In relation to the Great South Wall the sensitive receptor arises from its use for recreational purposes. The distance to the proposed development would be approximately 500 metres from the nearest (west) end of the wall. The development would be clearly visible (see EIS Photomontages 5 and 6). However, it would be perceived as an extension to the existing port in the nearer views and be read against the backdrop of the existing port in the more distant views. The visual impact, therefore, would not be significant.

The issue of light pollution is raised by a number of parties. In this connection the additional photomontages submitted at the oral hearing include a number of night views (see Oral Hearing Photomontages 2, 6 and 10) and I consider that these adequately demonstrate that the development at night would be perceived in the context of existing port lighting and street and other lighting along the seafront and would not give rise to any significant additional impact. I also note the proposed mitigation in the use of cowled lighting to minimise light spill and light glow.

A final issue that arose at the oral hearing concerned the accuracy of the photomontages presented by the applicants (see Section 9.9.1 above). The dispute focused on whether or not the photomontages accurately portray what the human eye would actually see – the contention on the part of the Dublin Bay Watch being that they appeared to suggest that the development would be further away than would be the case in reality.

I consider that Mr. Burns, for the applicants, explained the relevant parameters fairly and accurately. In particular, it is critically important, as stated by Mr. Burns, to appreciate that while photomontages are useful as an aid they are not the visual assessment. They are simply a tool to attempt to represent reality as best as one can with a camera, but this will never be reality. I would emphasise that my assessment in this case was based on all of the documentation and arguments put before the Board and, crucially, on the basis of a number of site inspections to the affected area. I would generally agree with Dublin Bay Watch that the photomontages do portray the existing port development and the proposed development as being somewhat more distant than when observed with the human eye on location.

10.4.2 Traffic

The impact of the proposed development in terms of traffic generation is raised by a significant number of the parties to the application. The issue is dealt with for the applicants in the EIS (see Section 2.5.6 above) and in the statement of evidence of Mr. Tom Lyons as presented at the oral hearing (see Section 9.2.1.12 above). The reports/comments of Dublin City Council (see Section 4.3.4 above), the NRA (see Section 5.5 above) and the DTO/NTA (see Sections 5.7, 9.2.5 and 9.18.12 above) raise a number of substantive issues. The submission of Bremore Ireland Port Limited raises a number of queries in relation to the TIA methodology (see Section 6.3.5 above).

In relation to the construction phase of the proposed development, it should be noted that the majority of infill material for the land reclamation would be

delivered by the sea as would major construction elements such as piling and cement, sand and stone for on-site batching into concrete. This significantly reduces the impact of road based construction traffic on the surrounding road network.

Infill material sourced from quarries outside the city would be routed to the site via the M50 and the Dublin Port Tunnel. The delivery of materials sourced from within the city, such as from the Metro North project, would be subject to the agreement of Dublin City Council as to routes, timing etc.

The key access routes to the development site, external to the existing port, are the Dublin Port Tunnel and East Wall Road with accesses to the port via Promenade Road and Alexandra Road as well as a left in – left out only access to the P & O Terminal off East Wall Road. The existing rail line access crosses East Wall Road and runs along Alexandra Road. As outlined by Mr. Lyons, for the applicants at the oral hearing, the Port Tunnel has a critical role in facilitating access to the port, handling approximately 60% of traffic with the remaining 40% using East Wall Road.

The first substantive issue relates to the potential impact of increased rail freight on traffic on the East Wall Road, a key approach to/from the Port Tunnel, and this is referred to by both Dublin City Council and the NRA. Both bodies recommend conditions, in the event of a grant of permission, requiring the operations of the level crossing to be agreed in order to minimise any impacts on the operations of the Port Tunnel. In the event of the Board deciding to grant permission I would recommend the attachment of such a condition and I note the applicants' agreement to same.

The applicants have confirmed that there is adequate storage capacity on Alexandra Road and at the CIE Freight Terminal for trains to queue while waiting to cross East Wall Road.

It should be noted that while existing rail freight operations at the port account for a very small proportion of overall port business the issue of the capacity of the level crossing and its impact on traffic flows to/from the Port Tunnel could become significant in the event of a substantial move to rail freight transport associated with the proposed Dublin Gateway Project. While rail connectivity is put forward as a key benefit to the proposed development, no assessment of this, albeit probably long term, potential bottleneck, has been presented.

The second substantive issue relates to the traffic impacts on East Wall Road. Of particular interest here is the potential increase in traffic west of the East Wall Road/M50/Tolka Quay Road junction where the road gradually becomes more residential in character as one travels west. While the focus of the TIA is on capacity assessments of the key junctions the network diagrams indicate traffic flows on the main links on the road network (see TIA, Appendix 9 to the EIS). These indicate only very minor increases on the local road network generally, including on this part of East Wall Road, attributable to the proposed development. This essentially reflects the critical importance of the

Port Tunnel access route which would accommodate the greater part of the increase in port traffic, and in particular HGV traffic.

A related issue raised by the DTO/NTA concerns the impact of the development traffic in terms of local transport objectives for the North Wall area, including the proposed North Wall QBC and the walking/cycling environment. While these matters are not specifically addressed in the applicants' assessments the relatively minor traffic impact predicted for the local road network, resulting from the proposed development, should mean that there are no significant consequences for these measures.

It is noted that the assumptions made for assessing road network capacity to accommodate projected traffic levels included a significant layout modification to the North Wall Quay/East Wall Road/East Link Bridge for 2028 traffic conditions (see Section 2.5.6 above). Mr. Lyons, for the applicants, clarified at the oral hearing that these modifications would be required anyway to accommodate the expected increase in background traffic levels and that the proportion of additional traffic generated as a result of the proposed development would be relatively small (see Section 9.2.1.12 above). It is also indicated that the addition of the Samuel Beckett Bridge across the River Liffey and the Dodder Bridge across the Grand Canal Docks will reduce traffic along East Wall Road and push the need for the junction modifications further into the future (see point 29, Mr. Lyons full statement of evidence to the Oral Hearing).

A final issue raised by the DTO/NTA is the stated need for a travel plan for the port area. This appears to be a development of the mobility management plan concept. The scope of the exercise as described by the DTO/NTA in this case is very expansive, taking in the entire port area and involving a range of significant measures across all transport related activities, including freight operations. The applicants are particularly anxious that any such plan should be agreed in the context of an operating port (see Section 9.18.14).

I do not consider the absence of a Travel Plan to be detrimental to the application. Nor do I consider, given its potential complexity and the timeframe likely to be necessary for its preparation, that such a plan should be required by condition, in the event of a grant of planning permission. I consider that it would be more appropriate for the DTO/NTA to pursue the development of a travel plan for the port area with the Dublin Port Company, Dublin City Council and other relevant authorities as an exercise in its own right.

In relation to the issues raised on behalf of Bremore Ireland Port Limited concerning the methodology employed in the applicants' TIA, these were responded to in detail by Mr. Lyons at the oral hearing (see Sections 34-38 of his full statement of evidence). I am satisfied that the methodology employed in the TIA was appropriate and that it was properly executed.

Finally, in relation to the other conditions recommended by Dublin City Council, in the event of a grant of permission (see Section 4.3.4 (ii) and (iii) above) I would comment as follows:

- As indicated by the applicants the demand for public transport to the proposed Dublin Gateway facility will be low (see Section 32 of Mr. Lyons full statement of Evidence to the Oral Hearing). I do not, therefore, consider that it would be either reasonable or practical to require public transport facilities linking to the city centre. In this connection it should be noted that the proposed upgrading and expansion of cruise liner facilities, to be concentrated at Alexandra Basin, is not a part of the development proposed in this application (see also Section 2.3 above).
- A condition requiring details of access routes for construction traffic, and measures to ensure their maintenance and repair/reinstatement following the construction phase, would be appropriate. It would not be reasonable, in my view, to require the improvement of such routes as seems to be implied in the suggested condition. The applicants' proposals, in this regard, are set out at Section 33 of Mr. Lyons full statement of evidence to the Oral Hearing. It should also be noted that the conditions recommended by Dublin City Council include a standard bond to cover road damage that might result during the construction of the development.

10.4.3 Noise

Potential noise nuisance arising from the proposed development is raised by a number of parties to the application. The issue is addressed for the applicants in the EIS (see section 2.5.11 above) and in the statement of evidence of Mr. Potts presented at the Oral Hearing (see Section 9.2.1.11 above). The submissions of Dublin Bay Warch (see Sections 6.2.2 and 9.2.9 above) and of Barney Reilly and Pauline Noughton, 48 Clontarf Park, are also of particular note.

The main issues that arise refer to:

- Piling noise during construction.
- Noise associated with container stacking, particularly at night.
- Noise travelling across a water body.
- The issue of noise limits.

In relation to piling noise this is identified in the EIS as the greatest source of noise emissions during construction. It is suggested that any requirement to operate piling rigs outside the standard hours of 0700 hours to 1900 hours Monday to Friday should be agreed with the local authority beforehand. This is a standard approach to the control of noise from such activities and could be the subject of a condition, in the event of a grant of planning permission.

In relation to container stacking noise, particularly at night, this was identified in the EIS as a potential source of nuisance and it was suggested that training of container handling operators was the best way to minimise container placement noise. The results of additional assessments presented at the oral hearing indicate that complaints are likely from Clontarf receptor areas.

There are a number of factors that need to be taken into account. These are:

- The assessments are based on potential maximum noise emissions.
- The noise level calculations for receptors at Clontarf assume the occurrence of meteorological conditions most favourable to the propagation of noise.
- The proposed container stacking area would be 1,300 metres from Clontarf compared to 930 metres for the existing area. While this is stated to generate a quantitative noise reduction of 2.9 dB relative to existing noise levels, the benefit of this is likely to be offset by the increased level of activity at the new port area.
- The proposed northern boundary wall would screen the first two layers of containers. It would, however, be ineffective for the layers above this and which are planned to extend up to a maximum of six containers in height.
- It is noted that the proposed container stacking area would be closer, at 1,300 metres, than the existing area, at 1,700 metres, to the Bull Wall cottages, thereby giving rise to similar potential noise disturbance there.

It is indicated by Mr. Potts, for the applicants that Dublin Port Company is actively engaged in the assessment and management of noise from its operations as a whole and that this includes the setting up of a community liaison committee to examine operational issues (see Section 5.4.6 of his full witness statement to the oral hearing and that also sets down a range of operational measures that are being implemented or that could potentially be implemented). No details are provided as to the current make-up of the committee. I consider that, in the event of a grant of permission, a condition could be attached specifically requiring the establishment of such a committee for purposes of addressing noise and other relevant operational issues and requiring that the committee include representatives from the nearest affected areas of Clontarf and the Bull Wall cottages. I consider that this would be a reasonable way to deal with what is obviously a current and ongoing issue.

In relation to the issue of noise travelling across a water body the EIS assessment did model the water in the bay as a hard, noise reflecting surface.

In relation to the issue of noise limits, I concur with the applicants that setting limits at the port boundary would not be practicable and would give rise to serious operational difficulties for the port. It should also be noted that there are no sensitive noise receptors immediately adjacent or in close proximity to the port.

10.4.4 Air Quality

The potential for increased air pollution arising from the proposed development is raised by a number of parties to the application. The issue is addressed for the applicants in the EIS (see Section 2.5.11 above) and in the Witness Statement of Mr. Drabble presented at the Oral Hearing (see Section 9.2.1.10 above).

The main issue that arises here is the use in the EIS of data from air quality monitoring stations in Marino and Ballyfermot to establish baseline air quality conditions. Potential air pollution from increased shipping and road vehicular traffic is also referred to.

The stations in question are part of a network of monitoring sites maintained by Dublin City Council for the purposes of air quality management. It is indicated in the EIS that as site-specific background pollutant estimates were not available data from the stations at Marino and Ballyfermot was utilised as this was considered to be representative of the Dublin Port Area for the key NO₂ and PM₁₀ atmospheric pollutants. It is also indicated that the Air Quality Monitoring and Noise Control Unit of Dublin City Council was consulted and approved the proposed methodology and that the Environment and Engineering Department of Dublin City Council confirmed that the data from the Marino and Ballyfermot stations was the most representative of the Dublin Port area (see Sections 11.2.8, 11.2.24 and 11.3.2 of the EIS). I would also concur with Mr. Drabble's ascertainment at the oral hearing that data from the local authority's air quality monitoring network would provide more reliable and characteristic evidence of baseline air quality conditions than short term monitoring at local receptors.

In relation to potential emissions from shipping vessels the proposed development is predicated on facilitating larger vessels rather than any significant increase in the number of vessels visiting the port. This, combined with increasing international regulation of emissions from ships, will result in a negligible impact from this source (see EIS Sections 11.5.2 to 11.5.6).

Potential emission impacts also arise from increased road traffic associated with the proposed development. In relation to the construction phase, it is noted that the majority of infill material required and a significant proportion of the main structural elements for the development would be delivered by sea and that the majority of construction road traffic would be routed to the development site via the Dublin Port Tunnel. During the operational phase the main access route to the development would also be via the Dublin Port Tunnel with some slight increase in traffic on the East Wall Road. Significant increases in traffic on the local road network and close to sensitive receptors, therefore, are not anticipated (see EIS Sections 11.4.8 to 11.4.17 and 11.5.7 to 11.5.17).

10.4.5 Cultural Heritage

The principle outcome of the archaeological investigations carried out was the discovery of a shipwreck, possibly 18th or early 19th century in date, within the area proposed for reclamation (see Section 2.5.16 above). It is proposed to excavate and record the wreck and to rebury it within an adjacent seabed area subject to the approval of the DoEHLG.

The report of the DoEHLG (see Section 5.1 above) recommends conditions to be attached to any grant of permission. These include requirements for the details of the treatment of the wreck to be agreed and for further archaeological investigations to be carried out prior to the development proceeding given the extremely high underwater archaeological potential in the area.

The issue is not raised by any other party to the application.

I consider that conditions such as these recommended by the DoEHLG should be attached in the event of a decision to grant planning permission for the proposed development.

10.4.6 Climate

As indicated at section 2.5.13 above, the principal assessment carried out in relation to climate was to compare the additional emissions of greenhouse gases that would arise with the proposed development in place with those that would arise from a do-nothing scenario wherein, as Dublin Port reaches capacity, freight would divert to alternative ports. The conclusion is that failure to extend Dublin Port as proposed would increase emissions from associated freight by some 11%, corresponding to 0.02% of total national greenhouse gas emissions.

It should be noted that this assessment is based on an assumption that Lo-Lo traffic would divert to the closer of Cork or Belfast and the Ro-Ro traffic would divert to Rosslare. The development of a new port in closer proximity to the Dublin market, such as that proposed at Bremore, would clearly not generate such a relative increase in greenhouse gas emissions.

An Taisce refer to the inadequacy of this section of the EIS on the basis that there is a need to provide data on the emissions from increased land based transport that would be generated by the proposed development (see Section 5.6 above). The assessment referred to above is based on emissions from road traffic. While detailed data is not provided it appears that it is anticipated that emissions as a result of port related traffic are anticipated to more than double between 2007 and 2021, the bulk of the increase being attributable to the proposed Dublin Gateway Extension (see EIS Table 13.6). National emissions are predicted to increase over the same period but at a much slower rate so that the proportionate share of national emissions attributable to port related traffic is predicted to increase from 0.13% to 0.20% over the period.

Given the critical importance of further port development to the national economy, and the potential for lessening greenhouse gas emissions as a result of developing more efficient port infrastructure and switching traffic to the rail network, I do not consider that climate based concerns should be upheld as an obstacle to the proposed development.

10.4.7 The Community Gain Proposal

As outlined at Section 2.4 above this is included in the application in the context of Section 37 G(7)(d), Planning and Development Act, 2000, as inserted by Section 3, Planning and Development Strategic Infrastructure Act, 2006. This section empowers the Board to attach a condition to a permission requiring:

- (i) the construction or the financing, in whole or in part, of the construction of a facility, or
- (ii) the provision or the financing, in whole or in part, of the provision of a service,

in the area in which the proposed development would be situated, being a facility or service that, in the opinion of the Board, would constitute a substantial gain to the community.

As indicated the proposal is to hand over circa 14 hectares at the southern end of the Bull Island to the public under the control of Dublin City Council and to provide funds over a 10 year period for its maintenance and to preserve/reinforce its ecological characteristics. The lands are within the designated North Dublin Bay SAC and the North Bull Island SPA.

The community gain document includes in Appendix 1 copies of responses received by Dublin Port Company from various community groups and Dublin City Council in relation to the proposal. The general tenor of these responses is quite negative. They include, in particular, the following:

- The issue of ownership being unimportant as public access and use of the area is well established. There would not, therefore, be any gain to the public.
- The area is already subject to various protections and the real issue is one of management.
- Query in relation to ongoing maintenance costs.

The proposal is referred to by Dublin City Council in their report to the Board on the application in a more positive light – it is stated to be welcomed as it would allow for a comprehensive management policy to be implemented with benefits for amenity users and biodiversity (see Section 4.4 (iii) above).

The submission on behalf of Dublin Bay Watch is that the proposal would not represent any gain for the community as the lands in question are already protected (see Section 6.2.2 above). The Clontarf Residents Association raises serious concerns in relation to liability for ongoing maintenance costs (see Section 9.2.10).

Having regard to the above, and in particular to the positive response issued on behalf of Dublin City Council in the context of the application and who would ultimately assume responsibility for the lands, I am inclined to the view that the proposal has the potential to generate a substantial gain to the community. Given that the proposal is put forward as a part of the application, strictly speaking, it is not necessary for the Board to attach a specific condition as allowed for under Section 37G(7)(d) of the Act in the event of a grant of permission. However, the Board may wish to do so in order to ensure clarity on the issue, and perhaps, to specify requirements as to timing and method of transfer.

I do not consider, however, that the proposal is such that it should have any material bearing on the decision as to whether or not to grant planning permission for the proposed development.

10.4.8 Water Supply

This refers to the concerns raised by Dublin City Council in relation to the supply of potable water to the development given the length, at circa 7 kilometres, of the proposed potable water pipe network and the likely residence time of the water in the system (see Section 4.2(vi) above).

The issue is addressed for the applicants by Mr. Dunsire in his presentation to the oral hearing (see Section 9.2.1.8 above). The means to minimise demand are elaborated on in his full statement of evidence and include the development of rainwater harvest systems for use in toilet flushing and washing. The relatively modest number of buildings required for the facility is also referred to (see page 9, point V of the statement).

Mr. O'Sullivan, for Dublin City Council, confirmed at the hearing that he did not see an immediate solution and that this is why he recommended a refusal of permission (see Section 9.13.2 above). However, it is noted that a condition to address the issue is included in Dublin City Council's suggested schedule of conditions in the event of a permission being granted and that it is not cited as reason for refusing planning permission (see full Proof of Evidence of Ms. Claire Caffrey, for Dublin City Council, to the Oral Hearing).

I am satisfied that the issue is one that should be capable of resolution and that it could be addressed by condition in the event of a grant of planning permission.

10.5 Flooding, Hydrodynamics and Climate Change

These matters are assessed in the report of Mr. Anthony Cawley, Hydro Environmental Limited, attached as Appendix A to this report.

The principal conclusions of Mr. Cawley's assessment are as follows: -

Flooding

- The Flood Risk Assessment submitted by the applicant dated April 2009 is sufficiently detailed to evaluate the flood risk to the development and the impact of the development on flooding and flood risk to adjoining lands. This flood risk assessment shows that the proposed port extension is a suitable development type for its Flood Zone A classification. The recommended quay levels and floor levels are sufficient in terms of flood risk in respect of the 200 year flood event and climate change sea level allowance.
- A recommendation by the consultants to raise floor levels to 4.24 mOD provides additional flood protection for the port buildings and allows for future possible sea level rises and should be encouraged.
- The impact of the proposed development on tides and fluvial flows is shown to be negligible in respect of flood risk and only a slight impact to the wave climate is predicted. The impact to the wave climate under the 200 year design flood conditions will not affect the flood risk to the Clontarf Sea frontage as an area will be extensively overtopped and the limiting factor will be the available flood storage behind the defences. The potential impact on wave climate along the Clontarf sea frontage under less severe flood events (where the overtopping volume is the limiting factor as opposed to the available flood storage volume) could potentially result in a slight worsening of the flood risk for the easterly portion of the Clontarf Road.
- A new flood defence scheme has been approved by An Bord Pleanála for the Clontarf area to combat wave and tidal flooding. The proposed development will not adversely affect the level of flood protection provided by this scheme when implemented.
- Given the high level of flood risk that currently exists along the Clontarf Road frontage the proposed development has a potential to very slightly exacerbate flooding through impact on the wave climate at the easterly portion of Clontarf Road. Therefore pre the construction of the Clontarf Coastal Defence Scheme the proposed port development could be considered to represent an unacceptable risk to flooding.

Hydrodynamics

- The potential impact on the sediment regime within the Tolka Estuary SPA has not been adequately addressed either in the EIS or the

Appropriate Assessment studies. The principal limitation of the support studies is that the sediment transport regime was not modelled directly to assess medium to long term changes in sea bed characteristics as a result of the proposed reclamation and dredging work. The sediment impact assessment is based on the hydrodynamic model output by identifying potential changes in velocities and bed shear stresses under spring and neap tide conditions and altering the dredge design to minimise such impacts. The hydrodynamic model used for this assessment is not considered to be adequately calibrated or validated with no verification points available within the Tolka Estuary. No details as to the bathymetric data in terms of the extent, scale and survey dates was provided in the model reports to assess the accuracy of the model set-up and predictions.

- The hydrodynamic model shows for the proposed layout (Option 2B) moderate to significant areas of potential shear stress change (both increases and decreases) within the Tolka Estuary SPA which could given the nature of the bed sediment represent possible erosion and deposition sites. The effect of wave climate on sediment transport has not been assessed for the study area. Therefore given the importance of the area as an SPA it is concluded that the potential impact to the sediment regime has not been adequately assessed.
- It can be concluded from the sediment plume modelling that the capital dredging operation will have a primarily localised impact both in terms of plume concentration and sediment deposition area and can significantly avoid impact on the shallower Tolka Estuary intertidal and subtidal waters by confining the dredging works east of the reclamation to periods of the ebbing tide (outgoing tide).

Climate Change

- Based on current research and current uncertainties on the behaviour of the Greenland and Antarctica ice shelf, it is considered that an allowance of 0.5 metres for sea level rise remains a suitable climate change allowance for infrastructure planning purposes over the next 50 to 100 years.
- The new planning guidelines concerning flood risk management deal with the suitability, justification and flood risk assessment for developing within coastal and fluvial flood risk and floodplain areas. Therefore the proposed Dublin Port reclamation project is covered by these planning guidelines. The recommendation by Sweeney et al. in the EPA Climate Change Report (Sweeney et al. 2003) that no further land reclamation be carried out in estuaries which has been referred to in many of the third party submissions is only general guidance as to good/prudent practice as are the recommendations in respect to set back distances from hard and soft coastal defences and sand dune systems.

The assessment also includes the following conclusion in relation to the issue of sediment contamination: -

- The assessment of the seabed for contaminants is considered to be limited and more information should have been gathered in respect to establishing the likely sediment profile in respect to depth so as to inform the EIS and AA studies of the implications of the capital dredge works on disposal options and possible water quality and benthic impacts of the dredging operation on the Tolka Estuary SPA.

10.6 Appropriate Assessment (AA)

10.6.1 Introduction

This issue or issues relevant to this assessment are raised by a significant number of the parties to the application.

The issue was initially addressed in the EIS by reference to the sections dealing with Flora and Fauna (see Sections 2.5.3, 2.5.7 and 2.5.8 above). Relevant issues were referred to in detail in the initial written submissions on behalf of Dublin City Council, NPWS, Bird Watch Ireland and Dublin Bay Watch (see Sections 4.2, 5.2, 6.2.1 and 6.2.2 above).

As part of its further information request the Board invited the applicants to prepare a discreet appropriate assessment document to address all of the relevant issues and this was subsequently submitted (see Sections 7.1 and 7.2.2 above). Further written submissions relevant to this matter were received. Those submitted on behalf of Dublin City Council, NPWS, An Taisce, Eastern Regional Fisheries Board (ERFB), Dublin Docklands Development Authority (DDDA), Bird Watch Ireland, Dublin Bay Watch and Clontarf Residents Association referred to the issues in some detail and are of particular note (see Sections 8.1, 8.2.1, 8.2.3, 8.2.4, 8.2.6, 8.4.1, 8.4.2 and 8.5.1 above).

Matters of most relevance to appropriate assessment were addressed for the applicants at the oral hearing in the submissions of Mr. Dunsire, Mr. Hall, Ms. Pendle, Mr. Velterop, Ms. Covington, Mr. Saunders, Mr. Nairn and Ms. John (see sections 9.2.1.8 and 9.2.1.13 to 9.2.1.19 above).

Detailed submissions were presented at the oral hearing on behalf of Dublin City Council, NPWS, Bird Watch Ireland, Irish Seal Sanctuary and Dublin Bay Watch (see Sections 9.2.2 to 9.2.4, 9.2.7, 9.2.9, 9.14.1 and 9.16.1 above).

Relevant issues were also raised at some length under cross-questioning (see Sections 9.3.3, 9.3.5, 9.5.1, 9.7.1 to 9.7.6, 9.11.1 to 9.11.5, 9.15.1, 9.17.1, 9.17.4 and 9.17.6 above).

10.6.2 Guidance

In preparing this assessment particular regard has been had to the following guidance documents:

- *Managing Natura 2000 Sites: The provisions of Article 6 of the Habitats Directive 92/43/EEC, EC, 2000.*
- *Assessments of plans and projects significantly affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6 (3) and (4) of the Habitats Directive 92/43/EEC, EC, 2000.*
- *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities, DoEHLG December 2009.*

10.6.3 Scope of AA

Articles 6(3) and 6(4) of the Habitats Directive require the following:

Article 6 (3):

Any plan or project not directly connected with or necessary to the management of the site but likely to have significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

Article 6(4)

If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natural 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.

Article 3(i) of the Directive indicates that the Natura 2000 network includes both SAC's established under the Directive and SPA's under the Birds Directive and Article 7 of the Directive extends the obligations under Article 6 (2), (3) and (4) of the Directive to SPA's.

The guidance documents set out a structured, step by step, approach to the assessment and which has generally been endorsed in relevant rulings of the European Court of Justice (ECJ).

The guidelines proposes a four stage assessment process as follows:

Stage One	Screening
Stage Two	Appropriate Assessment
Stage Three	Assessment of Alternative Solutions
Stage Four	Assessment where no alternative solutions existing and where adverse impacts remain (imperative reasons of overriding public interest – IROPI).

Stage One, the screening stage is essentially to decide if an appropriate assessment in relation to the proposed project is necessary or not. In the subject case this stage was effectively completed prior to the lodgement of the application. The various scoping exercises conducted by the applicants, and which included the pre-application consultation with An Bord Pleanála pursuant to Section 37(b) Planning and Development Act 2000, as inserted by Section 3 of the Strategic Infrastructure Act 2006, and advice obtained from statutory consultees, and reported in the EIS, indicated that, given the nature of the proposal and its location in relation to SPA's and SAC's, an appropriate assessment would be required.

In effect, therefore, and by reference to Article 6 (3), the conclusion to the screening stage was that it could not be ruled out that the proposed development would have a significant effect, either by itself or in combination with other plans or projects, on a Natura 2000 site.

The guidance indicates that the staged process of assessment as recommended is to be carried out on a sequential basis and that the outcome of each stage determines whether a further stage in the process is required.

Within this scheme, therefore, Stage Two, appropriate assessment (AA), is clearly required in this case. This is the focus of the applicant's assessment and given their conclusion of no adverse impact on the integrity of a Natura site, they do not proceed to Stage Three or Four.

The parties opposed to the proposed development also focus on the Stage Two, appropriate assessment, and contest the applicants' findings of no adverse impact on site integrity. If the Board concludes similarly, but

nevertheless considers that a permission should be granted, then it must proceed to Stage Three of the assessment process. Similarly, a negative outcome to that stage, namely that it is concluded that there are no suitable alternative solutions, would trigger a requirement to proceed to Stage Four of the process on grounds of imperative reasons of overriding public importance (IROPI).

As indicated in the guidance, the approach to decision making inherent in the appropriate assessment process is based on the Precautionary Principle. This requires that the conservation objectives of Natura 2000 should prevail where there is uncertainty. Conclusions drawn within the process are to be supported on the basis of objective, scientific evidence. If information or evidence is lacking then adverse impacts should be assumed.

The European Court of Justice ruling in the case Ref. C-172/02, the “Waddenzee” case, judgement delivered on 7th September 2004, provided the following elaboration as to the nature of the assessment required:

“Under Article 6(3) of Directive 92/43, an appropriate assessment of the implications for the site concerned of the plan or project implies that, prior to its approval, all the aspects of the plan or project which can, by themselves or in combination with other plans or projects, affect the site’s conservation objectives must be identified in the light of the best scientific knowledge in the field. The competent national authorities, taking account of the appropriate assessment of the implications of mechanical cockle fishing for the site concerned in the light of the site’s conservation objectives, are to authorise such an activity only if they have made certain that it will not adversely affect the integrity of that site. That is the case where no reasonable scientific doubt remains as to the absence of such effects”.

The test, therefore, is onerous and the burden of proof of certainty of no adverse affect on-site integrity lies with the proponement of the project.

The guidance indicates that the decision as to whether a Natura Site is adversely affected should focus on and be limited to the sites conservation objectives.

The conservation objectives for SAC’s are determined under Article 4 of the Habitats Directive and are intended to ensure that the relevant Annex I Habitats and Annex II Species present on the site are maintained in a favourable condition. The objectives are derived from the qualifying interests, the Natura 2000 standard data form and the management plan for the site.

The conservation objectives for SPA’s are in preparation at present and are to be determined from the special conservation interests and additional species conservation interests of these sites. Article 4 of the Birds Directive indicates that Special Protection Areas (SPA’s) are established on the basis of sites that host bird species listed in Annex I and for regularly occurring migratory species not listed in Annex I as regards their breeding, moulting and wintering

areas and staging posts along their migration routes. To this end particular attention is to be paid to the protection of wetlands and particularly to wetlands of international importance.

The concept of the “integrity of the site” is considered at some length in *Managing Natura 2000 Sites*, EC 2000, as follows:

“It is clear from the context and from the purposes of the Directive that ‘integrity of the site’ relates to the site’s conservation objectives... For example, it is possible that a plan or project will adversely affect the integrity of a site only in a visual sense or only habitat types or species other than those listed in Annex 1 or Annex 2. In such cases, the effects do not amount to an adverse effect for the purpose of Article 6 (3) provided that the coherence of the network is not affected.

On the other hand, the expression ‘integrity of the site’ shows that focus is here on the specific site. Thus, it is not allowed to destroy a site or part of it on the basis that the conservation status of the habitat types and species it hosts will in any way remain favourable within the European territory of the Member State.

As regards the connotation or meaning of ‘integrity’, this can be considered as a quality or condition of being whole or complete. In a dynamic ecological context, it can also be considered as having the sense of resilience and ability to evolve in ways that are favourable to conservation.

The ‘integrity of the site’ has been usefully defined as ‘the coherence of the site’s ecological structures and function, across its whole area or the habitats, complex of habitats and/or population of species for which the site is or will be classified’. (Quotation from UK Department of the Environment Document, 1994).

A site can be described as giving a high degree of integrity where the inherent potential for meeting site conservation objectives is realised, the capacity for self repair and self renewal under dynamic conditions is maintained, and a minimum of external management support is required.

When looking at the ‘integrity of the site’, it is therefore important to take into account a range of factors, including the possibility of effects manifesting themselves in the short, medium and long terms.

The integrity of the site involves its ecological functions. The decision as to whether it is adversely affected should focus and be limited to the site’s conservation objectives”.

10.6.4 Context for AA in relation to the proposed development

The context for AA in the subject case includes the following:

- The unique value and sensitivity of Dublin Bay as a natural heritage resource of international importance and as a recreational resource for the population of Dublin. The value of the Bay in this regard is reflected in the various development plan policies and objectives for the Bay (see Section 3.3.1 above), in the myriad of national, European and international natural heritage designations that apply within the Bay to its constituent parts (see Section 3.4 above) and in other relevant plans produced by Dublin City Council (see Section 3.4.2 above).
- The findings in ECJ Case Ref. C-418/04 that:
 - An area of 4.5 hectare, being a part of the subject development site, is an integral part of the wetland ecosystem and should have been classified as an SPA. This finding being based on an ornithological study carried out in November 2002 by Dublin Bay Watch and that showed; that various species make above average use of the land, which is exposed infrequently; that at least parts of the land are exposed also on less extreme tides and can be used by birds and; that the areas in question are not only used by wading birds but also by sandwich terns, for example, which do not rely on the land being exposed.
 - An area of 2.2 hectares, at the head of the Tolka Estuary and affected in the construction of the Port Tunnel, is an integral part of the entire wetland ecosystem and ought to have been classified as an SPA. The finding being based on; the use of the area as a feeding ground by three of the nine bird species which are decisive for the classification of Dublin Bay as an area of ornithological importance and; that area being used by those species within the average limits which could be expected, if not more.
- The finding in *Sweetman v. An Bord Pleanála, Ireland and The Attorney General, Minister for the Environment Heritage and Local Government, Galway City and County Council* , 2009/99 JR, that the finding of a significant adverse effect on a site does not necessarily equate to an adverse effect on the integrity of the site.
- The applicants express indication that they are not relying on the procedures allowed for in Article 6 (4) of the Habitats Directive and their submission that the Board should not do so either, that is, that it should not consider whether the proposed development should be carried out for imperative reasons of overriding public importance (IROPI) (see Section 9.2.1.21 above).
- All of the most relevant statutory public bodies remain opposed to the proposed development on the basis of its impact on the pSPA – these include in particular, the NPWS as well as Dublin City Council and the ERFB. Opposition is also maintained on the part of An Taisce, Bird Warch Ireland and Dublin Bay Watch and other parties to the application.

10.6.5 Focus of Assessment

The principal Natura 2000 sites within Dublin Bay and of relevance to the appropriate assessment of the proposed development are those referred to at Sections 3.4.1.1 and 3.4.1.2 above. There are:

- South Dublin Bay and River Tolka Estuary pSPA – Site Code 004024.
- North Bull Island pSPA – Site Code 004006.
- North Dublin Bay cSAC – Site Code 00206.
- South Dublin Bay cSAC – Site Code 000210.

These sites are considered in the AA Report submitted by the applicants (see Section 7.2.2.1 above). The focus of the assessment is on the site within which the proposed development would be located, i.e. The South Dublin Bay and River Tolka Estuary pSPA. I consider that this is the correct approach, as in general, the other designated sites are too distant from the development site for any significant or likely adverse effects to arise. I also note that no substantive objection to this approach has been raised by any of the other parties.

10.6.6 Conservation Objectives

As indicated in the DoEHLG Guidance document (see Section 10.6.2 above) conservation objectives for SPA's are still in preparation. It was confirmed on behalf of the NPWS at the oral hearing that no conservation objectives for the South Dublin Bay and River Tolka Estuary pSPA are as yet available. When they are published they will be based on the special conservation interests which include the qualifying species and the additional conservation interests, which include the wetland habitat, as indicated in the Notice of Intention to Designate. The conservation objective is to maintain the favourable conservation status of the site based on these (See Section 9.3.3 above).

There was some discussion at the oral hearing as to the apparent distinction drawn in the Notice of Intention to Designate between “Qualifying Interests” and “Special Conservation Interests” (see Section 3.4.1.1 above for summary of the Notice). Dr. Tierney, for the NPWS, clarified that all interests itemised in the Notice, that is the total of 14 bird species and the wetland habitat, should in effect be regarded as qualifying interests for the site and form the basis for the conservation objectives as outlined above (See Section 9.3.3 above).

This is the approach adopted in this assessment. The potentially adverse impacts arising from the proposed development are assessed against the conservation objective of maintaining the favourable conservation status of all 14 bird species listed and of the wetland habitat within the designated site. In relation to the latter I note that the applicants, in their AA Report, refer to generic conservation objectives published by the NPWS for relevant Annex I habitats including mudflats and sandflats and large shallow inlets and bays.

To clarify, the conservation objectives, therefore, are based on the following:

- Bird Species:
 - Light-bellied Brent Goose
 - Knot
 - Sanderling
 - Bar-tailed Godwit (Annex I)
 - Redshank
 - Common Tern (Annex I)
 - Artic Tern (Annex I)
 - Roseate Tern (Annex I)
 - Oystercatcher
 - Ringed Plover
 - Golden Plover (Annex I)
 - Grey Plover
 - Dunlin
 - Black-headed Gull

- Wetland and Waterbirds:

10.6.7 Predicted Impacts

Having regard to the AA Report submitted by the applicants, the application documentation, including the EIS, and to the submissions of the other parties to the application, the principal impacts arising from the proposed development with the potential to adversely affect the South Dublin Bay and River Tolka Estuary pSPA, or adjacent Natura 2000 sites, relate to the following:

- The physical and permanent loss of habitat resulting from the proposed development.
- Permanent changes to intertidal habitat as a result of long term changes in hydrodynamics.
- The use of the development area by bird species that are qualifying species for the South Dublin Bay and Tolka Estuary pSPA.
- Permanent loss of benthic resource as a result of the proposed development.
- The impact of re-suspension and deposition of sediments as a result of dredging during construction.
- The impact of the re-mobilisation and deposition of contaminated sediments as a result of dredging during construction.
- Other potential significant impacts.

- The impact on fish species and marine mammals.
- In-combination effects.
- Other issues.

10.6.7.1 The physical and permanent loss of habitat resulting from the proposed development

The full development site area, excluding the strip of existing land, amounts to 49.5 hectares, comprising 21 hectares for the reclamation area and 28.5 hectares for the dredge area. By reference to the boundary of the Tolka Estuary element of the South Dublin Bay and Tolka Estuary pSPA, the southern boundary of which essentially follows the northern side of the Liffey navigational channel, I estimate that approximately 45 hectares of the development area falls within the boundary of the pSPA.

The Notice of Intention to Designate the pSPA indicates that the site comprises both intertidal and shallow subtidal habitat (see Section 3.4.1.1 above). A map of the site, issued on 9th May 2008, indicates that the total area of the site is 2,194 hectares.

A particular feature of the site is that it comprises two separate and distinct elements, namely the South Dublin Bay sandflats and the Tolka Estuary, a physically discreet estuarine habitat. The former accounts for the bulk of the geographical area, probably in the region of 75%, with the latter accounting for the remainder.

The total area the subject of the proposed development, therefore, would represent approximately 2% of the total pSPA area and something of the order of 10% of the Tolka Estuary. While this is a somewhat crude measure, it does provide an initial appreciation of the relative scale of the proposed development.

Of more critical importance is the area of actual habitat loss arising from the development given that it comprises part reclamation, part dredge area/berth creation. The physical footprint changes from the proposed development are detailed in Table 4.14 of the EIS. In terms of habitat loss the critical areas can be summarised as follows:

Intertidal

Reclamation Area	13.77 hectares
Dredge Area	9.50 hectares

<u>Total</u>	23.27 hectares
---------------------	----------------

Subtidal

Reclamation Area	7.18 hectares
------------------	---------------

It should be noted that the existing 9.5 hectares intertidal area within the dredge/berth creation would convert to subtidal as a result of berth dredging and existing areas of shallow subtidal within this area would convert to deeper subtidal.

The estimated areas of intertidal habitat within Dublin Bay are set out at section 7.2.3 of the EIS. This indicates an area of 2,013 hectares for Dublin Bay as a whole, with 840 hectares in South Dublin Bay and 288 hectares in the Tolka Estuary (referred to as the Liffey Estuary). The total for the South Dublin Bay and the Tolka Estuary pSPA, therefore, is 1,128 hectares.

On the basis of these areas it is indicated in the EIS that the total of 23.3 hectares (23.27 rounded) of existing very low intertidal area that would be lost would represent approximately 8.1% of the intertidal resource of the Tolka Estuary and 1.2% of the resource for the whole of Dublin Bay (see Section 8.4.19 of the EIS). It would represent approximately 2.1% of the total for the South Dublin Bay and Tolka Estuary pSPA.

The assessment in the EIS also examines the frequency of exposure of the development site, and as such the availability of the feeding resource for birds that it provides. It is estimated that those parts of the site that are exposed are only exposed on around 10% of all low tides, and even then only the lowest tides would expose all 23.3 hectares. This is based on Table 8.3 of the EIS and the relevant conclusions are drawn at section 8.4.24. The conclusion here is that, when frequency of exposure is taken into account, the intertidal area lost equates 0.2% of the Tolka Estuary feeding area. However, it should be noted that the area of intertidal indicated in Table 8.3 is substantially in excess of the area previously referred to at Section 7.2.3 of the EIS and as referred to, and used for, the earlier calculations set out above. Table 8.3 indicates a potential intertidal area of 346.4 hectares at LAT compared to the earlier figure of 288 hectares. The difference is possibly related to the precise level of tide for which the latter figure was calculated, and which is not known, but the discrepancy is not explained.

There is, therefore, a question mark over the 0.2% figure which may be a substantial underestimate.

The AA Report states that a review of the site area and exposure carried out in autumn 2008 with more accurate bathymetry data indicates that the areas of intertidal within the development area are, in fact, lower than the estimates previously provided in the EIS. The area of intertidal to be lost is now calculated as 19.3 hectares, and based on frequency of exposure, now indicated to correspond to less than 6.5% of tides rather than the 10% estimate employed in the EIS (see Section 6.5.3 (2) of the AA Report), the effective loss is now equated to between 0.03% and 0.17% of the total intertidal feeding habitat resource within the Tolka Estuary, depending on the year of tides examined. It is further stated that the assessments are based on the higher figure, 0.17% and “often rounded up”, so that it is a conservative value that is used (see Sections 2.1.2 – 2.1.4 and Table 5 of the AA Report). However, it should again be noted that these calculations are also based on the larger

estimate, 364.4 hectares of the total intertidal within the Tolka Estuary, and therefore, may in fact be underestimates.

The figure of 19.3 hectares for loss of intertidal is not referred to again in the report – all subsequent relevant assessments being based on the earlier calculation of 23.3 hectares (referred to as 23.27 hectares).

Section 5.2.14 of the AA Report refers to comparative percentage intertidal habitat loss of between 0.3% and 0.6% for the Tolka Estuary.

Section 6.5.3 of the report, in considering changes impacting on the benthic community, also refers to the issue of habitat loss. Here, the total habitat loss, intertidal and subtidal, resulting from the reclamation area alone, at 21 hectares is stated to equate to 0.95% of the total area of the South Dublin Bay and Tolka Estuary pSPA (stated as 2,204 hectares). This section also refers to the functional intertidal habitat loss as equating to less than 0.2% of the functional intertidal habitat within the pSPA, the percentage, as indicated above in the EIS, previously attributed to just the Tolka Estuary. It also refers to the loss of 23.27 hectares of intertidal habitat as equating to approximately 1.96% of the intertidal area in the South Dublin Bay and River Tolka Estuary pSPA, based on a Tolka Estuary intertidal area of 346.5 hectares and on a South Dublin Bay area of 840 hectares.

Section 7.2.1 of the AA Report refers to a functional intertidal habitat loss of less than 0.2% for the Tolka Estuary and that it would be less for the pSPA overall.

Section 7.4.1 of the report refers to the development footprint affecting less than 1% of the pSPA and less than 0.2% of the functional intertidal habitat and this is repeated at Section 10.1.2 in the conclusion.

The issue of areas was referred to for the applicants at the oral hearing in the statement of evidence of Ms. John (see Section 8.1.4 of the statement). This indicates that the figure of 288 hectares of intertidal for the Tolka Estuary was based on intertidal down to MLWS which is in the region of 0.7 metres above LAT, and did not include the extreme low intertidal areas down to LAT and within which the whole of the development site exists – all of the development site being below 0.5 metres LAT. This, however, does not correspond to the information in Table 8.3 of the EIS which indicates an uncovered intertidal area within the Tolka Estuary at MLWS (0.9 metres LAT) of 199.2 hectares and an area of 246.2 metres at 0.7 metres LAT. This latter information is also repeated in Table 2 of Ms. John's statement.

The primary issue is the permanent loss of intertidal habitat resulting from the proposed development as the availability of intertidal habitat and the feeding resource it provides for bird populations at this location is the primary reason for the designation of the site in the first place. This is the main focus of the applicants' assessments and the submissions from the other parties. The loss of subtidal habitat below the reclamation area is largely offset, in effect, by the conversion of 9.5 hectares of intertidal within the dredge/berth creation area to subtidal.

Based on the evidence presented by the applicants, and as referred to above, there is a considerable degree of uncertainty and lack of clarity in relation to the calculations of the loss of intertidal area that would result from the proposed development.

Based on an area of 23.3 hectares, the area that is relied upon in the applicants' assessments, and depending on the area of intertidal adopted for the Tolka Estuary, the loss would amount to as much as approximately 8.1% or as low as 6.7% (23.3 hectares as a proportion of 346.4 hectares) of the intertidal resource within the Tolka Estuary. The corresponding figure for the whole of the pSPA, adding a further 840 has of existing intertidal area for South Dublin Bay, would be approximately 2%. By extension this uncertainty and lack of clarity also applies to the calculations presented for functional habitat.

As indicated at Section 8.2.19 of the EIS there is no agreed system for the quantitative assessment of a part of a wetland that is being considered for development. The most appropriate benchmark in this instance is the conservation objectives published by the NPWS for mudflats/sandflats and large shallow inlets and bays as set out at Sections 3.4.3 and 3.4.4 of the AA Report. These are referred to in Ms. Johns, for the applicants, submission to the oral hearing (see Section 7.1.4 of her statement of evidence). These objectives refer, on an all-Ireland basis, to the prevention of the equivalent of 1% of surface area per year and no more than 10% loss in total. In this context, I consider that the potential loss of intertidal habitat arising from the proposed development appears to be significant, and especially so in relation to the Tolka Estuary.

A further measure of the possible extent of intertidal habitat loss is provided in the submission of Ms. Hunt, for Dublin Bay Watch, at the oral hearing (see Section 9.2.9 above). Ms. Hunt states that by reference to the bathymetry maps in the EIS she estimates (examination by eye only) that approximately 20% of the extreme low shore intertidal habitat would be lost within the Tolka Estuary as a result of the proposed development. By reference to the maps referred to, including the most up to date bathymetry map at Figure 5 of the AA Report, I consider that this is not an unreasonable estimate and I note also that the matter was not substantially challenged by the applicants. Ms. Hunt submits that extreme low shore habitats are an integral part of the intertidal system supporting invertebrate recruitment into other areas of the wetland system and, when available, providing feeding habitat for birds. She also indicated that in estimating the area of low shore intertidal habitat to be lost she focussed on the Tolka Estuary as it is an estuarine system whereas Dublin Bay as a whole includes a range of habitat types (see Section 9.7.2 above).

The concept of 'functional habitat' as calculated by the applicants as a means of measuring the relative value of the intertidal habitat within the site, based on duration of exposure, is not accepted by the other parties to the application. The submissions of the NPWS and Ms. Hunt, for Dublin Bay Watch, are of particular relevance in this regard (see Sections 8.2.1 and 8.4.2 above).

Their arguments focus on the complexity of the estuarine system and the potentially enhanced feeding resource that the very low intertidal habitat may present for feeding birds, albeit for short durations of exposure. In this context, the NPWS refer to the correction factor employed as simplistic.

The NPWS also refer to the potential importance of the area in question even when covered by the tide; the fact that estuarine systems, by their nature, are in constant flux with waterbirds distributing according to the tidal cycle, very often moving with the tide edge as feeding grounds become uncovered; that several wading bird species prefer to feed at the tide edge and on the lower shore; that infrequent use of the site could allow for prey re-colonisation by mobile and opportunistic species between periods of use by wading birds; that the development site could provide profitable, albeit, short-term foraging opportunities at times when other feeding patches are less profitable; that the area could be important at times when birds are under pressure to achieve daily intake rates.

Dr. Tierney, for the NPWS, also raised the issue of disturbance to birds from recreational use in other parts of Dublin Bay, such as dog walkers at South Dublin Bay, in cross-questioning at the oral hearing (see Section 9.17.1 above). The suggestion is that the development site area, therefore, given its relative isolation, could be more valuable than suggested. Mr. Nairn, for the applicants, referred to the Tolka Estuary not being used for this type of recreational use because it is soft mudflat, but that it is used for bait digging, a disturbance that birds habituate to.

The arguments advanced by the NPWS are countered by Ms. John, for the applicants, in her statement to the oral hearing where she suggests that areas that are uncovered on a more regular basis must be more important for feeding at the tide edge than areas that frequently do not provide this opportunity at all (see Section 9.2.1.19 above).

However, in response to Mr. Byrne, for Mr. Sweetman querying the issue of the use of the tidal adjustment factor in cross-questioning at the oral hearing (see Section 9.17.6 above), Ms. John, for the applicants, agreed that the methodology was unique (to the author of the original ornithology report submitted with the EIS, Mr. Coveney) and that the applicants had subsequently not relied on it as Mr. Coveney was not available to explain its use. Mr. Byrne indicated that he was unable to find any examples of the technique being used elsewhere.

I consider, therefore, that while it may be accepted that areas of intertidal that are regularly exposed are likely to be more important than those that are infrequently exposed, the direct correlation between duration of exposure and importance is not established.

10.6.7.2 Permanent changes to intertidal habitat as a result of long-term changes in hydrodynamics

This refers to changes to the local hydrodynamic regime as a result of the proposed development which are predicted to result in areas of potential

erosion and deposition in the vicinity of the proposed development and within the Tolka Estuary. Apart from the potential changes to the underlying morphology of the Tolka Estuary such changes also have the potential to impact on habitat availability and the benthic food resource for feeding birds within the pSPA.

The changes are referred to, in particular, at sections 10.0 (Water), 9.0 (Soils and Geology) and 8.0 (Fauna) of the EIS (see Sections 2.5.8 -2.5.10 above).

The principal physical changes predicted are as follows:

- Increase in bed shear stress and hence, potential erosion, to the north and east of the reclamation area near the edge of the dredged area. The areas affected total approximately 10.75 hectares.
- A small area of high bed shear stress is also noted towards the west end of the Tolka Estuary. The area affected is not quantified.
- Decrease in bed shear stress, and hence, potential deposition, in the area where the capital dredge is to be undertaken, in a small area between the port and Clontarf and along the navigational channel. The area affected is not quantified.

In relation to the area to the north and east of the reclamation area where erosion is possible it is stated that the extent of erosion is limited because it is an area already subject to relatively high bed shear stresses and that the “dragon” effect would also be limited. The areas are mainly in the lower intertidal, comprising a relatively coarse substrate of silty sands and gravels. In relation to the area to the west end of the Tolka Estuary it is stated that this is unlikely to erode significantly as the shear stresses are lower and only occur for short periods across peak spring tides and the area is isolated.

Overall the impact from erosion is considered minor negative in relation to the scale of the area affected in the Tolka Estuary. Mitigation measures recommended include monitoring by regular bathymetric surveys. It is stated that if erosion occurs the area could be recharged using material won during maintenance dredging.

It is also indicated that increased bed shear stresses are liable to cause re-suspension of fine material and potentially increase overall turbidity. Erosion of mudflats could also release historic contaminants. It is stated that further information is required on the contamination burdens of the affected areas and that this would be addressed in the Sediment Mitigation Strategy (SMS). The release of large quantities of contaminants is not expected in the short term. A minor negative impact, at worst, is predicted. Monitoring is recommended. It is stated that further sediment sampling, to be provided for in the SMS, may lead to a reconsideration of the level of impact predicted and would focus on developing suitable, proportionate, mitigation measures.

In relation to the benthic resource it is indicated that all the areas subject to change appear to be situated within the lower intertidal and subtidal areas of the Tolka Estuary. The area currently experiences high bed shear stresses with a much higher proportion of coarse, gravely substrates and higher biodiversity (Group C) relative to other areas.

The changes predicted for the area would result in some losses of finer fractions of gravel and fine deposits and the associated epifaunal communities, as well as increased scour of other existing epifaunal communities where increased shear stress is experienced and build up of finer fractions of sediments in the areas of decreased shear stress. However, owing to the areas existing highly dynamic conditions, the existing communities are likely to be relatively tolerant to the high currents and any associated scouring or deposition.

The modelling also suggests that the eroded material is likely to be deposited in the proposed dredge area, on the northern and the eastern sides of the development. The area to the north and east of the port is currently characterised by dynamic sandy sediments and associated polychaete and bivalve fauna (Group D) or coarser, gravely sediments with a richer invertebrate fauna (Group C). The deposition of small volumes of mixed sediments over extended time periods is, therefore, unlikely to have a significant effect on the existing benthic communities within these areas.

The areas expected to be subject to change are limited in extent and their position in the tidal frame is not expected to change, i.e. their degree of exposure and availability for bird feeding.

Overall, the changes are expected to represent a negligible negative impact in relation to the feeding habitat available in the Tolka Estuary. Post development monitoring is recommended.

In response to the EIS, Ms. Hunt for Dublin Bay Watch, submitted that where erosion takes place, this could lead not only to changes in sediment type but also to a change from intertidal to subtidal habitat, thereby representing an effective habitat loss for feeding birds (see Section 6.2.2 above).

The assessment in the AA Report essentially repeats that of the EIS and as referred to above.

The SMS submitted included the results of a grab sample of the wider Tolka Estuary. While all of the samples were at the surface the results indicated relatively low heavy metal concentrations and tended to confirm earlier predictions in this regard (see Section 7.2.2.2 above).

In a further submission Ms. Hunt refers to the assessment in the AA Report as minimal given the context of the prediction that an area of 10.75 hectares of lower intertidal habitat may be affected (see Section 8.4.2 above).

The submission of Mr. Hall, for the applicants, to the oral hearing includes further assessment of the issue. This indicates that the estimated net area likely to be subject to increased bed shear stress is reduced to 7 hectares, as opposed to the 10.75 hectares previously predicted, as one of the areas cited is no longer considered likely to see erosion (see Section 9.2.1.13 above).

The submission of Mr. Saunders for the applicants, to the oral hearing, indicates that erosion attributable to the development is predicted to be minimal and mainly confined to subtidal areas. Effects on intertidal sedimentary fauna is, therefore, not expected to be significant and any subtle changes in shore profile will be accompanied by an equally subtle natural redistribution of fauna to their preferred tidal position, thus maintaining their original availability for bird feeding.

The issue of hydrodynamic changes within the Tolka Estuary likely to arise as a result of the proposed development is considered in the report of Mr. Cawley, Hydro Environmental Limited, attached as Appendix A to this report. The principal conclusions to the report are set out at Section 10.5 above. The conclusion is that the potential impact on the sediment regime within the Tolka Estuary has not been adequately addressed for the reasons as outlined.

It should also be noted that in his report Mr. Cawley refers to the area predicted to be subject to potential deposition (i.e. reduced bed shear stresses), and as shown in Figure 10.17 of the EIS, as easily in excess of 20 hectares. This would be in addition to the areas predicted to be subject to erosion (i.e. increased bed shear stresses), estimated at between 7 hectares and 10.75 hectares.

I am not satisfied, therefore, that the full extent of changes to the sediment regime and consequent impacts on the benthic food resource within the Tolka Estuary as a result of hydrodynamic changes generated by the proposed development has been adequately established.

10.6.7.3 The use of the development area by bird species that are qualifying species for the South Dublin Bay and Tolka Estuary pSPA

This matter was dealt with initially for the applicants in sections 7.0 (Flora) and 8.0 (Fauna) of the EIS, and including the Ornithology Report at Appendix 13 and in the subsequent AA Report. However, the principal author for those reports, Dr. John Coveney, Coveney Wildlife Consulting Limited, was not available to attend the oral hearing and Mr. Richard Nairn, Natura Environmental Consultants Limited, was appointed in his place to provide evidence on birds and ornithology. Mr. Nairn undertook a review of all of the relevant data and made a fresh analysis. It is this analysis on which the applicants now rely. During the course of the oral hearing Mr. Nairn also submitted a supplementary report on further bird counts conducted during the hearing adjournment (see Section 9.3.4 above).

The bird count data on which the analysis is based is summarised in Section 3.3 of Mr. Nairn's full statement of evidence. This includes the full set of bird

counts as detailed in Tables 8.2 and 8.3 of the EIS plus two further counts in late 2008. Taking into account the most recent 2009 bird counts the full set of bird count data can be summarised as follows:

October 1996 – April 1997, 15 counts, Tolka Estuary and development site area.

February 2001 – September 2001, 21 counts, Liffey Estuary and development site.

February 2002 – December 2002, 8 counts, Estuary and development site area.

March 2003 – April 2003, 2 counts, Estuary and development site area.

February 2008 – October 2008, 10 counts, Estuary and development site area.

September 2009 – November 2009, 10 counts, Tolka Estuary and development site.

Table 6 of Mr. Nairn’s supplementary report summarises the peak numbers of non-breeding birds on the development site at low spring tides based on all of the above survey results. On the basis of this table the average of annual peak counts of each non-breeding bird species (wintering birds) cited as a qualifying interest for the South Dublin Bay and River Tolka pSPA and recorded on the development site can be presented as follows:

Species	Number
Light-bellied Brent Goose	23
Knot	<1
Sanderling	-
Bar-tailed Godwit (Annex 1)	43
Redshank	34
Oystercatcher	285
Ringed Plover	<1
Golden Plover (Annex 1)	-
Grey Plover	<1
Dunlin	368
Black-headed Gull	315

Table 7 of the supplementary report indicates peak numbers of birds recorded at low spring tides for the Tolka Estuary during the 2009 counts. On the basis of this table the peak numbers for relevant qualifying species for the pSPA recorded in the Tolka Estuary can be presented as follows:

Species	Number
Light-bellied Brent Goose	626
Knot	1,110
Sanderling	-
Bar-tailed Godwit (Annex 1)	1,248
Redshank	581
Oystercatcher	310
Ringed Plover	-
Golden Plover (Annex 1)	720
Grey Plover	3
Dunlin	940
Black-headed Gull	650

In his statement of evidence to the oral hearing Mr. Nairn assesses the significance of the bird numbers recorded on the development site in a number of ways.

Firstly, it is stated that none of the species that were recorded on the site reached an average peak number which was above the thresholds for all-Ireland importance. This is hardly surprising as the development site is only a part of the designated pSPA and would not be expected, in its own right, to regularly host birds in such numbers. However, it is noted that some of the individual counts did record significant numbers of birds on the site. These were regarded as isolated or infrequent events.

Secondly, the number of birds recorded on the development site is compared to the numbers for each species for the whole of Dublin Bay – the latter being based on I-WeBS counts. Overall it is stated that the average peak numbers of birds present on the development site are less than 1% of the average peak numbers of the same species recorded in Dublin Bay for most species. However, a significant list of exceptions to this is then referred to and these include several of the qualifying species for the pSPA, namely, Brent Goose, Bar-tailed Godwit, Redshank, Oystercatcher, Dunlin and Black-headed Gull. This implies that the average peak numbers of these species recorded on the development site are more than 1% of the average peak numbers of the same species recorded for the whole of Dublin Bay. Given the small size of the development site relative to the whole of the bay, and its infrequent exposure, this would suggest that the site is of considerable significance.

It is accepted, as indicated in the statement, that these comparisons give only a general indication of relative importance as the counts for the development site were mostly carried out at times of extreme low tides while the I-WeBS counts for Dublin Bay are done on high tides. However, this is the evidence as presented.

It is also noted in the statement that the apparent importance of the site for Dunlin is explained by a single brief occurrence of a flock of 2,200 birds on one date in 1997 – otherwise, Dunlin were rarely recorded on site.

Thirdly, it is stated that the development site is not a key part of the habitat used by birds in Dublin Bay or in the pSPA as it is normally covered by water and only rarely are parts of it exposed for use by feeding waders. The area of habitat lost, as a result of the proposed development, would equate to less than 1% of the South Dublin Bay and Tolka Estuary pSPA, and for the limited periods when the site is exposed there is a maximum exposure of suitable feeding areas in the rest of Dublin Bay, including the Tolka Estuary.

The issue of the area of habitat loss has already been examined at Section 10.6.7.1 above. It is accepted that when the development site is exposed so also is the maximum area of lower intertidal exposed across the bay. Nevertheless, it appears that a significant number of birds, of relevant species, select the development site for feeding or for other purposes when it is available.

The assessment also refers to the use of the site by terns, one of the most important qualifying species for the pSPA. It indicates that while 102 common terns were recorded feeding on the site in July 2001, this was an exceptional event. It is indicated that during the months May to September (terns being summer migrants to Ireland rather than winter as is the case for most of the relevant waterbirds) terns occasionally use the development site for plunge-diving into the shallow water around exposed mudflats. The terns involved are thought to be almost certainly those from the important breeding colony on the ESB dolphin on the opposite side of the Liffey channel. It is indicated that terns feed mostly on small fish and that they follow shoals wherever they occur. They are not, therefore, confined to particular areas for feeding.

The assessment of the significance of the development site in the supplementary report, submitted at the oral hearing, focuses on one species, the oystercatcher, as the commonest wader species recorded on the site, in order to demonstrate its lack of significance. However, this assessment is essentially based on the application of the “tidal adjustment” or “functional habitat” methodology referred to at Section 10.6.7.1 above and on which the applicants indicated they were no longer placing reliance.

I would make the following further observations in relation to the bird count data presented.

I consider that the critical test of the development sites significance in terms of bird use should be to consider the numbers of birds using the site in the context of the total number using the South Dublin Bay and River Tolka Estuary pSPA. In this regard, for the relevant wintering qualifying interest species, the Notice of Intention to Designate the pSPA indicates the following average peak numbers for the designated site:

Species	Number
Light-bellied Brent Goose	525
Knot	1,151
Sanderling	349
Bar-tailed Godwit (Annex 1)	866
Redshank	713
Oystercatcher	1,263
Ringed Plover	161
Golden Plover (Annex 1)	1,452
Grey Plover	183
Dunlin	2,753
Black-headed Gull	3,040

Comparing these numbers to those set out earlier for the development site, and accepting as before that the respective counts refer to different periods and tidal conditions and therefore give only a general indication of relative importance, the indication is that, when available, the development site hosts a significant proportion of the total population of some key species within the pSPA. The following percentages are generated:

Light-bellied Brent Goose	4%
Bar-tailed Godwit (Annex I)	5%
Redshank	5%
Oystercatcher	23%
Dunlin	13%
Black-headed Gull	10%

It is accepted that the percentage for Dunlin is essentially due to one recording in 1997 of a flock of 2,200 birds as referred to earlier. The significance of this event is unclear except to remark that it appears that, on that occasion, almost the entire population of Dunlin within the pSPA landed on the development site.

On the basis of these figures it would appear, accepting the applicants contention that the development site loss equates to less than 1% of the area of the pSPA, that the development site is punching significantly above its weight for these key species.

Applying a similar test based on the numbers of birds recorded for the Tolka Estuary in late 2009, as also summarised earlier, generates the following percentages (Dunlin excluded):

Light-bellied Brent Goose	4%
Bar-tailed Godwit (Annex I)	3%
Redshank	6%
Oystercatcher	92%
Black-headed Gull	48%

While again stressing the caveat that must apply to such comparisons, in terms of their general indicative nature, the results here are in some ways extraordinary. In particular, they suggest that at certain times when available, the development site has the potential to attract almost the entire peak population of oystercatcher and about half the peak population of Black-headed Gull that typically use the Tolka Estuary.

A final observation in relation to the bird count data presented is that the numbers of birds using the development site is highly variable. The extreme case of Dunlin has already been referred to. Recorded numbers also vary from zero to 200 for the Bar-tailed Godwit, from 2 to 110 for the Redshank, from zero to 42 for the Brent Goose, from 153 to 455 for the Oystercatcher and from 250 to 396 for the Black-headed Gull.

The submissions on behalf of the NPWS, Bird Watch Ireland, Dublin Bay Watch and Dublin City Council are also of particular importance in relation to this issue. In this regard it should be noted that Mr. Nairn's statement of evidence to the oral hearing addresses some of the issues raised in the earlier written submissions lodged on behalf of those bodies.

An important issue raised is the question of the adequacy of the data on birds as presented. As indicated the total data set was further supplemented by further bird counts conducted in late 2009 during the oral hearing adjournment period. The assessment carried out above is on the basis of the data as provided on behalf of the applicants.

In relation to the NPWS (see Sections 5.2, 8.2.1, 9.2.3, 9.3.3, 9.16.1 and 9.17.1 above), I note, in particular, the following issues raised:

- The development site supports high densities of several species listed as of special conservation interest in at least one of the two SPA's in Dublin Bay.
- It remains unclear how significant is the potential impact of habitat loss on each of the bird populations.
- Not enough surveys have been done when the site has been exposed.
- It could not be categorically agreed that an area that is infrequently exposed is of less value than one that is frequently exposed.

In relation to Bird Watch Ireland (see Sections 6.2.1, 8.4.1, 9.2.4, 9.11.1 and 9.11.2) I note, in particular, the following issues raised:

- It is not believed that the survey was robust enough to identify whether bird use was rare or just recorded insufficiently.
- When the applicants' data (peak counts low tide) are compared to I-WeBS data (high tide) for the same periods, the proportions of relevant species using that part of Dublin Bay is quite significant. [In this regard, I would

refer the Board to the tables included at the end of the powerpoint presentation made at the oral hearing].

- The applicants' data shows that the development site is being selected by certain species even when other areas are available.

In relation to Dublin Bay Watch (see Sections 6.2.2, 8.4.2, 9.2.9, 9.7.1 and 9.7.2) I note, in particular, the following issues raised.

- When available the reclamation site has been found to support a higher density of birds than the rest of the Tolka Estuary.
- It seems likely that, when available, the quality of the feeding habitat at the reclamation site is good when compared to the rest of the estuary and that this is linked to limited exposure.
- Co-ordinated count data shows that, when available, a high percentage (given the size of the site) of a number of species have concentrated on the site relative to the Tolka Estuary as a whole

In relation to Dublin City Council (see Sections 8.1, 9.2.2, 9.5.1, 9.14.1 and 9.15.1), I note, in particular, the following issues raised.

- The variability of the bird populations observed undermines the applicants' conclusions as to the importance of the development site to protected species and casts doubt on the completeness of the sampling method.
- Alternatively it may reflect the true nature of the site and of Dublin Bay as it offers a complex range of habitat choices over a dispersed area to a variety of species.
- The intermittent and temporal nature of feeding/resting by birds is not a valid argument for downgrading the sites importance.
- The data suggests that some of the "one-off" occurrences are actually frequent events.
- It is accepted that the frequency of use of a site is a factor to consider in determining whether or not a particular area is valuable.

In conclusion, I do not consider on the basis of the evidence presented, that the low level of significance of the development site for use by birds that are qualifying species for the South Dublin Bay and Tolka Estuary pSPA, and as postulated on behalf of the applicants, has been established. The balance of evidence is that the development site may be of significantly greater importance than suggested.

10.6.7.4 Permanent loss of benthic resource as a result of the proposed development

This refers to the permanent loss of the benthic feeding resource for birds within the development footprint.

Within the footprint of the proposed development the total loss of relevant habitat would be 21 hectares, i.e. the proposed reclamation area. As indicated in Section 10.6.7.1 above this would be made up of 13.77 hectares of intertidal habitat and 7.18 hectares of shallow subtidal habitat. As noted the existing area of intertidal habitat within the proposed dredge/berth creation area, 9.5 hectares, would convert to subtidal habitat and the existing areas of shallow subtidal within this area would convert to deeper subtidal.

The principal issue raised in relation to the loss of this habitat focuses on whether or not the existing benthic community within the development site is characterised by a higher diversity and abundance of fauna compared to the rest of the Tolka Estuary. This is raised, in particular, in the submissions of Ms. Hunt, for Dublin Bay Watch (see Sections 6.2.2, 8.4.2 and 9.2.9 above), of the NPWS (see Section 8.2.1 above) and by Dublin City Council (see Section 8.1 above).

The analysis carried out of the benthic feeding resource is summarised in Section 8.0 (Fauna) of the EIS and in Section 5.3 of the AA Report. It included a survey of the development site and the surrounding Tolka Estuary. The analysis characterises the sampled area in terms of species abundance, diversity and evenness and determines any similarities or differences between samples and groupings of communities or species. It also included a particle size analysis to establish the spatial distribution of sediment types within the study area and to relate these to the identified groupings of communities/species. Four such groupings were identified, A, B, C and D, and their distribution is illustrated on Fig. 9 of the AA Report.

The overall conclusion is that the study area is characterised by low species diversity. The communities present are stated to be characteristic of the fine, mobile sediments within impacted or disturbed estuarine areas.

Within this context, however, it is noted that the Group C samples indicated a higher biodiversity and abundance than the other groups and it is on this finding that the questions raised by Dublin Bay Watch, NPWS and Dublin City Council are focussed.

The significance of the Group C samples is that they were taken from an area that includes a significant proportion of the proposed reclamation site and the dredge/berth creation area, as well as an area that extends further to the east (see Fig. 9 of the AA Report). The underlying contention on the part of NPWS/Dublin Bay Watch/Dublin City Council is that this supports the proposition that the development site is a more important resource for feeding birds than as suggested by the applicants. Specifically, it is suggested that the occurrence of higher biodiversity within the lower intertidal may be linked to

the fact that the area is not uncovered on all tides and, hence, not subject to regular bird predation.

The analysis indicates that the diversity of species within the Group C communities is characteristic of the coarser sediments present within these parts of the development site. Of particular note is the presence of gravel which, when on the surface, affords colonisation opportunities for non-infaunal species, increasing individual abundance, species richness and therefore biodiversity. It is stated that the sample stations confined to the reclamation site contained a proportionately high number with a high gravel content which has elevated the local diversity values.

The responses to the issues raised are set out by Mr. Saunders and Ms. John, for the applicants, in their statements of evidence to the oral hearing (see Sections 9.2.17 and 9.2.19 above). The basic argument advanced is that the raised biodiversity values are only slightly higher than those of the surrounding estuary; that the site, in common with the surrounding estuary, is not actually a site of high biodiversity and; that the species recorded within the Group C samples are predominantly common species that are well distributed around the Tolka Estuary or are not available to or known as feed items for birds. It is further suggested that the relative abundance of species encountered is indicative of localised pollution impacts and that these species concerned have a strong ability to quickly re-establish elsewhere. In relation to the fact that the areas in question are not uncovered on all tides it is stressed that even when covered by water infaunal invertebrates will be under constant predation pressure from a range of sub-littoral species.

It is difficult to be definitive in drawing conclusions in relation to this matter. However, on balance, the evidence is of higher biodiversity and abundance of benthic species within the development site associated with the coarser gravel substrates that also extend eastwards from the site area, and which may be of even more significance given the overall low level of species diversity reported for the Tolka Estuary as a whole, and that the proposed development would result in the permanent loss of a significant proportion of this relatively enriched habitat from the estuary.

There does also appear to be a coincidence, even if not a direct correlation that can be proven, between the relatively elevated biodiversity and abundance and the evidence as illustrated at Section 10.7.6.4 above of significant bird use of the development site area. I do not consider, therefore, that it has been established by the applicants that the loss of this benthic resource would not be significant.

10.6.7.5 The impact of re-suspension and deposition of sediments as a result of dredging during construction

This refers to the creation of a sediment plume during the capital dredge operation that has the potential to impact, in particular, on water quality and on benthic fauna within the Tolka Estuary, and thereby indirectly affecting feeding birds.

This issue is dealt with for the applicants, in particular, at Sections 10.0 (Water) and 8.0 (Fauna) of the EIS, (see Sections 2.5.10 and 2.5.8 above), in the AA Report at Sections 6.2 and 6.5.3 (see Section 7.2.2.1 above) and in submissions to the oral hearing of Mr. Hall and Ms. Pendle (see Sections 9.2.1.13 and 9.2.1.14 above). The issue is raised, in particular, by Ms. Hunt, for Dublin Bay Watch (see Sections 6.2.2 and 9.2.9 above).

In relation to the re-suspension of sediments it is indicated in the AA Report that the dredging of the berths would put fine sediment into suspension in the water column. Hydrodynamic modelling indicates that on flood tides, suspended sediment concentrations are predicted to move northwards into the shallow water north of the port, i.e. into the Tolka Estuary and the pSPA. On the ebb tides, the extent of the sediment plume is predicted to be insignificant and it generally moves out into Dublin Bay. The concentration of sediment is at its highest at the point of release, i.e. where the dredger is working, and dissipates quickly as it moves away from this area, with levels predicted to drop to below background concentrations within 200-300 metres. Mitigation is proposed through restricting dredging in the northern third of the eastern berth area to ebb tides only.

In relation to sediment deposition, and without mitigation, it is predicted that some deposition is likely to occur within 200-250 metres to the north/north-west of the development site, within the pSPA. It is stated that this could affect a maximum area of 3.2 hectares and result in the accretion of up to 25 millimetres over the seven month dredge period. However, by only dredging the northern third of the eastern berth area on the ebb tide, the large majority of the re-suspended sediment would be deposited within the areas to be dredged themselves or within the main Liffey Channel.

In relation to water quality the EIS predicts, given the limited extent and short term duration of elevated levels of suspended sediment concentrations, a minor negative impact.

It is indicated in the AA Report that smothering by sediments put into suspension during the dredge operation has the potential to impact on benthic communities and cause changes to species composition. However, the faunal communities present in those areas are stated to be representative of those associated with fine, mobile sediments and, consequently, are tolerant of increases on turbidity and sediment deposition. In addition, it is indicated that the mitigation measures of dredging the eastern berth pockets on the ebb tide only would effectively prevent any impact occurring.

The sediment plume modelling was also considered in the report of Mr. Anthony Cawley, Hydro Environmental Limited, attached as Appendix A to this report. The relevant conclusion is set out at Section 10.5 above and this confirms the primarily localised impact and effectiveness of restricting dredging works east of the reclamation area to periods of ebbing tide.

I am satisfied, therefore, that the overall impact within the pSPA is unlikely to be significant.

10.6.7.6 The impact of the remobilisation and deposition of contaminated sediments as a result of dredging during construction

Sediment sampling analysis conducted for the EIS indicated elevated levels of heavy metal contamination across the proposed dredge/berth creation area – in particular elevated levels of copper, nickel and arsenic were widespread with other metals, such as mercury, lead and zinc, detected at high levels within particular samples (see Section 2.5.9 above). The re-suspension and subsequent deposition of such contaminated sediments that could occur during the capital dredging works has the potential to negatively impact on water quality and benthic fauna within the Tolka Estuary with an indirect effect on qualifying interest bird species.

As indicated in the EIS (see Section 9.0, Soils and Geology), the sediment sampling methodology was agreed with the Marine Institute prior to survey. In all 25 samples were taken, seven being cored to depths of one to two metres, and the remainder being surface samples.

It is indicated that there are currently no statutory published quality objective guideline values in Ireland against which to assess the chemical burden of marine sediments. However, the Marine Institute has published guidelines pertaining to the suitability assessment of dredged material for disposal in Irish Waters – “Guidelines for the Assessment of Dredge Material for Disposal in Irish Waters”, April 2006. The guidelines identify two action levels. Results above Action Level 1 are sufficient to categorise the sediment as Class 2, defined as “marginally contaminated”. Results above Action Level 2 lead to the category of Class 3, defined as “heavily contaminated, very likely to cause biological effects/toxicity to marine organisms – alternative management option to be considered”.

By reference to the Marine Institute Guidelines most of the metal contaminants were just above Action Level 1 and, therefore, were not considered to present a problem. The main concern identified was the copper contamination since a significant number of the values were above Action Level 2, mostly from surface samples but including one sample at one metre depth. Additionally, the core sample (one metre) at Station 21 had above Action Level 2 values for mercury, lead and zinc, as well as copper. Core samples at Stations 8, 22b and 23 also showed a wider spectrum of metal contamination, although none above Action Level 2.

As signalled in the EIS the issue was to be addressed in a Sediment Mitigation Strategy (SMS) and this was subsequently submitted to the Board as an Appendix to the AA Report (see Section 7.2.2.2 above).

The SMS included additional sediment sampling, both across the wider Tolka Estuary and within the development site. The former indicated low background levels of metal contamination and showed the potential for negative impacts within the pSPA. The latter, which comprised a re-sampling for copper, at surface only, confirmed the elevated levels of the earlier survey. Given these results, and following confirmation from the Marine Institute that

materials containing high copper levels would not be suitable for dumping at the offshore disposal site, the strategy proposed that all of the material proposed for dredging, including the contaminated surface material could, if necessary, be used as fill material within the reclamation area. The contaminated sediment would be fixed or stabilised, probably through mixing with cement or clays, the precise detail to be subject to a management plan to be put in place by the contractor.

It is indicated in the SMS that the method of dredging will be key to mitigating impacts. One method, cutter-suction dredging is identified as effective in minimising the re-suspension of sediment. It is proposed that the dredge arisings would be pumped into the reclamation works area through a pipe, thus removing spill losses from the barges and reducing the concentration of re-suspended sediment levels. Bunds and temporary dams within the reclamation area will allow the material to settle prior to treatment and stabilisation, with the discharge of latent water to be controlled by weir. Quality controls would be agreed with the NPWS, including a trigger mechanism to cease works if necessary.

As indicated at Section 10.6.7.5 above dredging of the northern part of the eastern berth area would be restricted to the ebb tide only so as to prevent contaminated material being deposited within the Tolka Estuary pSPA.

It is indicated that it is considered that material at depth is unlikely to display similar contamination levels to those encountered at or near the surface as deeper sediments would pre-date port development. It is proposed that more detailed, at-depth sampling, will be undertaken as part of the Foreshore Licence Application process, to provide clear quantities of potential contamination or to clarify that levels are below threshold so as to widen the use and disposal possibilities for the material.

Concerns in relation to this issue are raised, in particular, in the written submissions on behalf of Dublin City Council, NPWS and An Taisce (see Sections 8.1, 8.2.1 and 8.2.3 above). These highlight the significant risks attached to the potential release of contaminants as a result of the proposed works.

The NPWS submits, as the management strategy for the identified Class 3 sediments is subject to further development and may change significantly, that neither the EIS nor the AA process can be regard as complete.

This latter issue was also raised by Mr. Byrne, for Mr. Sweetman, with the applicants in cross-questioning at the oral hearing (see Sections 9.17.4 and 9.17.6 above). Ms. Pendle, for the applicants, indicated that the further sampling carried out, all at the surface, was all that could be done within the time available. She indicated that the real concern is in relation to surface areas and that the sampling carried out to date was agreed with the Marine Institute as suitable for EIS purposes. She also indicated that the mitigation measures proposed are on the basis of the worst case scenario whereby the entirety of the sediment is contaminated.

There are no specific guidelines as to what level of investigation, data collection or analysis is appropriate for EIS or AA purposes. This will depend on the nature of the individual project proposed and the sensitivity of the receiving environment and will be informed through relevant consultation and scoping. Given the extreme sensitivity of the receiving environment in this case, most particularly the location of the proposed development within a Natura 2000 site, the history, including ECJ Case Ref. C-418/04 pertaining to that site and the lengthy lead in time to the current application, including the lodgement of an application for a Foreshore Licence as far back as the year 2000 and the further opportunity afforded by the Board's request for further information, I am somewhat surprised that at least a small number of additional core samples were not undertaken in order to establish a more accurate profile of the levels of contamination and of the full quantity of sediment affected.

While it is asserted by the applicants that contaminant levels at depth are unlikely to be as high as those at or near the surface, and it is accepted that this is probably the case, it is nevertheless noted that the level of copper detected in sample Station 21, at one metre depth, was higher than most of the higher level surface recordings in the survey. As noted previously this is also the sample station at which above Action Level 2 values for mercury, lead and zinc were recorded. It is also noted that the SMS expressly states that the results of the initial sediment analysis carried out for the EIS were considered unusual in relation to previous sampling carried out around the port and, in particular, by reference to a previous survey in 2000 over a similar area that did not detect any high levels of copper. By reference to Appendix 14 to the EIS, it is noted that that survey comprised surface samples only.

Whilst it is accepted that the applicants are in ongoing consultation with the Marine Institute and that further sampling will be carried out for the Foreshore Application, and that this is also likely to be required for the Waste Licence Application and any Dumping at Sea Permit that may be sought, I consider the absence of clarity in relation to the full level and extent of contamination at this stage to be a significant omission for the purposes of AA in this case and which precludes the establishment of the necessary level of certainty required within this process. In this regard, it is clear from the exchange at the oral hearing between Mr. Byrne, for Mr. Sweetman, and Mr. Dunsire and Ms. Pendle, for the applicants, that the actual extent of contamination and therefore, the volume of material required to be stabilised for use within the reclamation area, could have significant knock-on effects on the precise method adopted for managing the material, including the specific type of dredging employed and the duration of the dredge operation.

I would also draw the Board's attention to the conclusion in the report of Mr. Anthony Cawley, Hydro Environmental Limited, in relation to this issue and as set at Section 10.5 above.

10.6.7.7 Other Potential Significant Impacts

Other potential significant impacts identified as arising from the proposed development include:

- Disturbance (noise and vibration) and dust emissions during construction that have the potential to cause impacts on bird species.
- Disturbance during operation from increased port activity, and including additional lighting, has the potential to impact on bird species.

These issues are referred to, in particular, in Section 8.0 (Fauna) of the EIS and in the AA Report at Sections 6.4 and 6.6.18 to 6.6.28. Concerns are raised, in particular, on behalf of Dublin City Council (see Section 8.1 above).

The principal noise impact during construction would arise from piling for the construction of the southern and eastern quay walls. The evidence is that birds habituate quickly to such non-threatening disturbances. In relation to the tern colony on the ESB Dolphin site it is indicated that piling would occur no closer than 380 metres from the colony and commence after the nesting season (September). As the piling progresses the distance would increase such that by the time the terns begin nesting (March/April) the piling would be over 500 metres away. Given the existing levels of disturbance associated with port activities and the short term nature of construction activities the overall conclusion is that disturbance due to construction would have a negligible impact on bird populations in the area.

In relation to dust it is indicated that there is the potential for dust emissions from construction activities to cause significant nuisance and soiling within 100 metres of dust raising activities. However, it is also indicated that the intertidal areas closest to the development site are uncovered infrequently and, therefore, would be exposed to dust emissions during very limited periods only. Also it is noted that a number of specific mitigation measures are proposed in order to minimise dust emissions (see Section 4.11.64 of the EIS). It is expected, therefore, that dust emissions would be kept to an extremely low level and would not impact negatively on the pSPA.

In relation to port operational activities, it is clear from the existing large populations of birds within Dublin Bay, including the areas immediately adjacent to the existing port, that birds habituate to the associated port activities and disturbances and that there is no reason to expect a different response to the proposed facilities.

In relation to the potential impact from lighting associated with the proposed development, this is addressed, in particular, by Mr. Nairn, for the applicants, at the oral hearing (see Sections 9.2.1.18 and 9.17.6 above). He refers to the existing overspill of street lighting around Dublin Bay onto adjacent mudflats in the winter period and that there is no evidence that it is detrimental to birds on their habitats. In fact, it is suggested that it may be beneficial in enabling some birds to feed for longer.

On the basis of the evidence presented, and having regard to relevant mitigation measures as proposed, I am satisfied that none of these potential impacts is likely to be significant in relation to the bird populations within the pSPA.

10.6.7.8 The Impact on Fish Species and on Marine Mammals

Fish

The initial assessment of the fish resource as presented in the EIS (Section 8.0 - Fauna) was based on desk based study of existing sources of information. This also provided the basis for the assessments in the AA Report (see Sections 3.5, 6.6.14 – 6.6.17 and 6.7 of that report). In response to the report of the ERFB (see Section 8.2.4 above) Mr. Velterop's, presentation for the applicants, to the oral hearing included details of real time fish survey conducted to verify baseline conditions (see Section 9.2.1.15 above). This presentation also sought to address the deficiencies in the approach in the EIS and in the AA Report to the assessment of impacts on fisheries as cited by the ERFB.

Mr. Velterop indicated that the additional baseline survey results support the initial desk based assessment as set out in the EIS. As the area around Dublin Port is not considered an important area for commercial fisheries, the baseline characterisation focused on reviewing natural and migratory fish.

The importance of the Liffey system in supporting Atlantic salmon, a species listed under Annexes II and V of the Habitats Directive, is again particularly noted.

The results of the fish survey confirm a range of fish species that are common to other North West European estuaries, the most common being gobies, the most common bottom living fish in most estuaries.

The primary potential significant construction impacts considered relate to; capital dredging disturbance; suspended sediment; noise and; light.

In relation to the capital dredge there is potential for entrainment of fish species by the dredger head. The impact is considered to be negligible given that large fish species, with higher swimming speeds, will be able to escape the movement of the dredger head and only small, vulnerable benthic species such as gobies, with slower swimming speeds, would be impacted. However, these species are widely distributed, breed rapidly, have huge population sizes and are not commercially exploited.

In relation to suspended sediment increased concentrations above the natural range has the potential to impact on fish, and salmonids in particular. Associated contaminants could also potentially impact fish species. Overall impacts are considered to be negligible for the following reasons.

Estuarine fish species are by their nature tolerant to changes in levels of suspended sediments and water quality, as these may naturally change significantly in response to tides, storms and heavy rainfall. Fish have been shown to display avoidance responses to increased levels of suspended sediments and turbidity and to dredging operations. High concentrations of suspended sediments are not predicted for the Liffey Channel. Metal contaminants associated with the dredge sediments are not present in concentrations high enough to make them dissociate with their preferential binding to finer sediment fractions and would, therefore, not be released during short term re-suspension. The SMS has the objective of minimising the extent of the sediment plume and the construction programme provides for dredging activities to be carried out outside the peak salmonid migratory periods.

In relation to noise the principal issue is the effect of piling noise on migratory salmonid species. Whilst it is acknowledged that there is still considerable uncertainty about the effects of piling noise on migratory fish species, it is considered unlikely to have a significant impact in the context of an existing busy commercial port. Given the relatively short duration of piling activity (approximately one year), that no piling would be undertaken during the peak migratory period and, as noted in the EIS, the application of 'soft-start' techniques, no significant impact is anticipated.

In relation to light this is not considered to have any significant impact due to the relatively shallow penetration of light into the water body.

The primary potential significant impacts arising from the operation of the proposed development are considered to relate to the permanent loss of intertidal and subtidal habitat.

In relation to the permanent loss of habitat the concerns of the ERFB are particularly noted. However, the area involved, that is the 21 hectares proposed for reclamation, is small relative to the available fish habitat across the whole of Dublin Bay. It is also considered that the industrialised estuaries of the Tolka and Liffey are likely to be less important as nursery and feeding areas for wider fish populations compared to other parts of the bay. The loss of habitat is not predicted to have any impact on salmonid smolt migrations.

The consequential impact of the loss of fish habitat and the impact arising from elevated suspended sediments on fish populations on feeding waterfowl is considered at sections 6.6.8 – 6.6.12 and 6.6.14 – 6.6.17 of the AA Report. The key bird species in this regard is terns who feed on small fish and sand eels. The conclusion is that given that the development site is not considered to be an important nursery area for fish, that the loss of 21 hectares is not likely to result in a significant effect on wider populations of juvenile fish species, and that the evidence is that terns are not restricted to particular areas for feeding, including evidence that birds follow in the wake of shipping vessels for feeding, it is not considered that the impact on the feeding tern population would be significant.

On the basis of the evidence presented I am satisfied that no significant consequential impacts are likely to arise for any of the qualifying interests for the South Dublin Bay and Tolka Estuary pSPA.

Marine Mammals

In response to the submission of the NPWS in relation to the absence of consideration of potential impacts on marine mammals in the EIS, Mr. Velterops' witness statement to the oral hearing also included details of a rapid baseline data collection study for marine mammals and an assessment of the issue.

It is indicated that only harbour porpoise, bottlenose dolphin and grey and common seals have been identified regularly in Dublin Bay.

It is noted that all cetacean species (whales, dolphins, porpoise, etc) are protected under Annex IV of the Habitats Directive and that harbour porpoise and bottlenose dolphin are also listed under Annex II of the Directive. In relation to the latter the NPWS are currently considering the designation of Dublin Bay as an SAC for harbour porpoise.

It is also noted that both grey and common seals are protected under Annex II of the Habitats Directive. The nearest haul out sites is identified at Lambay Island and Skerries for the common seal and at Dalkey Island for the grey seal.

The key potential impact identified is from piling during construction.

Based on the existing noise levels associated with the existing port it is considered unlikely that extensive marine mammal activity occurs in close proximity to the port or the main shipping lane. Given the mobility of both pinnipeds (seals) and cetaceans (whales), the distances from the proposed development and piling locations and existing noise/activity levels associated with the port, it is considered that no significant impact is likely.

The evidence presented by Mr. Velterop, particularly in relation to the occurrence of seals within Dublin Bay, was countered by Mr. Price, of the Irish Seal Sanctuary, at the oral hearing (see Section 9.2.7 above) and the matter was pursued further in cross-questioning (see Sections 9.11.3 and 9.11.4 above). The matter was also referred to in cross-questioning by Ms. Harris, for Dublin City Council (see Section 9.15.1 above).

The evidence is that there is a significant seal haul out site on North Bull Island, at Sutton that may also be a breeding site and that seal activity in Dublin Bay is likely to be significantly greater than as suggested by Mr. Velterop. The position in relation to the harbour porpoise is less clear but the possibility of SAC designation for the species would indicate that Dublin Bay is a location of some importance.

While there are clearly shortcomings in the assessment of the impact on marine mammals as presented in the application, I am still of the view that the

essential conclusions reached, and as summarised above, are probably correct. In this regard, I note, in particular, that the nearest seal haul out site on North Bull Island is approximately five kilometres from the development site. I would also note that, for the purpose of this appropriate assessment, there are no likely significant consequential impacts for any of the qualifying interests of the South Dublin Bay and Tolka Estuary pSPA.

10.6.7.9 In-Combination Effects

Article 6(3) of the Habitats Directive requires the likely significant effects of a project on a Natura 2000 site to be considered in combination with other plans or projects.

The ‘Managing Natura 2000 Sites’ guidance document advises that, although already completed plans or projects are excluded from the assessment requirements of Article 6(3), it is important that some account is still taken of such plans or projects in the assessment if they have continuing effects on the site and point to a pattern of progressive loss of site integrity. Plans or projects that have been approved in the past, but have not yet been implemented or completed, should be included in the in-combination provision and it is also advised as appropriate to restrict the in-combination provision to either plans or projects that have been actually proposed.

The in-combination assessment is set out at Section 8.0 of the AA Report. The assessment considers the following projects: -

Past/Completed Projects

- Dublin Bay Pipeline Project
- Dublin Port Tunnel

Present/Future Approved Projects

- North City Arterial Watermain and Clontarf Flood Defences
- Dublin Waste to Energy Project
- Telecoms Interconnector Cable
- Dollymount Promenade and Coastal Protection Project

It is indicated that other projects were also considered but they were not identified as having or potentially having an adverse effect on Natura 2000 sites within Dublin Bay. The full list of these projects is set out at Section 4.13.1 of the EIS.

In relation to the past/completed projects it is stated that neither of these projects has been shown to have had a significant adverse effect on Natura 2000 sites.

All of the effects arising from the Dublin Bay Project Pipeline were construction related and, therefore, of a short term nature.

In relation to the Dublin Port tunnel it is argued that the finding in ECJ Case C-418/04 that the 2.2 hectares of intertidal mudflat at the head of the Tolka Estuary that was lost as a result of the development should have been classified as a part of the SPA is a different and separate issue to the question of whether or not its loss adversely affected the integrity of the SPA and that the Court did not consider this matter. It is also argued by reference to the low numbers of birds that used the Dublin Port Tunnel site and by reference to I-WeBS bird count data that indicates that most of the relevant bird species in Dublin Bay have increased in numbers since the construction of the tunnel, that the evidence is that the loss of the area has not had an adverse impact on bird populations for which the SPA is designated.

While I would accept the basic thrust of the argument as advanced, and noting that there is no contrary evidence before the Board, it is nevertheless difficult not to conclude that the proposed development, in combination with the Port Tunnel project, would point to a pattern of progressive loss of relevant habitat, at least within the South Dublin Bay and Tolka Estuary pSPA, if not necessarily of site integrity. However, I do not consider the matter to be decisive in terms of the appropriate assessment.

In relation to the present/future projects considered most of the potential impacts identified relate to construction phases and would, therefore, be short term. Appropriate mitigation measures would minimise any such impacts. No in-combination issues for the South Dublin Bay and Tolka Estuary pSPA are considered to arise.

It should be noted that the Dublin Docklands Development Authority (DDDA) have requested that the planning scheme for Poolbeg should be considered for the purposes of the in-combination assessment (see Section 8.2.6 above). This scheme is not included in the assessment contained in the AA Report but is included in the list of projects at Section 4.13.1 of the EIS and which were considered not to have any adverse effect on Natura Sites within Dublin Bay.

The DDDA is currently considering submissions received from the public in relation to the published Draft Poolbeg Planning Scheme. The scheme, together with all relevant accompanying documentation will then be submitted to the Minister for approval.

The draft scheme provides a framework for the development of significant areas of the Poolbeg Peninsula for residential, accommodating a population of approximately 10,000 persons, and employment, with up to 16,000 work places.

The draft scheme is accompanied by an EIS and this document includes an appropriate assessment report. Potential impacts on the integrity of adjacent Natura 2000 sites identified include the risk of disturbance to key bird species that use the SPA's and SAC's for feeding, roosting or breeding, particularly during construction, but also as a result of the development from noise, lighting and the increased movement of people. The permanent loss of an area of artificial grassland currently used for feeding by Brent Geese, a qualifying

interest species for the pSPA, is also referred to. In relation to this latter issue mitigation, through the provision of mown grassland within the planning scheme, is recommended. Overall, it is considered that adherence to the mitigation measures incorporated into the DDDA Masterplan 2008 will ensure that the integrity of all of the Natura 2000 sites is maintained.

Given the location of the planning scheme lands immediately adjacent to the South Dublin Bay element of the South Dublin Bay and Tolka Estuary pSPA, the very substantial quantum of development envisaged in the scheme and the proposals for opening up access to the south shore of the peninsula onto Sandymount Strand through the creation of a beach park, I would consider that the main likely permanent and ongoing impact of the scheme on the pSPA would result from potential disturbance to feeding/roosting/breeding birds from the increased numbers of people using the area. This aspect, while noted as referred to above, is not given any further consideration in the assessment. Nor is the potential impact on the important tern breeding colony on the ESB Dolphin located immediately off-shore on the northern side of the Poolbeg Peninsula.

To the extent that the implementation of the planning scheme might put increased pressure on the bird populations utilising the pSPA there is potential for in-combination effects to arise in association with the proposed Dublin Gateway Project. However, it is not possible to quantify the scale or magnitude of such effects and, therefore, whether or not they could be considered to amount to an adverse impact on site integrity. Again, I do not consider the matter to be decisive in terms of this appropriate assessment.

I am satisfied that there are not any other projects or plans that should be considered in this part of the assessment.

10.6.7.10 Other Issues

Ms. Harris, for Dublin City Council, referred at the oral hearing to the reference in the supplementary report on further bird surveys, submitted by Mr. Nairn, for the applicants, to the presence of the sand mason worm on the site (see Section 9.14.1 above). Its presence was, in fact, also noted in the EIS (Section 8.2.56) and in the AA Report (Section 5.3.4). It was included in the identified Group C benthic community of relatively higher biodiversity within the area of coarser sediments and it was noted that it adds stability to the sediments.

Ms. Harris submitted that the significance of the sand mason worm is that it might indicate the presence of a reef, which is an Annex I Habitat under the Habitats Directive. She suggests that the nature and extent of the sandworm habitat may require further investigation.

There is no further evidence before the Board in relation to this issue. If it was to be established that the development site included an Annex I habitat and warrants further investigation, then it may be considered to warrant designation as an SAC. While this may not necessarily have implications for

the integrity of the pSPA it does introduce a further element of doubt in terms of the impact of the proposed development.

10.6.7.11 Conclusion to Appropriate Assessment

The principal findings to this assessment can be summarised as follows: -

- Neither the extent nor the significance of the permanent loss of wetland habitat from the South Dublin Bay and Tolka Estuary pSPA arising from the proposed development is clearly or adequately established. The balance of evidence is that the habitat loss may be of greater significance than as contended by the applicants.
- The full extent of permanent and long-term changes to the morphology, sediment regime, and consequent impacts on the benthic food resource, within the Tolka Estuary as a result of the hydrodynamic changes generated by the proposed development has not been adequately established.
- The low level of significance of the development site for use by bird species that are qualifying interests for the South Dublin Bay and Tolka Estuary pSPA, and as contended on behalf of the applicants, has not been established. The balance of evidence is that the development site may be of significantly greater importance than suggested.
- The significance of the permanent loss of benthic food resource as a result of the proposed development has not been adequately established. The balance of evidence is that the loss may be of greater significance than as contended by the applicants.
- The extent of contamination within the sediments in the dredge/berth creation area has not been adequately established.

Both individually and cumulatively I consider that these findings constitute significant scientific doubt as to whether or not adverse affects would arise from the proposed development. It follows, therefore, that there is also significant scientific doubt as to whether or not the proposed development would adversely affect the integrity of the South Dublin Bay and Tolka Estuary pSPA. Applying the Precautionary Principle, and in line with the guidance for AA and with relevant rulings of the ECJ, adverse impacts, therefore, must be assumed. In such circumstances, and in accordance with Article 6(3) of the Habitats Directive, the Board is precluded from granting planning permission at this stage.

The only avenue open to the Board in the event of considering a grant of permission, would be to invoke the procedures provided for in Article 6(4) of the Habitats Directive, i.e. Stage Three, Assessment of Alternative Solutions, and Stage Four, IROPI as described in the guidelines. As indicated at Section 10.6.4 above the applicants have expressly indicated that they are not relying on these procedures and they submit that the Board should not do so either.

In the circumstances I do not consider that the Board should proceed beyond this appropriate assessment stage. To do so would require that the applicants be requested to prepare a further AA Report, specifically addressing the issues of alternative solutions, IROPI and compensatory measures. This in turn would have to be made available for public consultation, including the re-opening of the oral hearing.

11.0 CONCLUSION

The key conclusions to this assessment are as follows: -

- The continuing development of an adequate port infrastructure is of critical importance to Ireland as an island nation with a small open economy that is driven by external trade.
- Dublin Port is by far the largest port on the island of Ireland and is of critical importance to the national economy.
- There is a current and ongoing need to plan for the provision of significant additional port capacity in Ireland. The recent economic slowdown provides some more time to optimise the choice for the provision of this key infrastructure.
- The promotion of competition, both within and between ports, and the avoidance of monopolistic conditions is a key tenet of national ports policy. Given the existing dominance of Dublin Port, particularly in the unitised trade sector, the addition of such significant extra capacity as is proposed in the subject application, would be contrary to this policy. It would also be contrary to the achievement of balanced regional development, a key strategic goal of the National Development Plan.
- The National Spatial Strategy while recognising the critical importance of Dublin Port to the economy of the Greater Dublin Area and to the national economy, clearly envisages alternatives to the further expansion of Dublin Port. These could include alternative locations within the Greater Dublin Area and/or the development of the other existing nationally strategic ports. The development of such alternatives would better align with the objective of a more spatially balanced Ireland than the continued expansion of Dublin Port.
- There are alternatives to the proposed development, including the greater use and further development of other existing strategic ports and the development of completely new port facilities. While it is recognised that such developments, particularly the development of new port infrastructure, would pose significant financial, planning and environmental challenges, including perhaps a greater level of planned intervention than current port policy appears to envisage, their achievement would generate significant national and regional planning and economic benefits.
- There are significant doubts in relation to the capability of Dublin Port and the proposed Dublin Gateway Project to accommodate the international trends in ship size towards larger vessels in the long term. In particular, there is a failure in the application to address, in sufficient detail, the adequacy of the navigational channel into the port to handle the design ship size for which the proposed development is planned and to

consider the implications should an upgrade of the channel be necessary in order to handle larger vessels.

- In the absence of the construction of the Clontarf Coastal Defence Scheme the proposed development could be considered to represent an unacceptable risk to flooding.
- Given the conclusion to the appropriate assessment that there is significant scientific doubt as to whether or not the proposed development would adversely affect the integrity of the South Dublin Bay and Tolka Estuary pSPA and that, therefore, adverse affects must be assumed, the Board is precluded from granting planning permission at this stage. It is not considered that the Board should invoke the procedures provided for under Article 6(4) of the Habitats Directive.
- The presence of the sand mason worm on the site, and that might indicate the presence of a reef, an Annex I habitat under the Habitats Directive, requires further investigation prior to any consideration to grant planning permission.

12.0 RECOMMENDATION

I recommend that permission be refused for the following reasons and considerations: -

(i) Having regard to:

- The Ports Policy Statement, 2005, which includes as a key policy the promotion of competition within and between ports and the avoidance of monopolistic conditions;
- The National Development Plan, 2007 – 2013, which includes as a key strategic goal the achievement of balanced regional development;
- The National Spatial Strategy, 2002 – 2020, references to the development of alternative port locations to Dublin Port and that would align with a key objective of the strategy to achieve a more spatially balanced Ireland;
- The existing dominant position of Dublin Port, particularly in the critical unitised trade sector and at which the proposed development is aimed;
- The evidence that there are alternatives to the proposed development that would generate significant national and regional economic and planning benefits, notwithstanding that such developments would pose substantial financial, planning and environmental challenges and may require greater intervention than currently envisaged under national ports policy;
- The uncertainties surrounding the capability of Dublin Port to respond to international trends towards larger ship sizes in the long term, in particular, with regard to the adequacy of the navigational channel into the port;

it is considered that the proposed development, which would increase the capacity of Dublin Port by the order of 50%, would not be in the interest of proper planning and sustainable development.

(ii) Having regard to the conclusions of the Appropriate Assessment, carried out in accordance with Article 6(3) of the Habitats Directive, the Board is not satisfied that the proposed development would not adversely affect the integrity of the South Dublin Bay and Tolka Estuary pSPA. It is considered, therefore, that the proposed development would be contrary to the proper planning and sustainable development of the area.

- (iii) The proposed development is located in an area that is at risk of flooding. It is considered that, in the absence of the construction of the Clontarf Coastal Defence Scheme, the proposed development would represent an unacceptable risk to flooding of the Clontarf area. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.
- (iv) Having regard to the occurrence on the site of the proposed development of the sand mason worm, and that may indicate the presence of a reef, an Annex I habitat under the Habitats Directive, it is considered that this would require further investigation prior to any decision to grant planning permission for the proposed development.

Brendan Wyse
Senior Planning Inspector

March, 2010

rk

APPENDIX A

Report of Mr. Anthony Cawley, Hydro Environmental Ltd.

Dublin Port Gateway Project Strategic Infrastructure Application

Review of Hydrological Related Issues

For An Bord Pleanála

Ref:-29N.PA0007.



Report No HEL 085101 v1.1

10th March 2010

1. Introduction

Mr Anthony Cawley B.E. M.Eng.Sc C.Eng M.I.E.I senior hydrologist and director of Hydro-Environmental Ltd. was appointed by An Bord Pleanála to examine and advise the Bord in respect to hydrological issues arising from the proposed extension to Dublin Port Gateway application submitted under the new Strategic Infrastructure Development Procedures.

The direction/initial brief given by An Bord Pleanála in respect to this assessment is summarised as follows:

- Advice on the impact of the development on the hydrological regime within Dublin Bay across the whole range of coastal processes.
- Advice on any increased flooding risk that might arise from the proposed development particularly along the Clontarf coastline where there is a recent history of flood events.
- Advice on the issue of Climate change (rising sea levels) and its implications for the proposed development.
- Advice on the above to include consideration of the adequacy of the applicant's approach/methodologies in addressing these matters and on any mitigation measures proposed.

2. DESCRIPTION OF THE DUBLIN PORT GATEWAY PROJECT

Planning Reference: 29N.PA0007. Development of additional Port facilities with access to deep-water berths at the northeastern part of Dublin Port, off Alexandra Road, Dublin 1.

The project consists of reclamation of 21ha of sub-tidal foreshore within Dublin Port for port purposes, including an associated dredged area of 22ha to accommodate new berthing piers. The development would extend the port within the intertidal zone of Dublin Bay and within a proposed Special Protection Area (SPA). The entire land reclamation area and eastern dredged area are located within the proposed SPA boundaries (2008). The development is likely to involve the disposal of a considerable volume of dredged material either to the Burford Bank offshore Dump site or reuse on-

site as reclamation infill. The proposed development is approximately 1000metres from the Clontarf sea frontage to the north. The Applicants are Dublin Port Company Ltd. and the EIS, Flood Risk Assessment, Appropriate Assessment and various supporting modelling studies were carried out by their consultants Royal Haskoning UK Limited.

3. Review Methodology

The assessment involved a full review in respect the hydrological / drainage issues of the planning application and supporting EIS and modelling studies, the Flood Risk Assessment and Appropriate Assessment reports submitted April 2009 in reply to a further information request by An Bord Pleanála, and the various submissions and observations from third parties, Statutory and Non-Statutory bodies and the Dublin City Council Planning Authority.

The attendance at the oral hearing proceeding in early December 2009.

A final review of all documentation including the various briefs of evidence and submissions to the oral Hearing.

4. Supporting Reports

The supporting reports submitted by the applicant that were reviewed as part of the hydrological brief are described below:

- Dublin Port Gateway - Environmental Impact Statement EIS 22nd August 2008 Final Report
- Dublin Port Gateway - Hydrodynamic Modelling Report August 2008 – Final Report, included in EIS as Appendix 17 of EIS
- Dublin Port Gateway - Wave Modelling Report July 2008 – Final Report, included in EIS as Appendix 18 of EIS
- Dublin Port Gateway - Sediment Modelling Report August 2008 – Final Report, included in EIS as Appendix 19 of EIS
- Dublin Gateway Development – Flood Risk Assessment April 2009 – Final report
- Dublin Gateway Development – Appropriate Assessment April 2009 – Final report

5 Summary of SUBMISSIONS

Submissions to the original application, the further information reply material and to the Oral Hearing were made by a number of individuals and local residents, Local Td's and Councillors, Clontarf Residence Association, Clontarf Historical society, Dublin Baywatch, Bird Watch Ireland, an Taisce, National Parks and Wildlife Service DEHLG, Port of Waterford Company, Bremore Ireland Ltd., Dublin Docklands Development Authority, Eastern Regional Fisheries Board and Dublin City Council.

The issues raised in these submissions in respect to hydrological implications are summarised as follows:

- Increased flood risk to flood vulnerable areas particularly along the Clontarf sea frontage.
- The development could have the potential to cause coastal erosion within the Bay due to potential changes by the proposed land reclamation on the hydrological regime.
- Climate change implications in respect to increased flood flows and sea level rise resulting in increased flood risk / reduced protection.
- Impact on the hydrodynamic regime resulting in tidal scouring of sands and further siltation of the Tolka and Liffey Estuaries.
- Dredging and reclamation activities associated with the construction could result in contamination issues for Dublin Bay due to the possible release and re-suspension of contaminated sediments and heavy metals.
- Requirement for on-going maintenance dredging of the new berthage and the resulting suitable disposal of such contaminated material
- Comments that the recommendation made by Sweeney in the EPA Climate Change (2003) Guideline report that no further land reclamation be carried out in estuaries is ignored by the proposed port extension.
- Insufficient area / volume provided for to achieve desired levels of initial settlement of dredged sediment on-site.
- That the Appropriate Assessment and the Flood Risk Assessment should take into account the cumulative impact on and of the Poolbeg Peninsula Scheme by the Dublin Docklands Development Authority.

6. Further Information Request

After review of the application and supporting documentation and the various submissions of An Bord Pleanála on 26th March requested further information. This further information required is as follows:

1 Flood Risk Assessment for the proposed development, with consideration of the following:

- Flooding assessment for the development itself, and for areas in the vicinity and in particular the Clontarf sea frontage.
- Impact of the development on the hydrodynamics within the port area.
- Long term tidal changes as a result of sea level rise
- Flood risk issues during the construction phase
- Consideration in the Flood Risk Assessment of the following was also requested

The condition and functioning of existing stormwater foreshore culvert along the Clontarf coastline.

The recent (July, 2008) approval by An Bord Pleanála for a pipeline that also includes a flood defence scheme for the Clontarf sea frontage.

The need for greater clarity in determination of return period discharges for the Rivers Liffey, Tolka and Dodder. The values stated are based on a previous study with no justification stated.

The need for a description of the return period conditions for potential future water levels and how they are implemented within the hydrodynamic model

The need for further wave climate modelling, such as the Boussinesq Wave (BW) Model, which may be considered to be more suitable within harbour areas than the DHI Spectral Wave Model employed in this instance.

The need for more detailed analysis of long term tidal trends within Dublin Bay as a result of increasing sea levels and a more comprehensive explanation of the impact of climate change and how it is implemented within the modelling studies

The assessment should include consultation with Dublin City Council, the OPW and other relevant statutory bodies

- 2 An Appropriate Assessment for the proposed development pursuant to the requirements of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

7 Review of EIS Report

The relevant sections of the EIS report and supporting appendices particularly appendices 17 to 19 (modelling studies) were reviewed.

The main category of potential hydrological impacts identified in the EIS were to

- The tides and currents
- The wave climate at the site and surrounding estuary
- The water quality in respect to the re-suspension of bed sediments under construction and operational phases
- The potential long-term sediment regime change post construction

Hydrological Assessment

The above potential impacts were assessed using a number of numerical models from the DHI MIKE21 hydraulic software suite. The hydrodynamic model, sediment transport and water quality models were set-up on a variable grid mesh and provided 2-d depth averaged resolution of the hydrodynamics (tide elevation, and tidal circulation, suspended solids, deposition rates, wave amplitude and period). The water quality model was used to predict the suspended sediment concentration and 5-day deposition rate associated with capital dredging operations. The wave climate model used to investigate the relative magnitude of design waves and changes to the wave climate as a result of the land reclamation was based on a previously calibrated model constructed for Dublin City Council Dublin Coastal Flooding Protection Study (completed in 2006) and upgraded and extended for this project.

In terms of Hydrology the EIS concluded the following:

Impact on Tides

The timing of the tides both springs and neaps will not change as a result of the proposed development. The tidal range on both spring and neap tides was shown to decrease by approximately 4.4cm and 0.8cm respectively. This effect on the tidal amplitude was considered a minor positive impact with respect to flooding.

Impact on Wave Climate

The proposed development provides additional shelter to the Clontarf frontage and to the Tolka Estuary. In these areas, wave heights are predicted by the spectral wave model to reduce slightly. However, at the entrance to the harbour wave heights are predicted to increase by a small amount as a result of reflected waves interacting with the incoming waves. The overall impact was deemed to be minor positive for the Clontarf sea frontage area and negligible on navigation in the access channel to Dublin Port and its existing port facilities and operations.

Impact on Currents

On neap tides a small localised increase in current speeds on the seaward edge of the dredged pocket on the incoming flooding tide is predicted. Whereas, on spring tides, both increases and decreases in tidal currents are predicted surrounding the port extension and in the Tolka estuary. The severity of the

impact was deemed to be a localised moderate negative impact. The proposed mitigation was to increase the dredge area on the eastern side of the Port extension which was shown to have a localised effect off the northeastern corner of the Port but did not mitigate the impact elsewhere.

Water Quality Impacts

Constructional activities associated with deepening the channel / seabed alongside the proposed south and east berths would release fine sediment into suspension with the concentration found to be highest in close proximity to the dredger and dissipating quickly as it moves away from the area. A sediment mitigation strategy was identified to lessen this impact by phasing the dredging activities for the eastern berths and approach channel to coincide with ebbing tidal conditions so that sediment movement is away from the Tolka Estuary and out towards the wider Dublin Bay Area. No impact is anticipated during the operational phase.

Sea Bed Impacts (alteration to the sediment regime)

In relation to the potential impact on the sediment regime and the morphology of the sea bed (i.e. erosion and deposition rates of sediment and sea bed changes both in respect to level and sediment distribution), this was assessed indirectly by examining the changes to bed shear stresses caused by changes to the circulation pattern (i.e. current speed and direction) within Dublin Harbour and the Tolka Estuary. The hydrodynamic study shows small increases in flow and bed shear stresses to the north and east of the reclamation area, near the edge of the dredged area and general decrease shear stresses in other areas. In the area to the north of the development the extent and depth of erosion is likely to be limited and retained to areas that are already subject to relatively high shear bed stresses. In areas of reduced bed shear stress, deposition of silty / muddy material is likely to occur.

The EIS commented on the potential drag-on morphological changes whereby the erosion of one area can lead on over time to the erosion of another secondary location in that sediment supply from a secondary erosion site is dragged to feed the primary erosion site. It is indicated in the EIS that this effect is unlikely to be significant as the area of potential erosion (characterised by increased higher bed shear stresses) is small and isolated from the main intertidal area.

The total area in which shear stresses have increased is reported to be 10.75ha located primarily in the lower intertidal area of the Tolka Estuary. Figure 10.17 of the EIS indicates a considerably large potential depositional area (i.e. classified by reduction in shear stresses) which appear to be easily in excess of 20ha surrounding the extension. The overall impact has been limited as far as possible through modification of the design of the dredged areas (Layout Option 2B was selected from 5 options considered) and was deemed by the applicant to be a minor negative impact.

Potential depositional areas indicated by a reduction in shear stresses are shown to occur in the immediate areas to the north and east of the proposed port extension. Some small pockets of increased and reduced shear stresses are also shown to occur further upstream in the Tolka Estuary suggesting further potential sites of erosion and deposition. The conclusion is that in the longer term this area would suffer from deposition assuming that a net sediment supply from Dublin Bay is available and that the Port may have to carry out maintenance dredging.

The EIS concludes that potential erosion that could be experienced is considered to represent a minor negative impact in relation to the scale of the area affected in the Tolka Estuary. The extent and depth of any erosion is likely to be limited and generally confined to areas that are already subjected to high levels of bed shear and possible historic erosion

Notwithstanding the above statement the EIS goes on to recommend the following monitoring: The potential for erosion to occur along the eastern boundary of the development may result in a limited area of scour. It is proposed that if such scouring occurs it could be rectified using material won from the ongoing maintenance dredging. It is recommended that a programme of monitoring is carried out in this area over a period of five years. It is also suggested in the EIS that the other localised areas of potential erosion to the north of the reclamation should also be monitored over a 5-year period. As mitigation if erosion materialises, the EIS recommends that the area could be recharged using material won during the maintenance dredging regime.

Bathing Waters

Hydrodynamic modelling indicates that any sediment suspended as a result of dredging would not affect any beaches and thus no impact is anticipated.

Dredge Disposal Area - Burford Bank

Anticipated that up to 600,000 tonnes of capital dredged material may need to be disposed of at the Burford Bank Offshore disposal site (representing an average of 14,000m³ each day over a period of 3months). Such an operation will require a disposal license from the Dept of the Marine.

Disposal could increase the Suspended Solids concentration and have a potential smothering effect on the benthos at the Burford Bank disposal site.

The impact predictions for the Burford Bank disposal site is a negligible impact to the hydrodynamic regime at the disposal site.

Soils and Geology

The sediment quality data taken over the site area reveals elevated levels of arsenic and nickel, along with high levels of copper at the surface. The sediment sampling number is not considered to be very extensive in respect to providing a sediment profile with depth (approximately 5 samples were taken at 1 to 2m depths and remainder were surface grab samples and therefore are unlikely to reveal the true degree of contamination present within the dredge material area. The potential impact identified in the EIS report arises from the disturbance of these contaminants, the subsequent tidal dispersal, settlement, re-suspension and final resting place during capital dredging works.

These findings led to predictions of impacts during the construction phase as follows

- Release of contaminants from increased suspended sediment concentrations during capital dredging deemed to be a potential moderate adverse impact
- Exposure of contaminated historic sediments subsequent to capital dredging operations and deemed to be a potential for major to moderate adverse impact depending on the levels of contaminant present.
- Release of contaminants during dewatering operations from land reclamation operations deemed to be a potential for minor negative impact.

To minimise the constructional impacts of the scheme a sediment mitigation strategy is proposed, along with collecting further sediment quality data from the wider receiving environment.

The sediment mitigation strategy report was submitted as an Appendix to the Appropriate Assessment Report and is reviewed in the following section.

Comments on Hydrodynamic Modelling EIS Study

The hydrodynamic model used to examine the Dublin Port proposal was MIKE 21 which is internationally recognised as one of the leading models for such applications. MIKE21 is a triangular flexible mesh finite volume code which allows the mesh resolution to vary for computational efficiency. The model was set up for the Irish Sea with high refinement in the Dublin Bay and Dublin Port Area having maximum mesh size of 3000m³ and scaling down to 1800m² in the River Liffey. The extent of the regional model was from Portrush to Cork with the six progressive mesh sizes having a maximum of size of 10000km².

The model resolution within the area of interest (i.e. Dublin Port and the Liffey and Tolka Estuaries) is considered sufficient. General information on bathymetry used to set up the model is provided but specific information as to the source, location and extent of bathymetric surveys and dates of survey was not provided.

In terms of good model calibration within the Dublin Port study area it is the local tide elevation at Dublin and agreement with velocity observations within the study area that are the most relevant to the model refinement and predictive capability as opposed to achieving a good regional model calibration (i.e. tide agreement at the various ports in the Irish Sea). In this respect velocity measurements are only available from a moving ADCP for the Main Liffey Channel both to the east and west of the Bull walls. There are no velocity measurements available in the Tolka Estuary or at the proposed land reclamation site due possibly to the shallow water depths that prevented the survey vessels traversing it (a fixed vessel measurement would have been a better choice for the shallow estuary areas). The calibration results presented for the hydrodynamic model do not verify the choice of Mannings roughness n set as a constant value throughout the study area of 0.019, nor does it verify the predicted circulation patterns in the shallow sub-tidal and intertidal areas surrounding the site. It is expected and extensive literature and experience shows that the Manning's roughness n would vary significantly with water depth between the intertidal and sub-tidal and the deep navigation channels.

The predicted tidal exchange volume entering and leaving via the Dublin Port channel between the north and south Bull walls should be reasonably accurate as the model has been extended up the Liffey and other tributaries to the tidal limit and therefore main channel flow should be reasonably accurate.

Model Results

The hydrodynamic modelling results indicate that the port extension will on the spring tides reduce the tidal range within Dublin Port by 4.4cm and by 0.8cm on the neap tide. Examination of the model output presented in Figure 4.1 of the Hydrodynamic report suggests that this phenomenon is more likely to be artificial, attributed to numerical oscillation and also possibly due to slight differences in the mesh generation used for the existing and proposed port development cases, as opposed to a natural lowering of the tidal range. Such a lowering of the spring tide range if it was caused by this development could be considered potentially a significant adverse impact on the integrity of the Tolka Estuary SPA as it changes the natural tidal range of the area.

The impact of the land reclamation on high tide levels within the estuary and port area will be negligible and thus will not result in flood risk implications for the Clontarf sea frontage area in respect to tides.

The findings expressed by Royal Haskoning in respect to the impact on tidal currents is that the proposed development under Option 2B has very minimal impact. The modelling results show that peak ebb flows for the existing and proposed cases (refer to Figures 4.2 and 4.3 of the EIS) show local increases in the peak velocity of up to 0.25m/s, located to the north of the proposed port extension, reductions in velocity occur close to the reclamation area to the north and east. Minor changes in velocity are predicted for neap ebb and flooding tides and also for the spring flooding tide. Not shown in this analysis is the effect on the spring tide low water channel which overtime is likely to migrate to the north of the port extension. The model findings show that the maximum increase or decrease in current speeds is of the order of 0.25m/s and 0.375m/s for neap and spring tides respectively.

Based on the hydrodynamic model results the predicted impact of the development on flow circulation is considered to represent a local moderate adverse impact with potential changes to the sea bed morphology particularly to the north and east of the port extension. It is also important to bear in mind that the hydrodynamic model was not calibrated nor verified in the Tolka Estuary area and thus a degree of uncertainty exists in respect to the overall impact on circulation as a result of the infill and dredging works.

No sensitivity analysis of the model roughness, model boundary conditions and design flows was presented to establish the sensitivity and variability of the predicted results particularly as the model was run in a virtually uncalibrated state for the Tolka Estuary area.

Comments on Sediment Impact Assessment Study

As part of the EIS a sediment study report was submitted by Royal Haskoning which investigated the potential impacts of the proposed reclamation area and capital dredge on the deposition and erosion of sediments within the Port and adjacent areas including the Tolka Estuary.

This study involved numerical sediment modelling of the dredge suspended solids plume and assessment of the output from the hydrodynamic model in terms of changes to velocities and bed shear stresses.

The aims of the study were to:

- Investigate the existing (baseline) suspended solids levels
- The composition of the existing bed sediments
- Assess the sediment plumes from the proposed capital dredging works
- Assess the potential changes in sediment transport regime arising from the proposed development

Suspended sediment concentrations were measured during two consecutive days of a spring tide and two consecutive days of a neap tide using Acoustic Doppler method calibrated against water samples taken at the same time. The data from the suspended solids survey showed that the baseline sediment concentrations were low, with fine silt making up the dominant portion of the samples. This survey data was not directly used in any model calibration or verification process.

A total of 48 sediment samples were taken from the sea bed at the proposed site and within the adjacent Tolka Estuary and Liffey Channel (refer to Figure 2.2 of the RH sediment Study Report). The clay, silt, sand and gravel content determined to establish the sediment description and the D20, D50 and D80 also measured to characterise the sediment and establish appropriate settlement velocities.

Dredging Construction Works Impact

The MIKE21 Mud Transport Module was used to simulate the potential dredging plume from proposed dredging works assuming a loss of dredge sediment volume of 6kg per m³ (appears to represent a 3% loss rate of dredged material) as recommended in the CIRIA Report C547 for scoping the assessment of sediment plumes from dredging.

The overall findings and conclusions from the plume modelling exercise for the proposed capital dredge works (layout Option 2B) are as follows:

- The model predicts noticeable suspended sediment concentrations (in excess of 90mg/l) moving northwards on flooding tides into the relatively shallow waters of the Tolka Estuary. This is particularly evident on spring tides and less so for neap tides.
- The sediment plume from the proposed dredging on the ebb tide is relatively insignificant with the plume moving out into Dublin Bay, particularly on spring tide excursions.
- The modelling predicts that noticeable deposition will occur close to the dredging location and generally would be contained in the area north of the main navigational channel. Outside of a 200m distance of the dredging sediment deposition after 5days is less than 2mm which is considered to be insignificant.

It can be concluded from the sediment plume modelling that the capital dredging operation will have a primarily localised impact both in terms of plume concentration and sediment deposition area and can significantly avoid impact on the shallower Tolka estuary intertidal and sub tidal waters by confining the dredging works east of the reclamation to periods of the ebbing tide (outgoing tide).

Sediment Erosion and deposition

The impact assessment of the proposed reclamation and capital dredging footprint on potential seabed erosion and deposition rates in Dublin Port and the Tolka Estuary is based on the hydrodynamic model results in terms of tide current magnitudes and resultant bed shear stress magnitudes. Sediment transport morphological modelling was not carried out for this assessment which models over the medium to long terms potential changes in the seedbed composition and depth as a result of the development using information on existing sea bed sediment profile, suspended solids profile in the inflowing rivers and at the Open Sea.

The consultant's findings from the hydrodynamic investigation are summarised as follows:

The model results show that the higher shear stresses at the northeast corner of the proposed port expansion is caused by an intrusion of the proposed reclamation into the discharge channel of the River Tolka. The magnitude of the increase is such that it may be able to erode the gravel deposits on the ebb spring tide (based on modelling a non-cohesive sediment). The modelling exercise through various dredge options at the east side of the port (5 examined with Option 2B the favoured option) demonstrates that such eroding shear stresses can be reduced, minimised or neutralised at the northeast corner of the proposed development.

The results for the final dredge design (Option 2B) show a decrease where the capital dredging takes place which would be expected, in a small area between the Port and Clontarf and along the navigation channel between port and entrance to River Liffey. This could result in the navigation channel attracting additional deposition and as a consequence the port may have to carryout periodic maintenance dredging.

The model results indicate that the proposed port development has little effect on bed shear stress in the River Liffey and outside of the Liffey entrance, which indicates that the regional morphological balance remains unchanged.

The impact on the sediment regime of the Tolka Estuary is based on predicted changes to the hydrodynamics and not on actual modelling of the sediment transport process. Furthermore the Hydrodynamic model is virtually uncalibrated in respect to the tidal circulation patterns within the Tolka Estuary. Therefore the predictive capability of the modelling exercise on assessing sediment transport and the resultant impacts is questionable.

An examination of the hydrodynamic results presented in the EIS shows additional areas of potential erosion and deposition with the Tolka Estuary based on changes in Shear stresses and velocities. The consultants in their brief of evidence to the Oral hearing conclude qualitatively based on sediment

description from a number of samples within the area that for the four main sites of change labelled A to D in Figure 3.6.1 (p18 of the numerical modelling statement of evidence) a variation from possible erosion of muddy component at ref A, no change likely at Ref B, possible accretion of muddy component at Ref C and possible erosion of some sand component at ref D.

The sediment transport assessment did not include the effect of sediment transport by waves even though a wave climate study showed that some increase and decrease in wave action will occur within the Dublin Port and Tolka Estuary Area as a result of the reclamation development.

No information was provided in the various reports as to the scale and extent of the Bathymetric survey or how up to date the survey set was.

Based on the information provided which is primarily qualitative in terms of assessing the potential changes to the sea bed level and composition, and relatively vague statements such as

“further erosion or scour is unlikely but if any further erosion does take place it will be localised”

“in areas of reduced bed shear stress deposition of silty material is likely to occur if there is sufficient sediment within the water column”

It is our conclusion that insufficient information and investigation has been carried out to assess the medium to long terms impacts of the reclamation development on the sediment regime within the Tolka Estuary and Dublin Port area.

Comments on Wave Climate Modelling Study

The wave climate model study carried out and presented in the EIS has been superseded by an updated wave climate modelling study presented in the Flood Risk Report that was prepared in reply to the further information request from An Bord Pleanála. An Bord suggested the use of a Boussinesq Wave (BW) type model for assessing more accurately the wave climate within the Port area. The revised wave climate study submitted in the Flood Risk Assessment report included the model results from both Mike21 Boussinesq and Spectral models.

The revised wave climate study also identified and corrected errors in the bathymetry file used in the original wave climate study submitted in support of the EIS. Such errors in the bathymetry file based on tabulated results show a significant effect on predicted significant wave heights within the Port and along the Clontarf Sea frontage, suggesting high sensitivity to accuracy of bathymetric data and thus a possible high degree of uncertainty in respect to Wave climate model results.

The request for an improved wave climate model was to allow wave reflection off structures to be modelled which is anticipated to be the significant factor in enclosed harbour areas and in investigating the potential impact of a proposed port expansion. The spectral Model Mike21 – Nearshore Spectral Wind Wave Model (NSW) used in the EIS does not have the facility to deal with wave reflection and deals with the propagation of waves and the effects of refraction diffraction and shoaling due to varying depth, local wind generation and energy dissipation by bottom friction and wave breaking.

The revised Wave climate model used both Spectral wave model and the Boussinesq Models to investigate the impact of the Harbour extension on surrounding wave climate. Due to numerical complexities the BW model had to be run with the wave breaking disabled and also coupled to the Nearshore Spectral wind Wave Model to enable wave breaking to be simulated. The critical wave and wind directions for Dublin Bay from the northeast to the southerly direction were investigated under mean highwater spring tides, 1 in 200 year highwater (surge) and 1 in 200year plus sea level rise, 1 in 1, 1 in 50 and 1 in 100 return period waves and 1 in 1, 1 in 10 and 1 in 50year return period local wind speeds. These various combination of conditions resulted in a total of 28 wave climate model runs.

The critical area in respect to wave climate impact is Clontarf sea frontage area due to its high pre-existing flood risk which saw extensive flooding during the storm surge of 1st February 2002. This sea frontage area is represented by reference locations A to D (with reference A been the most westerly and D being the most easterly closest to the North Bull) in the wave climate and flood risk assessment reports. The results presented from the updated wave climate assessment for the three wave climate models applied, (SW model, BW Model and NSW-BW) produced considerably varying results at these four key reference locations.

It is difficult to assess which model is most representative or quantify the accuracy of these models. The BW model which had to be run without wave breaking would appear to produce the most inconsistent results particularly between nearby locations and between the three critical model runs (Runs No. 11, 12 and 27) for the same reference location. As clearly stated in the report the spectral wave model does not include for the effects of reflection, which is likely to be the main influence by the proposed port reclamation Site on the Clontarf sea frontage. Therefore the results from the third model which is a coupling of the nearshore spectral model with the Boussinesq wave model is considered to provide the more representative results of the three models presented. The impact of the proposed port development on significant wave heights waves along the Clontarf sea frontage can be summarised as follows :

A Point A (most westerly location) The Port extension provides a degree of shelter and thus the computed significant wave heights are reduced slightly.

At points B, C and D the results indicate a very slight increase of 1 to 6cm which is minor in the context of the overall magnitude of computed wave heights along the Clontarf sea frontage. There are predicted changes both reductions and increases elsewhere in the port area but are considered small in terms of flood impact and impact on navigation.

It is important to note that the wave climate modelling exercise has not been calibrated or verified nor has information been supplied in respect to the extensiveness and accuracy of the bathymetry surveys relied upon in setting up the model. In particular the definition of the north bull breakwater in terms of its surveyed height (it represents a submerged breakwater) and consequently this feature is considered important as it functions to prevent the higher amplitude and longer period waves reaching the proposed site and Clontarf sea frontage from the northeast, east and southeast storm directions.

In terms of potential impact to flood risk along the Clontarf road frontage where slight increases in wave height are predicted the consultants show that under existing conditions (without the Clontarf flood defence scheme in place) widespread over topping of the flood defences will take place and

under these conditions the critical factor in terms of flood hazard is the limited storage volume available behind the walls as opposed to the considerably greater volume of water overtopping the walls and flood berm. Therefore a slight increase in significant wave height of the order of 1 to 6cm is unlikely to result in any noticeable impact on flood risk to this area and individual properties. The effect of the development for storm wave conditions coinciding with highwater mean spring tide is to increase the significant wave heights by between 7 and 17cm at the more easterly reference points C and D.

However, for lesser overtopping events where the compartmental storage volume is not the limiting factor than a rise in wave height could increase the flood risk to existing properties, however slight it may be. This effect has not been investigated sufficiently in the wave climate or FRA studies submitted.

8. Appropriate Assessment

In reply to an Bord Pleanála further information request an Appropriate Assessment was carried out for this project given that it is located within the South Dublin Bay and Tolka Estuary SPA and in proximity to the North Bull Island SPA. The Appropriate Assessment was carried out in accordance to the requirements of the Habitat Directive 92/43/EEC. In this respect a four stage approach to the assessment of impacts and the effects on the integrity of a European site was implemented For South Dublin Bay and River Tolka Estuary proposed SPA, North Bull Island SPA South Dublin Bay cSAC and North Dublin cSAC. For Stage One – Screening of likely significant effects:

The screened hydrological related effects were identified as the following:

The reclamation would result in the loss of 13.77ha of intertidal habitat and 7.18ha of subtidal habitat. Berth dredging would affect 9.5ha of intertidal and 19ha of subtidal habitat with the 9.5ha being converted to subtidal habitat. This could result in a loss of feeding habitat for wintering birds and terns and affect bird populations.

Increased erosion or accretion over the intertidal areas of the site, as a result of hydrodynamic changes associated with the development, could alter the composition and density of the benthic food resource for overwintering birds and result in a change in bird population.

An increase in suspended sediment levels during dredging or due to discharge from the bunded reclamation could result in disturbance to fish species that are actively fed on by terns.

The deposition of sediment re-suspended by the dredging or discharged from the reclamation could affect benthic fauna species in the inter-tidals, which could alter the food resource density and diversity for wintering wildfowl and waders, and result in a change in bird populations. This affect could be significant if the sediment contains high levels of contaminants/pollutants.

The mitigation measures to be introduced to limit the hydrological impact on the integrity of the SPA are summarised as follows:

The design of the proposed dredged area to the east has been extended (Option2B) to limit as far as possible any potential increases in bed shear forces due to increased velocities. And this in turn reduces the overall effects on the Tolka Estuary to the point that an adverse effect on integrity would not arise.

Assessment of effects

The Hydrodynamic modelling indicates following the revision of the dredge design (Layout Option 2B) that areas potentially affected would be localised and no change in substrate type, benthic communities or position in the tidal frame is expected.

Comment There is no clear evidence submitted either in the AA, or EIS to substantiate the above claim with the proposed capital dredge design only mitigating locally the increase in velocities off the north east corner of the proposed extension and not mitigating elsewhere the change in velocities (increases or decreases).

Dredging of the east berth would be limited to the ebbing tide resulting in the bulk of the sediment being deposited within the areas to be dredged or within the main navigation channel and thus minimising the impact on the Tolka Estuary intertidal and subtidal areas.

Implementation of a Sediment Mitigation Strategy to avoid an impact on the designated sites in Dublin Bay arising by limiting the excursion of contaminated material

Comment: The proposed Mitigation strategy in terms of timing of dredging works to coincide with the ebbing tide and the containment of sediment in bunded settlement area prior to return of discharge water should minimise impact on SPA.

Sediment Mitigation Strategy Study (Appendix A of the Appropriate Assessment report (April 2009))

A sediment mitigation strategy was proposed to mitigate the moderate to major significant impacts associated with the exposure and re-suspension of contaminated sediments during construction and operation phases. This sediment mitigation strategy was submitted as part of the Appropriate Assessment requested by An Bord Pleanála in the further information request.

The sediment mitigation strategy identified through further sampling of copper that practically the entire surface area of the proposed dredge area was contaminated having level 2 contamination of copper and thus rendering the surface layer material unsuitable for disposal at sea. No additional sediment sampling at depth was carried out in the AA. It was concluded that at least the top 1 to 2m of

the dredged sediment would have to be stabilised on site and used as infill material in the proposed reclamation.

Consultation with the Marine Institute who are the foreshore licensing authority indicated that material at depth will possibly not be contaminated as it is likely to pre-date the Port activities and thus may be suitable for at sea disposal. It was also indicated that in-situ sediments liable to be exposed as a result of the dredging works will pre-date the port development given the proposed depth of dredging to -11m for the south Lo-Lo berth and -9m below LAT for the eastern Lo-Lo and Ro-Ro berths and -7.8m for the access channels. Further Investigation of sub-surface sediments using coring investigation is to be undertaken so as to confirm the status of the sediments at depth and thus inform the removal and disposal measures.

The mitigation measures identified in the study to minimise sediment impact are as follows:

Relocation of Dredged material

Surface Contaminated material (identified to be level 2 contamination) to be removed, treated and relocated to a safely contained area within the engineered land reclamation.

The underlying sediments are to be investigated by extracting cores at depth with the site sediment investigation to be designed in consultation with the Marine Institute so that the extent and scope of the sediment investigation is sufficient for decision making on a foreshore license. Depending on the outcome of this further sediment testing, an option for disposal at sea may be feasible. It was stated that sufficient capacity within the reclamation area is available to take all of the dredged material should the need arise.

Dredging Measures to Avoid Re-suspension of silty sediments

The type of dredging, rate of dredging, and loss / spillage avoidance are outlined

Dredging Restrictions

Based on the Water quality modelling predictions of suspended solids plume at six locations within the dredge area it was shown clearly that the operation restricted to the ebbing (outgoing) tide, spring and neap, allowed plume migration to move out into Dublin Bay. Therefore to limit the sediment plume movement northwards into the Tolka Estuary SPA it will be effective to restrict dredging to the ebb tide for the proposed eastern berths. Utilising this mitigation measure will result in the majority of the sediment being deposited within either the proposed dredge area and the navigation channel.

Handling of Dredged material

It is likely given the proximity to the shore and land reclamation area that the dredged material will be pumped ashore using a floating pontoon with floating pipeline to a suitably prepared area (bund area) for containment prior to stabilisation and reuse in the reclamation. An average retention time of 12 hours is proposed. An area of 10ha with 4m high bunds for a peak daily dredged volume of 432,000m³ (10 to 1 water to sediment was assumed). Since there is a larger area than 10ha available there is a potential to optimise the design for settlement.

The discharge of latent water from the bunded settlement area will be controlled by a weir and the outflow will be to the southern side of the reclamation area away from the Tolka Estuary.

Method of Stabilisation

Various options for stabilisation have been identified and the preferred method will be agreed with the regulator.

It is noted that the Sediment strategy is a work in progress produced at the time of the EIS and AA production and that the strategy is to be developed further during the foreshore License Application Process. It is not clear as to whether a 12hour average settlement period is sufficient for settlement purposes of the contaminated material.

9. Flood Risk Assessment

A flood risk assessment study investigating the effects of tidal, fluvial and storm wave on flooding in Dublin Port and the Tolka Estuary was submitted with the Further Information response dated April 2009.

This assessment examined the combination of extreme tides, extreme waves and extreme fluvial floods as part of the flood risk assessment study. The fluvial flood flows used to describe the 100year and 1000year return period events are considered to be appropriate and represent current best available estimates. The study also concluded that in the vicinity of the Port area the impact of fluvial floods both individually and combined with tides is not significant and does not influence the flood risk for both the development and surrounding areas including the existing Port area and Clontarf Sea Frontage.

The proposed port given that it is to be reclaimed from the sea clearly falls within Flood Zone A of the planning guidelines. The proposed development would be considered a water-compatible development (i.e. a port facility) and therefore under the guidelines is acceptable for development within Flood Zone A.

The proposed Quay Wall is to be set at 3.49m O.D., the hardstanding areas will be set at a minimum level of 3.59m O.D. Malin and the proposed finish floor levels of the associated Port Buildings will be at 4.09m O.D. Malin. The estimated 200 and 1000year return period tide levels are 3.13 and 3.24m O.D. Malin without any sea level rise. It is noted that the fluvial flood contribution from the River Liffey, Dodder and Tolka and other smaller tributaries such as the Camac, Poddle, Griffeen etc were found to have a very limited effect on the combined design flood level even with a 20% climate change allowance applied to its flood peak. This is often found to be the case in the lower section of relatively large estuaries where the tide and wave effects are the dominant influence due to the wide estuary width and deep invert depth.

A climate change sea level rise of 0.51m is proposed as the most likely future scenario by 2100 based on the IPCC (2007) report for the A2 Scenario (medium - high scenario). Such an allowance of c 0.5m generally meets current practice in Ireland in respect to Flood Relief Schemes, OPW FRAM studies and general coastal flood risk assessment studies. In the DEFRA Guidance (2006) a net sea level rise of 105cm by 2100 based on a high projection scenario (exponential rise in the annual rate of sea level rise). The recommended 200year design flood level is 3.64m O.D. which includes the A2 Sea level rise scenario and combined with this high tide level is a 1 in 1year storm wave event producing a significant wave height of 1m. Under these design conditions significant overtopping of the Quay wall is predicted c with 0.24 cumec per linear m of flow from storm waves predicted. For such an event the quay and hard-standing areas will be submerged by up to 150mm of water based on the high tide level. Should the high projection scenario occur, the quay area will be submerged by 640mm and the terminal building floor levels would also be submerged and breaking waves free to travel across the quay. The High Projection scenario combined with 200year tide level represents a very severe design case for Dublin city and would result very extensive flooding along the Quay Wall areas and may should such sea level rise occur in the future it may require a tidal barrage be constructed to protect the city.

In the FRA report the Consultants recommend setting the floor levels of the buildings to a higher level of 4.24m O.D. which sets it above the 200year high projection sea level rise and that the design of the quay walls should be flexible to accommodate future increases of the site should climate change dictate so. It is also recommended that a flood management plan including upgrade where necessary of the existing flood forecasting and warning system.

The study concludes that the proposed works will not increase the risk of flooding along the vulnerable Clontarf frontage and at certain locations should have a slight beneficial effect in reducing wave heights due to a sheltering effect created by the development. The risk assessment also indicates that the high water spring tide and extreme tide levels will be slightly reduced.

Hydrodynamic modelling has shown that the proposed works will not restrict the fluvial flood flows river Dodder, Tolka and Liffey discharging through the port area and do not increase the risk of flooding under such events.

The proposed Clontarf flood defence scheme which have been granted planning permission by An Bord Pleanála will not impact on the proposed port development, nor will the port development impact upon or reduce the level of protection afforded by this defence scheme.

The Flood risk report concludes that the proposed development satisfies the requirements of the OPW and DoEHLG Draft Planning Guidelines in relation to managing flood risk both in terms of its proposed finish floor levels and that the proposed development does not impact on flood risk to adjacent areas such as the Ringsend and Irish town area the existing Dublin Port area and the Clontarf sea frontage area.

Comments on Flood Risk Assessment (FRA) Study

A sufficiently detailed flood risk assessment was carried out for the proposed development which meets the requirements set out in the recent OPW and DoEHLG the Flood Risk Management Planning Guidelines (November 2009). The proposed port area clearly falls within Flood Zone A (High Probability of Flooding) of the planning guidelines. The proposed development is considered to be a water-compatible development based on the description of such development in the Planning Guidelines (i.e. a port facility) and thus considered suitable for development within Flood Risk Zone A without performing justification / sequential Test.

The FRA examined the combination of extreme tides, extreme waves and extreme fluvial Floods as part of the flood risk Assessment. The fluvial flood flows used to describe the 100year and 1000year return period events are considered to be appropriate and represent current best available estimates. The study also concluded that in the vicinity of the Port area the impact of fluvial floods both individually and combined with tides is not a significant contribution and does not influence the Flood risk for both the Development and surrounding areas including the existing Port area, Clontarf Sea Frontage, Ringsend and Irishtown sea frontages, etc..

A long record of tide levels was available for Dublin Port (continuous from 1924 to date) on which to statistically estimate the 200year (0.5% APR) and the 1000year (0.1% APR) return period tide levels at Dublin Port gauge. Such estimates are relevant for the entire sea frontage area along the Liffey, Dodder and Tolka Estuaries. The estimated 200 and 1000year high surge tide levels of 3.13m OD and 3.24m OD are considered to be reasonably reliable given the extended record available.

A combination of a 200year tide level with a 1 in 1 year storm wave event was considered in the FRA to conservatively represent the 200year flood event. Other combinations were not discussed such as higher return period wave events with lower return period high tides (possibly a 5 and 50year event or 10 and 25year combined events). In terms of establishing safe finish floor levels for the Terminal Buildings and for the operating quay height, the combined event documented in the report is considered to be appropriate and should error on the conservative side. The inclusion of 0.51m sea level rise is also considered to be appropriate, refer to comments on climate change allowance in the following section. Therefore a design tide level of 3.64m OD combined with a significant wave height of 1m is acceptable in terms of flood protection and evaluating flood risk.

The proposed Quay Wall is to be set at 3.49m O.D. , the hardstanding areas will be at a minimum level of 3.59m O.D. Malin and the proposed finish floor levels of the associated Port Buildings will be at 4.09m O.D. Malin. The estimated 200year return period flood level with appropriate sea level rise is 3.64m O.D. combined with a significant wave height of 1m O.D. Under such conditions the quay area will flood but the terminal building which is well set back from the Quay wall should be protected. A recommendation by the consultants to raise the Building's floor levels to 4.24m O.D. which is the 200year tide level with high projection sea level rise of 1m could be encouraged as it will give an added degree of flood protection into the future.

The hydrodynamic analysis shows from a flood risk criteria the proposed port encroachment into the Tolka Estuary does not constrict tidal or fluvial flows discharging down the Estuary and therefore will not affect the flood risk to the surrounding area under such conditions.

Wave modelling was carried out to establish the effect of the Port encroachment on wave climate and particularly under critical conditions of extreme high tides. Three model types were used which

produced slightly conflicting results in terms of wave magnitude and impact. The Boussinesq Wave (BW) model requested by An Bord Pleanála in a further information request had limitations in its application to the Dublin Port study in that wave breaking could not be enabled in the model runs due to memory limitations and the high model mesh refinement required. A combined approach using the coupling of a nearshore spectral wave model and the BW model was used. This approach showed a moderate reduction in the significant wave heights towards the more sheltered upper Tolka Estuary area (along the Alfe Byrne Road but indicated a slight increase in wave height of the order of 3 to 6cm along the Clontarf sea frontage eastwards towards the North Bull under design flood conditions. Slightly higher predictions of 7 to 17cm were produced for the design wave under mean high water spring tide conditions.

In terms of potential impact to flood risk along the Clontarf road frontage where slight increases in wave height are predicted the consultants show that under existing conditions (without the Clontarf flood defence scheme in place) widespread over topping of the flood defences will take place and under these conditions the critical factor in terms of flood hazard is the limited storage volume available behind the walls as opposed to the considerably greater volume of water overtopping the walls and berm. Therefore a slight increase in significant wave height of the order of 1 to 6cm is unlikely to result in any noticeable impact on flood risk to this area.

The proposed Clontarf coastal defence scheme has set its flood walls and embankments above 4.4m O.D. based on a 30year design horizon and appropriate freeboard allowance. The predicted slight rise in wave heights will have very minimal / imperceptible effect on overtopping of these proposed defences.

The consultants in there FRA conclusions claim that proposed development will result in a slight reduction in wave heights based on the Spectral Wave model runs, however given the variation in model runs the more prudent conclusion is that due to reflection and diffraction the impact of the development will result in a slight increase in wave heights along the eastern portion of the Clontarf road frontage (as predicted by the revised modelling). Under extreme flood conditions one accepts that limiting factor in term of flood hazard is the available storage behind the defences as opposed to the overtopping volume which is influenced by the wave amplitude and period. For lesser overtopping events where the compartmental storage volume is no longer the limiting factor, then a rise in wave height will increase the flood hazard to adjacent properties, however slight it may be. This effect has not been investigated sufficiently in the FRA study submitted particularly given the high flood risk the currently exists along the Clontarf sea frontage.

In the Flood Risk Assessment report no specific comment or conclusion was given to the potential impact, cumulative or otherwise from the Port extension on the Poolbeg Peninsula Development Scheme. Having reviewed the EIS and proposed layout for the Poolbeg Peninsula Development Scheme in the light of the Port extension application I conclude, given the proposed level of protection for Poolbeg Peninsula Scheme with future ground floor levels set at a minimum of 4.5m O.D (and proposed flexibility to increase levels based on findings from specific FRA studies) that no significant flood risk implications will result from the Port extension. The wave climate plots presented in the FRA for the critical east and northeast wave directions indicate a slight reduction/improvement at Poolbeg. The hydrodynamics and sediment regime along the Poolbeg Peninsula are shown not be affected by the Port extension.

The cumulative impact of the two developments on flood risk in Dublin Port and the Liffey and Tolka Estuaries were not investigated by the applicants but I would be confident to conclude given the description of the both developments that such cumulative effects are very unlikely to alter the flood risk for the area and particularly at the sensitive Ringsend/ Irishtown and Clontarf sea frontage area.

Comment on Climate Change

In the Flood risk assessment Study the consultants used a sea level rise of 510mm to 2100 which included isostatic subsidence of 0.3mm per year. The study also in respect to fluvial flood magnitudes allowed a 20% increase in peak magnitudes, however in the area of interest fluvial floods were shown to have very limited influence on the overall design flood level or the flood risk to adjacent areas.

Global mean sea levels are predicted to increase as a result of a combination of thermal expansion of the water column and melt from glaciers. The IPPC TAR report that preceded the more recent IPCC (2007) report has been used as the basis of future sea level projections for Ireland. A best estimate increase of 480mm to year 2100 has been suggested by Sweeney et al (2003) and used in the Greater Dublin Strategic Drainage Study (GSDSDS 2005). This value is not directly challenged in the 2007 IPCC report, with a range of 0.2 to 0.51m given for the prudent Medium to High A2 emission scenario.

The IPCC Report suggests that if contributions of ice melt from Greenland and Antarctica were to grow linearly with temperature rise rates, then the upper range for the A2 emissions scenario will increase from 0.52 to between 0.62 to 0.72m. In the UK DEFRA (2006) in their most recent guidance (DEFRA,2006) have presented the following net sea level rise allowance for the UK.

Table 1 The UK Flood and Coastal Defence Appraisal Guidance (DEFRA, 2006) Regional net sea level rise allowances

Region	Assumed vertical land movement (mm/yr)	Net Sea-Level Rise (mm/yr)				Previous Allowances
		1990-2025	2025-2055	2055-2085	2085-2115	
East of England	-0.8	4.0	8.5	12.0	15.0	6mm/yr constant
South West and Wales	-0.5	3.5	8.0	11.5	14.5	5mm/yr constant
NW & NE England, Scotland	+0.8	2.5	7.0	10.0	13.0	4 mm/yr constant

Updated figures now reflect an exponential curve, and replace the previous straight line graph representations.

Applying the regional values for Wales for the period 2007 to 2107 a total increase in sea level of 967mm is predicted by the year 2107 (average rate of 9.7mm/year). This is significantly higher than any previous sea level rise predictions by the ICCP.

Based on current research and current uncertainties on the behaviour of the Greenland and Antarctica ice shelf, it is considered that an allowance of 0.5m for sea level rise remains a suitable climate change allowance for infrastructure planning purposes over the next 50 to 100years.

The new planning guidelines concerning flood risk management deal with the suitability, justification and flood risk assessment for developing within coastal and fluvial flood risk and floodplain areas. Therefore the proposed Dublin Port reclamation project is covered by these planning guidelines. The recommendation by Sweeney et al. In the EPA Climate change report (Sweeney et al. 2003) that no further land reclamation be carried out in estuaries which has been referred to in many of the third party submissions is only general guidance as to good / prudent practice as are the recommendations in respect to set back distances from hard and soft coastal defences and sand dune systems.

10. Conclusions

The Flood Risk Assessment submitted by the Applicant dated April 2009 is sufficiently detailed to evaluate the flood risk to the development and the impact of the development on flooding and flood risk to adjoining lands. This flood risk assessment shows that the proposed port extension is a suitable development type for its Flood Zone A classification. The recommended quay levels and floor levels are sufficient in terms of flood risk in respect to the 200year flood event and climate change sea level allowance.

A recommendation by the consultants to raise floor levels to 4.24m O.D. provides additional flood protection for the port buildings and allows for future possible sea level rises and should be encouraged.

The impact of the proposed development on tides and fluvial flows is shown to be negligible in respect to flood risk and only a slight impact to the wave climate is predicted. The impact to the wave climate under the 200year design flood conditions will not affect the flood risk to in the Clontarf Sea frontage as the area will be extensively overtopped and the limiting factor will be the available flood storage behind the defences. The potential impact on wave climate along the Clontarf sea frontage under less severe flood events (where the overtopping volume is the limiting factor as opposed to the available flood storage volume) could potentially result in a slight worsening of the flood risk for the easterly portion of the Clontarf Road.

A new flood defence scheme has been approved by An Bord Pleanála for the Clontarf area to combat wave and tidal flooding. The proposed development will not adversely affect the level of flood protection provided by this scheme when implemented.

Given the high level of flood risk that currently exists along the Clontarf Road Frontage the proposed development has a potential to very slightly exacerbate flooding through impact on the wave climate at the easterly portion of Clontarf Road. Therefore pre the construction of the Clontarf Coastal Defence scheme the proposed port development could be considered to represent an unacceptable risk to flooding.

The potential impact on the sediment regime within the Tolka Estuary SPA has not been adequately addressed either in the EIS or the Appropriate Assessment studies. The principal limitation of the supporting studies is that the sediment transport regime was not modelled directly to assess medium to long term changes in sea bed characteristics as a result of the proposed reclamation and dredging work. The sediment impact assessment is based on the hydrodynamic model output by identifying potential changes in velocities and bed shear stresses under spring and neap tide conditions and altering the dredge design to minimise such impacts. The hydrodynamic model used for this assessment is not considered to be adequately calibrated or validated with no verification points available within the Tolka Estuary. No details as to the bathymetric data in terms of the extent, scale and survey dates was provided in the model reports to assess the accuracy of the model set-up and predictions.

The hydrodynamic model shows for the proposed layout (Option 2B) moderate to significant areas of potential shear stress change (both increases and decreases) within the Tolka Estuary SPA which could given the nature of the bed sediment represent possible erosion and deposition sites. The effect of wave climate on sediment transport has not been assessed for the study area. Therefore given the importance of the area as an SPA it is concluded that the potential impact to the sediment regime has not been adequately assessed.

The assessment of the seabed sediment for contaminants is considered to be limited and more information should have been gathered in respect to establishing the likely sediment profile in respect to depth so as to inform the EIS and AA studies of the implications of the capital dredge works on disposal options and possible water quality and benthic impacts of the dredging operation on the Tolka Estuary SPA.



Anthony Cawley B.E. M.Eng.Sc. C.Eng M.I.E.I

10th March 2010

Consulting Hydrologist