

Dublin Port Company

Dublin Port Masterplan

Strategic Environmental Assessment - Environmental Report

32010128/FS01-02

Date: February 2012


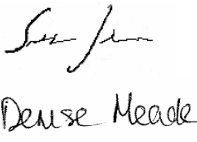


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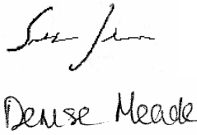


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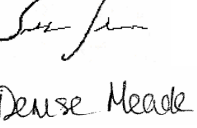


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Glossary

Below is a glossary of terms used in the SEA Draft Environmental Report document.

AA	Appropriate Assessment
BOD	Biochemical Oxygen Demand.
CDL	Coal Distributors Limited
CFB	Central Fisheries Board, now Inland Fisheries Ireland
COD	Chemical Oxygen Demand.
CO2	Carbon Dioxide
CSO	Central Statistics Office.
cSAC	Candidate Special Area of Conservation
dB(A)	The term used to express a level of sound or decibel level. The (A) denotes that levels are 'A'-weighted.
DDDA	Dublin Docklands Development Authority
DEDs	District Electoral Divisions
DEMNR	Department of the Environment and Natural Resources
DCC	Dublin City Council
DOEHLG	Department of the Environment, Heritage and Local Government
DO	Dissolved Oxygen.
DPFPP	Dodder Promenade Flood Protection Project
DPC	Dublin Port Company
EC	European Community
EIS	Environmental Impact Statement
EMS	Environmental Management System
EPA	Environmental Protection Agency.
ERBD	Eastern River Basin District
ERBMP	Eastern River Basin Management Plan
ESB	Electricity Supply Board
ESPO	European Sea Ports Organisation
EU	European Union
FEMFRAMS	Fingal East Meath Flood Risk Assessment and Management
FRAM	Flood Risk Assessment Management
GHGs	Green House Gases.
GSI	Geological Survey of Ireland.
HGV	Heavy Goods Vehicle.
HMWB	Heavily Modified Water Body
HSA	Health and Safety Authority
IPPC	Integrated Pollution Prevention Control
ISO	International Standards Organisation
LA	Local Authority
Leq	Equivalent continuous steady sound level. Effectively an average value.
Lden	The day-evening night composite noise indicator adopted by the EU for the purposes of assessing overall annoyance.
Lo-Lo	Load-on Load-off
MMW	Mixed Municipal Waste
MT	Metric Ton
N	Nitrogen

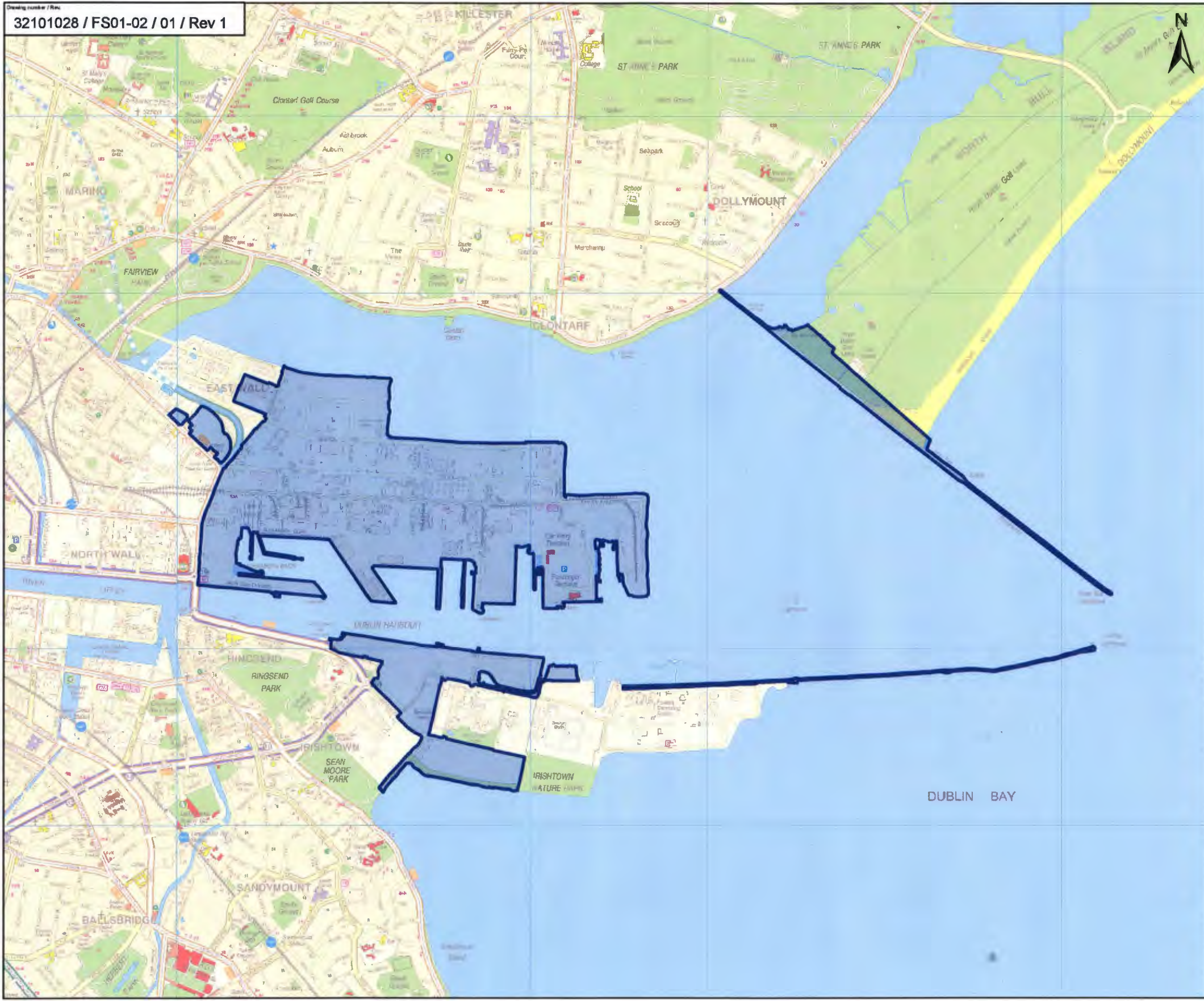
Natura 2000 site	A site protected under the EU Habitats Directive and the EU Birds Directive.
NDP	National Development Plan
NHA	Natural Heritage Area
NIAH	National Inventory of Architectural Heritage
NIS	Natura Impact Statement
NO2	Nitrogen Dioxide
NPWS	National Parks and Wildlife Service
NTS	Non-Technical Summary
NTS (drawings)	Not to scale
OD	Ordnance Datum
OPW	Office of Public Works
OS	Ordnance Survey
PAH	Poly Aromatic Hydrocarbon
PPV	Peak Particle Velocity
pNHA	Proposed Natural Heritage Area
PM10	Particles measuring 10µm or less).
RMP	Record of Monuments and Places
RPS	Record of Protected Structures
Ro-Ro	Roll-on Roll-off
SAA	Strategic Appropriate Assessment
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
sNIS	Strategic Natura Impact Statement
S02	Sulphur Dioxide
SPA	Special Protection Area
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
WEEE	Waste Electrical and Electronic Equipment
WFD	Water Framework Directive
WHO	World Health Organisation
WMU	Water Management Unit

1 Introduction

1.1 Background

- 1.1.1 The principal objective of the Dublin Port Company (DPC) is to facilitate the safe, efficient flow of goods and passengers through the port. The company provides the infrastructure, facilities, services and hard standing areas to meet with the needs of their customers and to allow the transfer of goods and passengers between sea and land.
- 1.1.2 DPC owns approximately 266 ha of land at the mouth of the River Liffey where the river flows into Dublin Bay. Please refer to Figure 1 for details on the current extents of DPC land ownership. These current land holdings contain facilities operated by DPC and the port tenants whose operations include Roll-On, Roll-Off (Ro-Ro), Lift-On Lift-Off (Lo-Lo), bulk solid and liquid management and cruise liner facilities.
- 1.1.3 In 2010, these facilities processed 28 million tonnes of freight as well as in the region of 1.3 million passengers.
- 1.1.4 DPC aims to continue to enhance the development of the port facilities and services in order to fulfil the needs of their tenants and customers in a way that is sensitive to the local environment. DPC has developed a Masterplan in order to assist in the achievement of this aim.
- 1.1.5 Over the next 30 years, the demand for freight and passenger movements at the port is projected to increase. The Masterplan 2011 – 2040 aims to modernise the port layout in order to increase efficiency and throughput capacity. In conjunction with the development of the Masterplan, this SEA Environmental Report and accompanying Strategic Natura Impact Statement will outline how the strategic environmental objectives for the port have been incorporated into the development and selection of options for the Masterplan.
- 1.1.6 The SEA Environmental Report has been prepared to comply with the provisions of the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 and the European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011 (S.I 200 of 2011).
- 1.1.7 The SEA Environmental Report should be read in conjunction with the Masterplan 2011-2040 and the Masterplan Draft Strategic Natura Impact Statement Report.

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LEGEND:
 DPC Boundary

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Project
**DUBLIN PORT MASTERPLAN
 SEA ENVIRONMENTAL REPORT**

Drawing Title
**FIGURE 1:
 CURRENT LAND EXTENTS
 OF THE DUBLIN PORT COMPANY**

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1.2 Requirement for a Strategic Environmental Assessment

- 1.2.1 The European Directive (2001/42/EC) on the Assessment of the Effects of Certain Plans and Programmes on the Environment (SEA Directive) was adopted by the European Parliament and Council in June 2001. This Directive was then transposed into national legislation in Ireland through the European Communities (Environmental Assessment of Certain Plans or Programmes) Regulations (S.I.435/2004) and the European Communities (Strategic Environmental Assessment) Regulations (S.I.436/2004) and the European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011 (S.I 200 of 2011).
- 1.2.2 The Masterplan process is not subject to preparation and/or adoption by an authority at national, regional or local level and is also not required to be prepared for adoption through a legislative procedure by Parliament or Government. On this basis, the Masterplan is not defined as a plan or programme under the above SEA regulations.
- 1.2.3 However, the SEA Environmental Report has been prepared in accordance with the legislative requirements. As the Masterplan is not defined as a required plan or programme under the SEA regulations, the SEA Environmental Report is therefore considered a non-statutory voluntary assessment, which has been commissioned by Dublin Port Company.
- 1.2.4 It is considered that undertaking an SEA of the Masterplan will demonstrate how environmental considerations and sustainable development decisions have been integrated into the Masterplan development process.

1.3 Purpose of the SEA Environmental Report

- 1.3.1 The Environmental Protection Agency's (EPA) Development of Strategic Environmental Assessment (SEA) Methodologies for Plans and Programmes in Ireland Report (2003), defines SEA as:
- 1.3.2 "a systematic on-going process for evaluating at the earliest appropriate stage of publicly accountable decision making, the environmental quality and consequences of alternative visions and development intentions incorporated in policy , planning or programmes initiatives (EPA, 2003, p.2)".
- 1.3.3 The main output of the SEA process is the SEA Environmental Report which will be made available for stakeholders to review.
- 1.3.4 The main objective of the SEA Environmental Report is to ensure that any likely significant environmental impacts of the final preferred Masterplan Options and their future development are identified, based on the current situation and likely future situation without the Masterplan in place. The potential impacts are identified for those that arise directly as a consequence of the Masterplan, and also those impacts that arise cumulatively with the other plans and programmes relevant to the area (i.e. taking account of their potential impacts).

- 1.3.5 The SEA Environmental Report documents this assessment with regard to the following aspects:
- the implementation of the various alternatives to the Masterplan, including those which were not taken forward; and
 - the implementation of the Masterplan.
- 1.3.6 Additionally, the following areas have been addressed and documented in the SEA Environmental Report:
- the reasons for selecting the preferred options (and thus not choosing the other alternatives) in light of the effects;
 - the mitigation measures proposed by the SEA Environmental Report and incorporated into the Masterplan; and
 - mitigation and monitoring measures which are required for future stages of implementation of the Masterplan.

1.4 SEA Guidance Documents

- 1.4.1 In the development of this SEA Environmental Report, appropriate consideration and reference has been made to a number of guidance documents including, but not limited to the following:
- Development of Strategic Environmental Assessment (SEA) Methodologies for Plans and Programmes in Ireland, Synthesis Report (EPA, 2003);
 - SEA Scoping Guidance Document (EPA, 2010);
 - SEA Environmental Report and Plan Template (EPA, 2010);
 - SEA Process Checklist (Consultation Document) (EPA, 2010); and
 - Implementation of the SEA Directive (2001/42/EC), Assessment of the Effects of Certain Plans and Programmes on the Environment, Guidelines for Regional Authorities and Planning Authorities (Department of Environment, Heritage and Local Government (DOEHLG), 2004).

1.5 Appropriate Assessment (Strategic Natura Impact Statement)

- 1.5.1 Article 6.3 of the European Union (EU) Habitats Directive (92/43/EEC) requires that 'any plan or project' not directly connected with or necessary to the management of a Natura 2000 site, but likely to have a significant effect thereon, shall be subject to an Appropriate Assessment (AA) of its implications for the site in view of the site conservation objectives'.
- 1.5.2 There are a number of Natura 2000 sites, both candidate Special Areas of Conservation (cSAC) and Special Protection Areas (SPA) within 15 km of the Dublin Port Estate as listed in Table 2 and 3 below. It should be noted that these various designations overlap in places.

- 1.5.3 The Masterplan is a non-statutory plan. Additionally, the currently proposed engineering options are considered concepts which may be developed should the projected growth in demand occur.
- 1.5.4 DPC has commissioned the development of an Appropriate Assessment, referred to as the Strategic Natura Impact Statement (sNIS) for the Masterplan to identify the principles/measures which will be addressed by DPC at a later stage in the event that individual developments/projects are developed (i.e. future monitoring requirements for project NIS's)
- 1.5.5 The sNIS will allow DPC to plan for the potential delivery of individual projects/developments in terms of project specific sNIS delivery requirements. It is also considered that the sNIS will assist in ensuring that relevant stakeholder's issues/concerns are adequately addressed if and when projects are taken forward from the Masterplan.
- 1.5.6 The development of the sNIS will also assist DPC to identify the likely implications of potential future projects being developed with regard to the Appropriate Assessment process.
- 1.5.7 The sNIS has been included as an accompanying document to the Masterplan and SEA Environmental Report. The sNIS is also referenced in Section 8 of this report.

2 SEA Approach and Methodology

2.1 SEA Process

2.1.1 The SEA Environmental Report will be presented in accordance with the key stages of a statutory SEA after screening. These stages will comprise the following:

- **Screening** to determine if the Masterplan is likely to have a significant effect on the environment;
- **Scoping** of the SEA and development of the SEA Scoping Report, including consultation with relevant stakeholders to identify any key issues and concerns;
- Development of the **SEA Environmental Report** to evaluate the significant environmental effects of implementing the Masterplan;
- **Consultation** to facilitate the final review of the SEA Environmental Report by relevant stakeholders, public, business, political and community groups;
- Development and publication of the **SEA Statement**, which documents how the SEA Environmental Report and consultation have been taken into account during the Masterplanning process; and
- **Monitoring** of the plan and preparation on the Monitoring Report.

2.2 Screening

2.2.1 The SEA 'screening' stage was applied to the Masterplan proposals and concluded that there was no legal requirement for the application of SEA to the Masterplan.

2.2.2 However, it was considered that the development of an SEA in conjunction with the Masterplan would provide a recognisable mechanism for demonstrating how environmental considerations and sustainable development decisions are being integrated into the Masterplanning process.

2.2.3 On this basis, a non-statutory voluntary SEA has been produced following the regulations and guidelines of a statutory SEA.

2.3 Scoping

2.3.1 The SEA Scoping Report identified the scope of the SEA assessment in terms of the environmental aspects which may be significantly affected as a result of the implementation of the Masterplan. The report also outlined the proposed methodology for addressing these impacts during the assessment stage. The report focused on the initial engineering options proposed by DPC and identified the environmental aspects relevant to the implementation of these options.

2.3.2 Outside of potential future reclamation projects, the physical extent of the Masterplan options are limited to DPC estate owned lands, and this (as well as the potential nature of options) was taken into account in the scoping process.

- 2.3.3 However, it was noted in the Scoping Report that the engineering options at that stage of the process were representative of the potential areas and types of development and infrastructure which are being considered by DPC, to identify how the enhanced development of the port estate may be best facilitated.
- 2.3.4 The engineering options/concepts were developed to assist in informing the consultation process and as a result of that consultation process, some amendments to these proposals have been implemented and which are now presented in the Masterplan.
- 2.3.5 Following the scoping process and development of the SEA Scoping Report, the environmental aspects which were considered likely to be impacted significantly by the implementation of the Masterplan were identified and included:
- Biodiversity – Flora and Fauna.
 - Flood Risk.
 - Water – Surface Water.
 - Water – Groundwater.
 - Noise and Vibration.
 - Air Quality and Climate.
 - Cultural Heritage – Archaeology and Architectural.
 - Landscape.
 - Populations, Human Health, Population and Deprivation .
 - Transport.
 - Waste Management.
- 2.3.6 Following the scoping process, Soils and Geology was scoped out as it is not expected that the implementation of the Masterplan will impact significantly on the soils and geological environment.
- 2.3.7 However, there remains the requirement for appropriate management of soil arisings during excavation works and the potential of such arisings on site does present the potential for significant impacts. Soil arisings will result from activities such as ground excavation, cut and filling, reclamation activities, construction of deep foundations and demolition of buildings. However, this aspect is addressed in Section 18 under Waste Management.
- 2.3.8 Full details of the Scoping process are presented in the publicly available DPC Strategic Environmental Assessment - Scoping Report, July 2011.

2.4 Consultation

- 2.4.1 The SEA Regulations and the EPA Development of SEA and Methodologies Guidance identifies that consultation with environmental authorities is required, during the scoping stage. This is required to assist in confirming the scope and level of detail to be covered in the SEA Environmental Report.

2.4.2 DPC initiated preliminary consultation with a number of authorities with regard to the Masterplan and the engineering options for consideration. The details of the consultation process to date are described in detail in Section 3 of this report.

2.5 SEA Environmental Report Assessment Methodology

2.5.1 The assessment of impacts in this report relates to the environmental aspects which have been scoped into the SEA Environmental Report as identified in the Scoping Report.

2.5.2 This environmental assessment process has been implemented to assess the likely environmental impacts of the final preferred Masterplan Engineering Options. The assessment relates to the potential construction and operational phases of the engineering options.

2.5.3 A level of importance is assigned to features (i.e. baseline environment, receptors) identified as relevant to port. The level of importance is assigned in accordance with the details outlined in Table 2.2. Having identified the sensitivity of the relevant feature, the potential impacts arising from the future development of the Masterplan were assessed.

2.5.4 Table 2.1 below outlines how, in accordance with the SEA legislation, “secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects” were accounted for. There are also additive and neutralising effects.

Table 2.1: Different Types of Effect in the SEA of the Masterplan

Type of Effect	Definition	How Captured by the SEA
Secondary	“Secondary or indirect effects are effects that are not a direct result of the plan, but occur away from the original effect or as a result of a complex pathway. Examples of secondary effects are a development that changes a water table and thus affects the ecology of a nearby wetland; and construction of one project that facilitates or attracts other developments.” (ODPM, 2005, p.78)	As part of all assessments presented in Chapters 7 through 19.
Positive / Negative	Negative effects are those which cause harm or a deterioration in the status of a given environmental feature, wildlife population or community. Positive effects create benefits for the environment or a community.	
Short, Medium and Long-Term	These are timescales which are not defined by any universally accepted standard. They therefore represent the coverage of effects over time generally.	The assessments of Chapters 8 – 18 address: Short-term: covers temporary construction effects and the onset of permanent effects Medium-term: covers effects which occur at the early stage of operation Long-term: covers effects which occur after decades, once all is operational and such things as mitigation planting has matured.
Permanent and Temporary	Permanent effects are those which last a very long time, and may not in fact be ‘permanent’ (e.g. a constructed building that has an impact could in theory be knocked down, but the affect of its presence is considered permanent). Temporary effects are those which have a limited duration. They may last a long time, but by the long term, they are no longer significant.	

Type of Effect	Definition	How Captured by the SEA
Cumulative	“Cumulative effects arise, for instance, where several developments each have insignificant effects but together have a significant effect; or where several individual effects of the plan (e.g. noise, dust and visual) have a combined effect.” (ODPM, 2005, p.78)	Cumulative effects with projects external to the Masterplan are addressed in Chapter 19. Cumulative effects within the Masterplan are the subject of the entire assessment.
Synergistic	A type of cumulative effect. “Synergistic effects interact to produce a total effect greater than the sum of the individual effects. Synergistic effects often happen as habitats, resources or human communities get close to capacity. For instance a wildlife habitat can become progressively fragmented with limited effects on a particular species until the last fragmentation makes the areas too small to support the species at all.” (ODPM, 2005, p.78)	
Additive	A type of cumulative effect. The simple sum of all the effects (e.g. overcoming community severance in more than one distinct location)	
Neutralising	A type of cumulative effect. Where effects counteract each other to reduce the overall effect (e.g. a new road on the left bank of a river encroaches on the floodplain, but equivalent flood storage capacity is provided by another project on the right bank).	

2.5.5 The effects were assigned a significance and magnitude rating, details of which are contained in Table 2.3 and 2.4.

2.5.6 As a result of the consultation process and during the initial development phase of the SEA Environmental Report, a slight amendment was made with regard to assigning the level of importance to features/receptors. An additional importance level of “very high” was incorporated into the process to distinguish between receptors which are classified as being internationally designated / valued, nationally rare. This resulted in subsequent changes to the significance and magnitude ratings for the assessment process. All the relevant updates are reflected in Tables 2.2 to 2.4.

Table 2.2: Level of Importance/sensitivity of Potential Receptors

Importance Sensitivity	Features	Examples
Very High	Internationally designated / valued or nationally rare	Natura 2000 / Natural Heritage Areas / RAMSAR designated sites Designated salmonid waters; World Heritage / UNESCO designated sites
High	Nationally designated site which is located in the vicinity of the port estate; Receptors located in the immediate proximity of the port boundaries;	Sites designated under the National Monuments Act; Residential receptors located in the immediate vicinity of the port estate
Medium	Locally designated; Receptors located within view of the port operations;	Regular or regularly occurring populations of species assessed to be important on a local level Receptors located not within the immediate vicinity of the port but with an overview of the port operations Landscape features relevant to a Landscape Character Area and identified in the local Development Plan Locally designated amenity / green / recreational areas
Low	Not designated but of local value / amenity; Receptors with no immediate view of port operations.	Sites containing small areas of semi natural habitat which may be deemed important on a local level for wildlife; Receptors located in the communities which are established in the area of the port operations/ docklands but with no immediate view of port operations

2.5.7 The magnitude of the potential environmental impact has been assessed in accordance with the details outlined in the Table 2.2. This process provides a transparent approach to the impact assessment process that allows the decision making process to be clear to stakeholders.

Table 2.3: Magnitude of Impacts

Magnitude of Impact	Examples	Importance / Sensitivity of the Baseline Environment (Receptor) – as assigned in Table 2.1			
		Very High	High	Medium	Low
High Positive	<p>Creation of a feature which will provides long-term / lasting benefits</p> <p>Significant progress in terms of an existing problem</p> <p>Significant positive impact on an international/national scale</p>	+++	+++	+++	++
Medium Positive	<p>Improved management of an existing feature – such as a designated area</p> <p>Positive impact to a number of areas or features across an area</p> <p>Positive impact on a regional scale</p>	+++	+++	++	+
Low Positive	<p>Positive change to one specific area or feature</p> <p>Slight reduction of an existing problem – noticeable progress</p> <p>Positive impact on a local scale</p>	+++	+++	+	+
Neutral	No identified impact	0	0	0	0
Low Negative	<p>Negative impact to one area or feature of an area</p> <p>Causing a noticeable impact on a receptor/function</p> <p>Negative impact on a local scale</p>	---	---	-	-
Medium Negative	<p>Negative impacts on a number of features of an area</p> <p>Causing an impact which will impact how a feature/receptor functions</p> <p>Negative impact on a regional scale</p>	---	---	--	-
High Negative	<p>A negative impact which may severely impact on how a feature or an area will function</p> <p>Causing an impact which will severely impact how a feature/receptor functions</p> <p>Significant negative impact on an international/national scale</p>	---	---	---	--

2.5.8 Table 2.3 details how the categorisation of the magnitude and significance of potential impacts is defined.

Table 2.4: Significance of Impacts

Significance of the Effect	Symbol
Major Beneficial	+++
Moderate Beneficial	++
Minor Beneficial	+
Negligible	0
Minor Adverse	-
Moderate Adverse	--
Major Adverse	---

2.5.9 The SEA Environmental Report also considers the potential cumulative effects of the Masterplan in combination with other relevant plans / projects relevant to the Dublin Port Estate which are detailed in Appendix A of this report.

2.6 Assessment of Alternatives

2.6.1 The assessment of alternatives has been undertaken in line with the methodology described in the above sections. This is with the exception of the upper-tier alternatives, including the options for 'port expansion vs. no port expansion' and the 'port-wide alternatives', as these could not be quantified due to their strategic level. These upper-tier alternatives were therefore subject to an assessment similar to a compatibility appraisal. This method (as described in Section 4.5 below) simply identifies whether or not there are potential conflicts with an SEA Objective and thus the potential for negative effects (-) or synergies and the potential for positive effects (+) relative to the baseline. Alternatively, there can be no relationship / no significant potential for effects (0) or a mix of potential for effects depending on how the proposed action is carried out (x/x, e.g. +/-).

2.7 SEA Environmental Report Structure

2.7.1 The layout of the SEA Environmental Report follows the required format identified in the SEA Directive and EPA SEA Synthesis Report. The format is presented below:

- 1.0 Introduction
- 2.0 SEA Approach, Methodology and Limitations
- 3.0 Consultation
- 4.0 Key Objectives of the Dublin Port Masterplan
- 5.0 Review of Other Relevant Plans and Programmes
- 6.0 Assessment and Selection of Alternatives
- 7.0 Characterisation of the Existing Environment of Dublin Port
- 8.0 Biodiversity – Flora and Fauna
- 9.0 Flood Risk
- 10.0 Water -Surface Water
- 11.0 Water – Groundwater

- 12.0 Noise and Vibration
- 13.0 Air Quality and Climate
- 14.0 Cultural Heritage – Archaeology and Architectural
- 15.0 Landscape
- 16.0 Populations
- 17.0 Transport
- 18.0 Waste Management
- 19.0 Cumulative Effects
- 20.0 Summary of Mitigation and Monitoring Proposals
- 21.0 Next Steps

3 Consultation

3.1 Introduction

3.1.1 The SEA consultation process aims to:

- Enhance transparency in decision-making, by providing information which allows for early identification and mitigation of impacts;
- Provide a more comprehensive understanding of the baseline environment and relevant key individual and community issues and values (so more comprehensive data can be integrated into the preparation of the Masterplan);
- Obtain information about potential environmental effects at an early stage of the SEA process; and
- Increase understanding, avoiding unnecessary controversy and delays in the decision-making process at later stages due to public opposition arising from lack of understanding. (EPA, 2003)

3.2 Consultation Undertaken during the Scoping Stage

3.2.1 In addition to identifying necessary statutory stakeholders, the SEA regulations also require the identification of stakeholders, non-Government organisations and the public affected or likely to be affected by, or have an interest in, the Masterplan process.

3.2.2 In March 2011, DPC commenced a consultation process for the Masterplan. The aim of the process was to collate the views of a wide circle of stakeholders (statutory and non-statutory) on the operations and future development of Dublin Port.

3.2.3 The consultation process accompanying the scoping stage included the following elements:

- Publication of the Masterplan Issues Paper outlining the issues that were being taken into consideration in the context of the Masterplan. The DPC Issues Paper identified that both the SEA and Appropriate Assessment processes were being integrated into the Masterplan process. The DPC Issues Paper invited comments/submissions from stakeholders;
- A comprehensive media information campaign was implemented to assist in increasing interest and awareness of the Masterplanning process. This media campaign included a dedicated micro website, email address and You Tube video detailing the background to the Masterplan process;
- Public information notices including advertisements, leaflet drops and local information briefing evenings (East Wall, Ringsend and Clontarf areas) for local residents and stakeholders;
- Development and issue of the SEA Scoping Report to statutory and non-statutory stakeholders. This was complimented with a number of face to face meetings and workshops to review and discuss the Masterplan process;

- A seminar of the soft values of the Dublin Port and a conference hosted by DPC with the theme “Dublin Port 2040 facilitating trade at the heart of the city and national economy”.

3.2.4 Table 3.1 outlines the consultation undertaken for the scoping stage of the SEA Environmental Report with regard to the statutory stakeholders identified in the SEA regulations.

Table 3.1: Statutory Stakeholder Consultation

Consultee	Consultation Method
Department of Environmental Community and Local Government	Issued with a copy of the DPC Issues Paper + SEA Draft Scoping Report for comment. Face to face workshop with department representatives at Dublin Port
Department of Arts Heritage and the Gaeltacht : National Parks and Wildlife Service	Issued with a copy of the DPC Issues Paper + SEA Draft Scoping Report for comment. Face to face workshop with department representatives at Dublin Port
Department of Communications, Energy and Natural Resources: Inland Fisheries Ireland	Issued with a copy of the DPC Issues Paper + SEA Draft Scoping Report for comment. Face to face workshop with department representatives at Dublin Port
Environmental Protection Agency	Issued with a copy of the DPC Issues Paper + SEA Draft Scoping Report for comment. Face to face workshop with department representatives at Dublin Port
Department of Agriculture, Marine and Food : Marine Institute + Federation of Irish Fishermen	Issued with a copy of the DPC Issues Paper + SEA Draft Scoping Report for comment. Invitation issued to attend face to face workshop with DPC – The Department representatives were not in a position to attend.
Dublin City Council including representatives from: Planning, Biodiversity, Archaeology and Heritage	Issued with a copy of the DPC Issues Paper + SEA Draft Scoping Report for comment. Face to face workshop with department representatives at Dublin Port

3.2.5 Other consultees relevant to and included in the Masterplan consultation process are outlined below:

- General Public including Residents Associations, Amenity Groups etc.
- Dublin Port Tenants
- Local Business Community including haulage associations, exporter groups etc
- The Heritage Council;
- Waterways Ireland;
- An Taisce;
- Flood Risk Assessment Projects including Fingal East Meath Flood Risk Assessment and Management (FRAM) Study, Dublin Flood Resilient City Project and the River Dodder Flood Risk Assessment and Management Study;
- Department of Transport;
- National Transport Authority;
- Dublin Docklands Development Authority;
- National Roads Authority; and
- Railway Procurement Agency.

3.2.6 Table 3.2 identifies the responses received from the statutory consultees subsequent to the scoping stage and how these were addressed as part of the Masterplan and SEA process.

Table 3.2: Statutory Stakeholder Consultation

Statutory Consultee	Response Submitted with regard to the Masterplan	How Responses were addressed.
Department of Environmental Community and Local Government	<p>Correspondence received from the Department with regard to the SEA Scoping Report.</p> <p>This correspondence related to whether the uses of different ports under the control of DPC had been considered.</p>	<p>This response was considered in the development of Section 6: Assessment and Selection of Alternatives.</p>
Department of Arts Heritage and the Gaeltacht : National Parks and Wildlife Service	<p>Responses received with observations on the Masterplan and SEA Scoping Report.</p> <p>Main observations are summarised and included:</p> <ol style="list-style-type: none"> 1. The Masterplan should not adversely impact on designated sites or protected species. All development proposals shall comply with Article 6(3) + (4) of the Habitats Directive. 2. The Masterplan should take into account the need to protect, retain and enhance biodiversity in general as per the National Biodiversity Plan. 3. All designated sites within the Masterplan should be listed and mapped. 4. Recommendations were made with regard to the SEA Biodiversity Objective. It is indicated that the Objective should be revised to account for habitats and species within and outside of the designated sites. 5. The Draft Plan should be screened for AA in accordance with Departmental Guidance. 	<p>As part of the Masterplan, a Strategic Natura Impact Statement was developed.</p> <p>The purpose of the Strategic Natura Impact Statement is to confirm if the Masterplan 2011-2040 is likely to have significant impacts and to explain the strategic approach to mitigation including providing a framework within which Appropriate Assessments for individual options can be undertaken in the event that development/construction of that option progresses in the future – refer to Appendix C for the report details.</p> <p>Additionally, the SEA biodiversity objective has been revised to account for the NPWS recommendations with regard to habitats and species outside of the designated sites – refer to Section 8 for details.</p> <p>Section 8 of the Report classifies the International sites (Natura 2000), National</p>

Statutory Consultee	Response Submitted with regard to the Masterplan	How Responses were addressed.
	<p>6. Appropriate consultation should be undertaken for the appropriate assessment process.</p> <p>7. It is identified that a proposed reclamation within the designated areas and relocation of the tern colonies would be considered significant and therefore Article 6(4) of the Habitats Directive would need to be complied with.</p>	<p>sites (NHA's) and also non designated terrestrial flora and fauna as receptors and the potential impacts of the Masterplan are assessed against these accordingly.</p>
<p>Department of Communications, Energy and Natural Resources: Inland Fisheries Ireland</p>	<p>Responses received with observations on the Masterplan Issues Paper and SEA Scoping Report.</p> <p>Main observations are summarised and included:</p> <ol style="list-style-type: none"> 1. Developments within the port have the potential to impact directly on aquatic ecology in the Liffey, Dodder + Tolka catchments. 2. Appropriate measures are required to ensure the protection of local aquatic ecological integrity. 3. The issue of fisheries habitat loss through reclamation is considered a significant one. 4. There is a requirement for real time fish surveys for areas where information is not extensive at present. 5. Details provided with regard to potential for construction based impacts from development and the requirement for appropriate habitat and water quality monitoring to be undertaken 	<p>Section 8 of the Report classifies aquatic ecology and fisheries as a receptor and the potential impact of the Masterplan are assessed on this receptor.</p> <p>In undertaking the assessment, the potential for impacts resulting from impacts such as loss of habitat and construction activities were considered.</p>

Statutory Consultee	Response Submitted with regard to the Masterplan	How Responses were addressed.
Environmental Protection Agency	<p>Responses received with observations on the Masterplan Issues Paper and SEA Scoping Report.</p> <p>Relevant EPA SEA Guidance was attached to the submission</p> <p>Main observations are summarised and included:</p> <ol style="list-style-type: none"> 1. Reference was made regarding the integration of the Greater Dublin Area Regional Planning Guidelines 2010-2022 and the Offshore Renewable Energy Development Plan into Section 5: Review of Other Plans + Programmes 2. Consideration should be given to the establishment of an Integrated Environmental Management Plan 3. An integrated approach to the management of habitats and species within the zone of influence of Dublin Port should be adopted in association with relevant bodies. 4. DPC should consider establishing a baseline carbon footprint for existing port activities to be monitored during the lifetime of the Masterplan. 5. SEA Objectives should incorporate an adherence to the Flood Risk Management Guidelines, protection of nationally designated sites and appropriate mitigation for the remediation of material. 	<ol style="list-style-type: none"> 1. The Review of Plans and Programmes attached in Appendix A has been updated to include for the additional guidelines and plans outlined by the EPA. 2. The development of an Integrated Environmental Management Plan has been incorporated into the proposed mitigation for the Masterplan. 3. The Strategic Natura Impact Statement identifies the proposed strategic approach with regard to the Masterplan and Natura 2000 designated sites. 4. DPC are in the process of developing a Carbon Footprint tool relating to DPC activities and operations. It is considered that this will continue to be monitored and developed in future years. 5. The SEA Objectives have been revised to reflect a commitment to adhere to the Flood Risk Management Guidelines. The SEA ER assessment section refers to the requirements to ensure that dredging material is appropriately managed.

Statutory Consultee	Response Submitted with regard to the Masterplan	How Responses were addressed.
Department of Agriculture, Marine and Food : Marine Institute + Federation of Irish Fishermen	No response received to date. Copies of the Masterplan + SEA Draft Environmental Report will be issued to the stakeholder in November 2011.	N/A
Dublin City Council including representatives from: Planning, Biodiversity, Archaeology and Heritage	Responses received with observations on the Masterplan Issues Paper and SEA Scoping Report. Main observations are summarised and included: <ol style="list-style-type: none"> 1. Visual improvements within the port from land and sea side – including how new reclamations would look when viewed from the water and can the heritage value of the south side contribute to the ports attractiveness. 2. The proposal to provide access to walkers and cyclists will improve the amenity value of the port. 3. Improvements could be made to the amenity value of the Poolbeg area and subsequent access to this area. 4. Provision of easy connection to the city from the port is required. 5. Use of existing Dublin Port archives to inform future tourist /information initiatives. 6. Phasing of the Masterplan must be addressed. 7. Development of the Masterplan giving recognition of Dublin’s historic position as a maritime city. 8. Improvement of public transport links into and through the 	It is considered that the observations identified in the DCC submission are addressed in Sections 8 – 18, the SEA Assessment Sections. Additionally, mitigation requirements which have been incorporated as part of the Masterplan or which have been identified as part of the SEA process for incorporation are also discussed.

Statutory Consultee	Response Submitted with regard to the Masterplan	How Responses were addressed.
	<p>port</p> <p>9. Appropriate integration and linkage with the city and the port</p> <p>10. The Masterplan should take account of the Water Framework Directive and it's associate targets + objectives</p> <p>11. The built heritage and history of the port needs to be valued and protected.</p> <p>12. Appropriate consideration needs to be given to potential flood risks + impacts from sea level rise</p> <p>13. All developments shall give appropriate consideration to incorporating sustainable drainage requirements.</p>	

3.2.7 Additionally some of the main aspects which were identified in the submissions from the non-statutory stakeholders and relevant to the SEA Draft Environmental Report are outlined below:

- General support for the development of the port in terms of tourism + cultural development and also with regard to “boundary softening” proposals;
- The potential for future reclamation projects in the Bay – in terms of the perceived amenity + visual impacts and also with regard to the Natura 2000 designations;
- The need for integrated and “holistic” planning between the port and the city;
- Servicing the port with appropriate public and private transport – future proposals for public transport extension into the estate and the provision of more efficient access for bicycles and pedestrians;
- Climate change / potential for flooding impact and sea level rise;
- Management of noise impacts from the port estate; and
- Demonstration that the current land extents are at optimal use.

3.3 Dublin Port Draft Masterplan and SEA Draft Environmental Report Consultation

3.3.1 The publication of the SEA Draft Environmental Report document for consultation, alongside the Draft Masterplan and Draft Strategic Natura Impact Statement, provided an opportunity for stakeholder and local community consultation.

3.3.2 The formal consultation process, which was undertaken in accordance with SEA Regulations, was initiated in November 2011 and provided an opportunity for stakeholders to review and comment upon these documents.

3.3.3 The consultation responses received on the Draft Masterplan and SEA Draft Environmental Report have been taken into account in the revision and publication of the final reports.

3.3.4 Submissions were received from three Political Parties. The principal views expressed in these submissions are summarised below:

- The negative impact of the infill/reclamation on the South Dublin Bay SPA and River Tolka Estuary SPA including loss of wetland habitat, long term changes in morphology, sediment regime and benthic food resource, hydrometric changes, and use of the development sites by bird species such as the Brent Geese.
- Potential for visual impact by future infill projects
- Potential construction and traffic based impacts from future infill projects
- The failure to consider alternatives in detail and the optimizing and enhancing of existing lands rather than the requirement for further lands by reclamation.
- The submissions consider that little effort or consideration has been given to engage stakeholders regarding better use of waterside lands.
- The expansion of the port southside without development of rail freight will result in heavy vehicle traffic, contrary to planning and sustainable development of the area.

- A shortage of land and lack of deep berths in relation to the wind farm proposals, together with the generation of excessive traffic from servicing needs. Proposals are contrary to planning and sustainable development of the area.
- Community Impact of the Masterplan. Appropriate consideration has not been given to the interaction of the community and impact on surroundings; to Dublin Ports Corporate Social Responsibility; to sustainable public transport such as the Luas tie in; to the specific considerations of the Coast Guard Residents Group and the management of the visual impact of the port on the surrounding community.
- Flooding. Consideration requested to be given to the effect of the developments on the coastal regime and evolution; flood risk (coastal and river), coastal erosion, climate change; sustainable protection against flooding, and the development of a hydraulic model of Dublin Bay and Liffey Estuary System. The submission suggests that DPC have an obligation to be involved with city flood defence plans.
- A Local Labour Charter, where an agreed percentage of jobs created are offered to residents in the area first, is sought.
- The Masterplan should reiterate the Ports commitment to community gain, with the distribution of funds independently monitored and transparent, with specific reference to the funding of educational opportunities, such as third level education, for the community.
- The inclusion of Irish and English in all port signage.
- The historical context of the Port and how the Port proposes to identify and acknowledge and record its local history to be included in the Masterplan.
- The benefit to the community if consideration is given to 'a Port without walls' that's enables integration with the adjoining areas without compromising security.

3.3.5 Submissions were received from three residents groups, eight individual residents and one local group. The principal views expressed in these submissions are summarised below;

- Noise levels currently and as a result of the Masterplan developments and associated traffic.
- The High Court Injunction 2001/26MCA and 2011/7518P and the response to these are not mentioned in the Masterplan.
- Intrusiveness of the Northern Port Perimeter.
- Long Term Safety of the Seveso sites within the Port.
- Disturbance of seabed contaminants due to dredging and disposal and its impact on water users in the Bay.
- Flooding concerns in the Irishtown and Ringsend area.
- Objection to the proposed expansion of the Port by Reclamation and Vessel Turning Area and berths.
- Underestimation of the negative impacts in relation to Noise and Vibration, Air Quality, Landscape and Traffic Congestion.
- Inflated projections of growth contained with the Masterplan.

- The DCC flood defence scheme at Clontarf mitigating any detrimental effects of flooding 21 hectares reclamation.
- Landscaping of the boundary, need to be ecologically friendly.
- Travel and Transport links in relation to HGV bulk movement concerns.
- Nitrogen Dioxide being observed as a brown haze over the Port on frosty mornings.
- Sandblow forming a crescent shape within the strand, which may form a future feature/reef.
- Querying if a marine ecologist was consulted with regards the relocation of tern colonies, and the presence of black guillemots in the south port area.
- Request that Monterey Cypress (*Cupressus macrocarpa*) is not excessively planted due to soil acidification issues. Request not to plant Yucca trees.
- Dublin Port Maritime Museum as an alternative to a Visitor Centre.
- Publishing of real-time environmental monitoring data is requested.
- The word 'putative' requested to be replaced with 'assumed'.
- Reintroduction of Dublin as a Port City.
- Docklands Workers Preservation Society and the promotion of the docklands for tourism.
- Surplus lands requested to be used as community gardens.
- Education and the targeting of skills to Port employment sought.
- DPC Tenants and their agreements requested to be reflective of the Ports positive 'good neighbour' sentiments and existing conflicts cited.
- Maximisation of current Port lands sought before infill/reclamation is pursued.

3.3.6 Submissions were received from six stakeholders including governmental and non governmental organisations. The principal views expressed in these submissions are summarised below;

- General support of the Masterplan.
- The current land use zoning for the proposed Site 5 (Bulk Solid) area may be inconsistent with the Masterplan proposal or represent an underutilisation of these lands.
- Clarification required as to the subject lands described in relation to the cruise terminal proposals.
- New ways of bridging the port and the city need to be embraced to account for the area of land in the north city that is undeveloped and unappealing.
- Cooperation and consultation offered/requesting by stakeholders for the Masterplan development proposals.
- Request that proposals do not pose a risk to future capacity, stability or structural safety of the Dublin Port Tunnel.

- Transport modelling exercise requested to be undertaken in relation to HGV movements, road and rail, in the transport network.
- Concern over no mention of the Eastern Bypass, and the retention of the route corridor.
- The new quay wall and deep water berth and the full extent of the infill requires to be reconsidered/reduced due to impacts on the heritage and natural environment.
- With the Lo-Lo enhancements at Poolbeg, no mention of noise screening has been included.
- More detail and consultation on the environmental enhancements required.
- Suggestions as to aspects to be included in the Transport Plan.
- Architectural Conservation Areas should be referenced in the Masterplan document as well as the SEA.
- Proposed new bridge across the Liffey not mentioned in the sNIS.
- Recommendation that here should be multiple biodiversity objectives.
- The findings of the sNIS with regards IRPOI requested to be included in the SEA Non Technical Summary.

3.3.7 Submissions were received from five environmental stakeholders. The principal views expressed in these submissions are summarised below:

- Opposition/concern to the infill/reclamation of Dublin Bay and the associated habitat loss.
- Concern over the inclusion of proposed reclaimed areas/infill site not being noted in Masterplan drawings, and giving the impression they are already part of the port.
- Consideration to be given to all designated and non designated sensitive (fish) species
- Future development shall prioritise avoidance, and then mitigate via reduction and/or remedy.
- Real-time fish survey required and to be including in the Masterplan monitoring programme
- There must be no negative impact on the species identified in the Poolbeg Water intake.
- Removal of hard stratum will impact fish therefore appropriate mitigation/consultation required.
- Link between bird and fish species highlighted for inclusion in the sNIS, in relation to loss of foreshore habitat.
- Water and habitat quality required to be monitored.
- Proposal for the Public Amenity Area on the site of Pigeon House Hotel, Power Station and Fort (Pigeon House Conservation Area) required to be targeted for sensitive sustainable development, and incorporation of features associated with their original function while providing comprehensive cultural heritage interpretation. The conservation study and re-use plan for the area to be the basis of this.

- 3.3.8 Detailed submissions were received from the Environmental Protection Agency (EPA) and the Department of Arts, Heritage and Gaeltacht on the environmental reports. Consequently, these submissions and responses are presented in more detail in Appendix D of this report.
- 3.3.9 Submissions were received from five businesses in the area. The principal views expressed in these submissions are summarised below:
- Boundary softening works detailed in the Masterplan are not appropriate.
 - Submission of a proposal for environmental enhancements at the port.
 - Infrastructure proposals and zoning objectives are in contradiction with the Dublin City Council Development Plan.
 - Proposals submitted for the Development of the proposed Port Centric area, including office development to be on the western boundary of that area.
 - Absence of reference to the Poolbeg Framework Plan and A Vision for Dublin Bay
 - Traffic Impact Assessment required.
 - Harp Monument Project proposal/feedback request.

Under the remits of the Masterplan and SEA Environmental Report, all the comments have been reviewed and given thorough consideration.

Where specifically relevant to the SEA Environmental Report and sNIS, clarifications and minor amendments have been made in these reports based on the comments received.

4 The Key Objectives of the Dublin Port Masterplan

4.1 The Role of Dublin Port Company

- 4.1.1 Dublin Port Company is a self-financing, private limited company wholly-owned by the State, whose business is to manage Dublin Port. Established as a corporate entity in 1997, Dublin Port Company is responsible for the management, control, operation and development of the port.
- 4.1.2 However, more specifically, Dublin Port Company has a particular remit in terms of which activities it manages and over which it retains control, whilst there are some activities which remain the responsibility of the companies who lease the Dublin Port Company's land. Dublin Port Company is responsible, for example, for coordinating ship access and egress, fire safety and coordinating utilities management (e.g. water and electricity supply). It also has a duty to its leaseholders to facilitate efficient operation on land, even whilst the Company considers providing new developments at the port to maintain its attractiveness to business or increase capacity.
- 4.1.3 Relative to this SEA, it is important to establish that Dublin Port Company is not directly responsible for, and has a limited influence on:
- timing in market demand – this includes both variations in the level of usage of the port's full capacity, and also the timing in which the port's maximum capacity may need to be reviewed and increased;
 - total shipping into and out of Ireland generally – as Section 6 will discuss, the port responds to market demand, and if it were to restrict its growth, it is expected that approximately the same amount of sea shipping would still occur. This demand would require to be facilitated in other ports which have suitable capacity and physical capability to facilitate the shipping needs.
 - the selection and operation of loading and storage equipment on leasehold land – although DPC retains a role in assuring safety and environmental management, the overall selection of this equipment and responsibility lies with the leaseholder, and is subject to planning conditions, regulations and permitting. This includes the requirement that planning applications must be submitted to and approved by Dublin City Council, and operation of plant is potentially subject to Integrated Pollution Prevention and Control (IPPC) licensing, regulated by the Environmental Protection Agency (EPA);
 - changing the use of long-term leasehold land – space available for development or improvement for container trade operations has been limited, as a number of suitable sites are held under long-term lease. This limits DPC's ability to influence activities on these sites; and
 - total road freight within Dublin City Centre west and south of the port, and more generally traffic routes permissible by Heavy Goods Vehicles (HGVs) outside of the port – in particular, Dublin City Council has implemented a '5+ Axle Ban' in Dublin City, which applies from 7AM to 7PM, seven days per week. This forces the majority of HGV port traffic through the port Tunnel and directly onto the M50. The amount of freight generated by Dublin and destined for Dublin is only indirectly associated with Dublin Port. Again, as Section 6 will discuss, the port responds to market demand, and if it were to restrict its growth, approximately the

same amount of freight would still travel into and out of Dublin, but from longer distances.

- 4.1.4 This SEA has taken the above factors into account in its assessment of the potential effects of the Masterplan, but does consider the potential for the Masterplan to facilitate other future development.

4.2 Background Context – Current Operations

- 4.2.1 Dublin Port handles some 17,000 vessel movements every year, varying in size from small coasters to very large cruise vessels. The range of vessels includes Roll-on Roll-off (Ro-Ro) passenger ferries, Ro-Ro freight vessels, oil, gas and molasses tankers, Lo-Lo container vessels, bulk carriers, car carriers, cruise vessels, cement carriers and a range of specialist vessels such as naval vessels, lighttenders, tugs, supply ships, historic craft, and large sailing ships.
- 4.2.2 Over the last five years, throughput in Dublin Port has averaged 28.9 million tonnes reaching a peak of 30.9 million tonnes in 2007. Although volumes dropped off subsequently, growth returned in 2010 with an increase of 6.1 % in throughput over the previous year even as the economy slumbered.
- 4.2.3 In order to support vessel and cargo movements, Dublin Port consists of a variety of facilities. These include different types of berths, working areas adjacent and near to the berths and storage areas generally throughout the port. Some of the key requirements of these facilities are discussed below.
- 4.2.4 Roll-on-Roll-off (Ro-Ro), as the name implies, refers to the activity where vehicles are driven on and off specialist vessels called Ro-Ro vessels or ferries. A Ro-Ro vessel requires that it can berth with the ship's loading ramp connecting to a similar berth-side ramp or link span, enabling the vehicles to be driven on and off the vessel. Ro-Ro freight is divided into two main groups, namely, accompanied and unaccompanied units. "Accompanied" refers to trailer units to which the cab is attached at all times and the driver accompanies the vehicle.
- 4.2.5 "Unaccompanied" refers to freight trailers that are delivered and collected from the compound adjacent to the vessel. These trailers are driven on and off ships by site operators (Stevedores) workers. The main difference in the two operations is the amount of land needed to service the units. In the case of accompanied freight, the units drive off the vessel and leave the port directly. Accompanied units boarding vessels will generally only occupy a small area prior to boarding. However, unaccompanied units require considerable space as room must be provided ashore for those units coming off the ship before any can be loaded.
- 4.2.6 Load-on Load-off (Lo-Lo) – container vessels pose particular requirements for cargo handling. The cargo handling equipment for containers is divided into two main groups: primary and secondary handling equipment. Primary equipment is that used to load and unload containers on and off the ship. There are two main types of primary handling equipment in use in Dublin Port: rail mounted gantry cranes and dock mobile cranes.
- 4.2.7 Secondary handling equipment refers to the equipment used to feed the primary cranes, take containers from shipside areas to different areas within the compound and stack the containers. They are also used to load/unload units on and off the trucks that deliver them to the compound or take them to their destination outside of the port. Dublin Port has seen all these different types of equipment in use as the container trade has developed, and is now at the stage where the combination of primary and

secondary handling equipment ensures quick turnaround of ships and better use of the space available within the port.

- 4.2.8 Bulk liquid – liquid petroleum products are discharged from tankers at four dedicated berths in the north port area and then pumped through a “common” pipeline system, shared by all operators, to storage tanks within the port. There is storage capacity at the port for approximately 300,000 tonnes of oil products.
- 4.2.9 Bulk solid - Bulk solid refers to the materials that are handled in bulk (such as grain, animal feeds, fertilizer, peat moss, cement, petroleum coke, furnace slag and scrap metals). As the name implies, these materials are in loose form and not contained in bags, containers or other forms of packaging. The materials are loaded and discharged by “grabs” operated by dock mobile cranes. Bulk cement is handled in the south port area by a dedicated piping system through which the material is pumped directly from the ship to the customer’s premises.
- 4.2.10 Cruise liners – Dublin Port Company has succeeded in attracting over eighty cruise vessels to the port annually in recent years. These require sufficient berthing space and isolation from other port activities for safe and efficient access and egress of passengers into Dublin City.
- 4.2.11 Imported new and pre-owned vehicles – these vehicles are transported in ships specifically designed for their transportation. The importation of vehicles requires large areas of open, surfaced ground for parking the vehicles until they are collected by truck for onward delivery to the customer.
- 4.2.12 ‘Project’ cargoes – these vary in nature, an example being mainline and suburban rail carriages or large wind turbines to be transported onwards to different locations in the country. Each of these has its own demands, but generally requires ship-side storage space and flexible working areas, as unlike Ro-Ro and Lo-Lo, the key driver for these shipments is not necessarily to do with either quantities or speed, and requirements may vary.

4.3 Background Context – Future Demand

- 4.3.1 With a resumption of growth in 2010, and in light of the long lead time for port development projects, Dublin Port Company is assessing what growth there will be over the coming years and what additional capacity will need to be provided to cater for this growth. Based on historical trends, a comparatively modest growth rate of just under 2.5 % would cause volumes to more than double to 60 million tonnes in 2040.
- 4.3.2 Between 1980 and 2010, port volumes grew from 7.3 million to 28.9 million tonnes without any increase in the port’s land area, but there is a limit to how much more freight can be put through the port’s existing estate. To achieve 60 million tonnes by 2040, additional port development will be required and the provision of this development is a central challenge for both the port and the city.

4.4 Objectives of the Masterplan

- 4.4.1 The challenge facing DPC and indeed the city is to find the best way to re-integrate Dublin Port and Dublin City within the context of providing capacity to cater for the handling of 60 million tonnes by 2040. This scenario is entirely likely, and the core objective of the Masterplan is to provide the answer to the question: how will Dublin Port handle 60 million tonnes by 2040?

- 4.4.2 If Dublin Port is to reach this target, there will need to be some reconfiguration of the existing port with new developments. The cheapest alternative will always be to make more and better use of existing port lands and Dublin Port Company will continue to do this. However, on the basis of the DPC projected growth estimate for trade through the port, additional lands will be required, and the best estimate is that Dublin Port would need in the order of 30 to 40 additional hectares of port-side land.
- 4.4.3 The Masterplan has considered alternative ways to reconfigure and expand Dublin Port in aid of this target. The SEA assessed a number of these alternatives, and after taking the results into account, a set of preferred alternatives, referred to as 'options', emerged for achieving the required capacity increases. These 'options' are called as such, because port development will have to be timed alongside increases in market demand as and when they occur.
- 4.4.4 This means that the Masterplan does not contain a definitive schedule of developments that will be carried out in Dublin Port. Rather, it is a list of possible options that need to be assessed by reference to issues of demand and capacity, and that are subject to completion of relevant planning and consents requirements.
- 4.4.5 The Masterplan was developed to achieve the following Objectives:

Port Functions

- PF1:** Ensure the safe operation and sustainable development of the port and its approach waters and provide appropriate infrastructure, facilities, services, accommodation for ships, goods and passengers to meet future demand.
- PF2:** Optimise the use of the lands on the port estate through rationalising the distribution and location of specific areas of activity such as Ro-Ro, Lo-Lo, Ferry Services, Cruise Ships, Liquid / Bulk Goods and storage areas with necessary reconfigurations of service facilities, as required.
- PF3:** Recover lands that are not being used for critical port activity and re-use for such activity.
- PF4:** Develop quaysides adjacent to deep water to their maximum in accordance with environmental/licensing requirements.
- PF5:** Use new and developing technology to increase throughput to its maximum.
- PF6:** Identify configurations for extending berthage and storage that mitigate impact on the adjacent environmentally sensitive / designated areas.
- PF7:** Provide adequate water depth to accommodate larger / deeper draught vessels in accordance with environmental/licensing requirements.

Investment and Growth

- IG1:** Utilise the Masterplan as a framework for investment and growth based on the port's projected demand forecasts.
- IG2:** Maximise throughput by means of structured charges relating to timetable and occupancy periods in storage areas.

Integrating with the City

- IC1:** Achieve closer integration with the city and people of Dublin through a commitment to respect soft values associated with the location, operation and impact of the port.

- IC2:** Promote movement linkages in the form of pedestrian and cycle routes.
- IC3:** Enhance the general aesthetics / visual impact of the port around the interface with the city.

Movement and Access

- MA1:** Provide for a public transport route to serve passengers and those working within the port to improve modal transport split.
- MA2:** Develop a transport plan for the Port Estate in conjunction with the National Transport Authority and Dublin City Council
- MA3:** Promote non-motorised sustainable transport modes, including cycling and walking.
- MA4:** Maximise the use of rail transport for goods to and from the port.
- MA5:** Promote the provision of future transport infrastructure that facilitates port shipping and related activity.
- MA6:** Enhance existing infrastructure to provide dedicated access / exit routes to port facilities.

Environment and Heritage

- EH1:** Ensure a development framework that is compatible with the adjoining areas with particular regard for areas which are designated under the Habitats Directive and the Birds Directive in Dublin Bay. This development framework will also take account of the recommendations and mitigation measures arising from the SEA, AA and other relevant plans for the protection of natural resources, including the protection of water resources, designated and non designated sites, aquatic ecology and protection against flood risk.
- EH2:** Integrate new development with the built and natural landscapes of the surrounding area.
- EH3:** Promote sustainable design in the natural and built environment.
- EH4:** Secure the preservation of all Protected Structures within the Port Estate.
- EH5:** To promote in the development of future port facilities the principles of Universal Design to make environments inherently accessible for those with and without disabilities.
- EH6:** A promotion of excellence and focus on good quality in design where possible.

Recreation and Amenity

- RA1:** Promote Dublin Port for recreation and amenity by highlighting walks and cycle routes offering facilities for bird watching and viewing wildlife as well as views of the bay and the wider environment as well as the activity within the port.
- RA2:** Develop landmark attractions such as a Port Heritage Centre or public port centre based on shipping movements and information.

RA3: Maximise public access to the waterfront and enhance the public realm by landscaping and by high cleanliness standards.

Security

S1: Ensure that key areas of the port retain good security provision in accordance ISPS requirements.

Future Review

FR1: Identify a strategy for future review of the Masterplan against underlying assumptions and performance of the port business and also assess how the Master Plan is achieving its objectives and targets as set out in the Plan and the SEA.

4.5 Compatibility Appraisal

4.5.1 An SEA 'compatibility appraisal' was conducted to test the compatibility of the Masterplan Objectives with the SEA Objectives established at the SEA scoping stage in order to identify where they supported each other or conflicted. The goal is not to eliminate conflicts, but to inform development of the Masterplan and secondarily, but not as an essential task, to refine the Masterplan's objectives. This can help in the development of Masterplan options, which can then be developed in a way which helps to address any potential for negative impacts.

4.5.2 The SEA Objectives are numbered for this appraisal process, and provided below.

1. **Population / Human Health and Deprivation:** To improve the strength of the Irish and Dublin City economy, whilst positively attracting business and allowing for the retention and expansion of existing businesses.
2. **Population / Human Health and Deprivation:** To improve the accessibility of community amenities and facilities to local residents
3. **Biodiversity – Flora and Fauna:** Protect and enhance biodiversity in general with particular regard for the nationally and internationally protected sites in vicinity of the port.
4. **Flood Risk and Coastal Management:** To enhance the management of flood risk and coastal erosion, whilst taking account of other flood protection developments in the vicinity of the port.
5. **Water Quality (Surface and Ground):** To improve water quality of the surface and ground water bodies and support the achievement of the WFD objectives.
6. **Water Usage:** To reduce the rate of water usage at the port per unit of freight and passenger throughput.
7. **Noise:** To improve the management of noise impacts and avoid any new significant noise impacts on people or the environment.
8. **Air Quality:** To avoid any significant air quality impacts on people or the environment
9. **Climate Change:** To improve the carbon performance of DPC activities and operations within the port.
10. **Waste Management:** To increase the rate of reuse and recycling at the port, and the amount of reused and recycled materials in construction against industry averages
11. **Archaeological and Architectural Heritage:** To enhance the conservation of archaeological/architectural heritage, and improve our understanding of this heritage, with particular regards to local maritime and industrial heritage

12. **Landscape:** To avoid significant negative impacts of existing and future port development on the landscape character of the area, and achieve benefits where possible
13. **Transport:** To avoid significant negative impacts in terms of traffic levels accessing and exiting the port estate.

4.5.3 The test for compatibility of the Masterplan objectives with SEA Objectives (the SEA Framework) has been supported by a technique and rationale that takes account of:

- the measures or development potentially implemented towards the end of achieving the Masterplan objective;
- the issues or concerns which are covered by the SEA objective through a clear topic definition;
- the status of the relevant baseline (including quantitative and qualitative data), and how it might change over time; and
- current knowledge of the various relationships between development and the objectives of social, economic and environmental sustainability.

4.5.4 The SEA has recommended issues to be mindful of during the development of the Masterplan, and secondarily ways to potentially refine or supplement Masterplan objectives in order to achieve a better balance of incompatibilities and compatibilities.

4.5.5 These changes are considered in order to reduce or eliminate incompatibility or maximise the number of compatibilities. The results of the assessment are shown in Table 4.1.

Table 4.1: SEA Compatibility Appraisal

Symbol	Description
+	Compatible
0	No relationship, or neither compatible nor incompatible
-	Incompatible / Conflicting
/	More than one potential outcome, depending upon the interpretation of the Masterplan objective or the way that it is met

Masterplan Objective	SEA Objective												
	1	2	3	4	5	6	7	8	9	10	11	12	13
PF1	+	+/-	-	-	-	+/-	-	-	-	+/-	-	-	-
PF2	+	+/-	-	-	-	+/-	-	-	-	+/-	-	-	-
PF3	+	0	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-
PF4	+	0	-	0	-	0	0	-	-	0	-	-	0
PF5	+	0	0	0	0	+/-	+/-	+/-	0	+/-	0	0	-
PF6	0	+	+	0	0	0	0	0	0	0	+	+	0
PF7	+	0	-	0	-	0	0	-	-	0	-	-	0
IG1	+	0	0	0	0	0	0	0	0	0	0	0	0
IG2	+/-	0	0	0	0	+	-	-	0	+	0	0	-
IC1	+	+	+	0	0	0	0	0	0	0	0	+	0
IC2	+	+	+	0	+	0	+	+	+	0	+	0	+
IC3	+	0	+/-	0	0	0	0	0	0	0	+/-	+	0
MA1	+	+	+	0	+	0	+	+	+	0	+	0	+
MA2	0	0	0	0	0	0	0	0	0	0	0	0	0
MA3	+	+	+	0	+	0	+	+	+	0	+	0	+

Masterplan Objective	SEA Objective												
	1	2	3	4	5	6	7	8	9	10	11	12	13
MA4	+	+	+	0	+	0	+/-	+	+	0	+/-	0	+
MA5	+	0/+	0/+	0/+	0/+	0/+	0/+	0/+	0/+	0/+	0/+	0/+	0/+
MA6	+	+	0	0	0	0	+	+	+	0	0	0	+
EH1	+	+	+	+	+	+	+	+	+	+	+	+	+
EH2	0/+	0/+	0	0	0	0	0	0	0	0	+	+	0
EH3	0/+	+	+	+	+	+	+	+	+	+	+	+	+
EH4	0	0	0	0	0	0	0	0	0	0	+	0/+	0
EH5	+	+	0	0	0	0	0	0	0	0	0	0	0
EH6	+	0/+	0/+	0/+	0/+	0/+	0/+	0/+	0/+	0/+	0/+	0/+	0/+
RA1	0/+	+	+/-	0	0	0	+	+	+	0	0	0/+	+
RA2	0/+	+	0	0	0	0	0	0	0	0	0/+	0/+	0
RA5	0/+	+	0/+	0	0/+	0	0	0	0	0	0/+	+	0
S1	+	+	0	0	0	0	0	0	0	0	0	0	0
FR1	+	+	+	+	+	+	+	+	+	+	+	+	+

- 4.5.6 Viewed in isolation, the Masterplan Objectives which promote development and support larger ships, greater throughput, and new facilities and services may have an impact on the relevant environmental features / receptors. Even if achieved in accordance with environmental licensing requirements or in the most sustainable way possible at the time, this may at the very least have indirect and secondary cumulative impacts on a wider scale. However, they can also lead to improvements in areas such as water and waste efficiency. These risks are common to nearly all development, and therefore this is not unexpected.
- 4.5.7 There are a number of Masterplan objectives which counter-act these impacts on environmental features/receptors, or aim to compensate for any negative effects, including in particular Objectives MA1, MA3, MA4, EH1, EH3, EH4 and EH6.
- 4.5.8 Masterplan Objective PF3 on the recovery of lands that are not being used for critical port activity creates a range of opportunities for the port, but also carries the same potential risks as general development (as discussed above). It is considered that this holistic approach to the Masterplan can consolidate port activity to assist in enabling the better integration of environmental enhancements, to improve and streamline environmental risk management, and to ensure that future more 'ad hoc' upgrades at the port pose less risk to communities or the environment.
- 4.5.9 Masterplan Objective PF4 on extending the quaysides to their maximum has the potential for impacts on environmental areas such as biodiversity, water quality and archaeology, mainly during construction. However, it can also facilitate greater throughput, which may in turn facilitate changes in operator equipment and lead to greater operational noise, traffic and associated emissions. The potential for environmental impacts are considered to be largely addressed by Masterplan Objectives MA1, MA3, MA4 and EH1 through EH6.
- 4.5.10 Masterplan Objective S1 on ensuring good security can assist in minimising disruption to the port, which is therefore beneficial for the economy from local to national level. This objective can also improve or ensure security in recreational walkways and other areas near to and within the port, which can improve the amenities used by local residents.

- 4.5.11 Masterplan Objective FR1 can be considered as a neutral action, as the act of monitoring and the planning of future reviews do not in themselves lead to impacts. However, the act of monitoring provides the opportunity for the Masterplan to make adjustments in order to improve its performance, which is solely considered a positive compatibility with all SEA Objectives.

5 Review of Other Relevant Plans and Programmes

5.1 Approach to the Context Review

- 5.1.1 At the scoping stage, a review was conducted of relevant international, national, and local plans, objectives and environmental standards which may influence or impact on the Masterplan. This work has been applied in order to set the scope of this assessment and in identifying the significant issues for the Masterplan (including potential cumulative effects).
- 5.1.2 In addition, a review of local projects proposed in the area of the port estate, which may impact on the Masterplan proposals or result in cumulative impacts if developed in combination with the Masterplan proposals, has been undertaken
- 5.1.3 There are many documents of relevance to protecting and improving the environment and it is not possible for context reviews to include them all. It is therefore important that we limit our context review to those which either have direct (often government-led) influence over the Masterplan, or which result in clearly identifiable operations and actions which might be affected or improved by the Masterplan.
- 5.1.4 A summary of the review is provided below along with the more detailed table (See Appendix A) incorporating the plans, programmes and projects of relevance.

5.2 Summary of the Review

- 5.2.1 The key links and themes identified can be broadly summarised into the following categories:
- In order to protect the social and natural environment, all planning should aim to reduce greenhouse gas emissions and to prepare for the effects of climate change;
 - The importance of openness and fairness in decision-making and the part assessments such as SEA play in providing high-quality information to the public;
 - Protecting and enhancing the historic and natural environment including marine life;
 - Linked to the above, ensure that no harm is brought to nature conservation sites in the Dublin Port area designated at the European level;
 - Aim to reduce the adverse consequences of flooding on human health, the environment, cultural heritage and economic activity;
 - Sustainable consumption and use of natural resources, including waste prevention and recycling;
 - Protecting and enhancing open spaces, walking and cycling networks and recreational opportunities;
 - Improving access to services and facilities including health services and essential amenities; and

- Achieving economic prosperity.

5.2.2 In addition, some of the more specific messages relevant to the Masterplan are:

- Sustainable links from the port to Dublin City can be improved through the use of more sustainable modes of transport both for freight and for workers, visitors and crew including rail for freight, public transport, walking and cycling;
- Making the most efficient use of the transport network to reduce the risk of congestion and improving accessibility to the port. In addition, consider the potential effects of the Dublin Eastern Bypass on future development within the port.
- Recognise the role that the port has to play in assisting the future competitiveness of Irish Ports and in addition the role the Masterplan can play in the growth of the Dublin economy;
- The development of the port needs to consider the impacts on the Natura 2000 sites within Dublin Bay;
- The Masterplan can help to better integrate the port with Dublin City, breaking down barriers and becoming more visually appealing; and
- Recognise the importance of the surrounding communities and how the port can meet people's needs locally.

6 Characterisation of the Existing Environment of Dublin Port

6.1 Introduction

- 6.1.1 This section presents a review of the environmental baseline conditions. The environmental aspects which are addressed are as required by EC (Environmental Assessment of Certain Plans and Programmes) Regulations 2004.
- 6.1.2 This section also presents information on environmental aspects which were deemed relevant based on the current port activities and operations and also the currently proposed Masterplan Options.

6.2 Biodiversity – Flora and Fauna

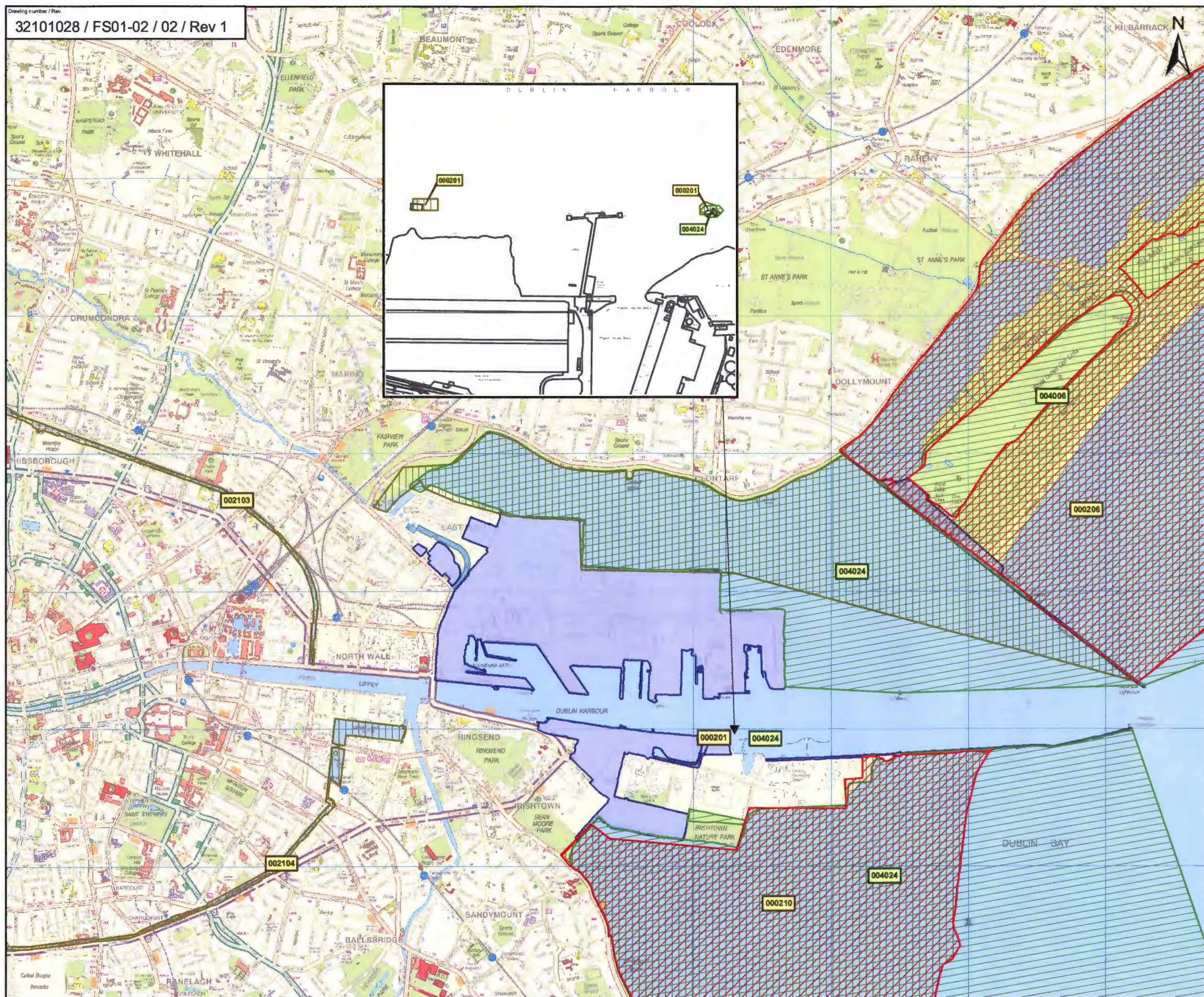
- 6.2.1 The Dublin Port estate is located in close vicinity to a number of designated conservation sites. These areas are designated under EU and Irish legislation, with the aim of safeguarding identified habitats within which designated species of fauna and/or flora have been identified. The Port Estate lies within 5km of two cSACs/pNHAs, two SPAs and three pNHAs.
- 6.2.2 Candidate Special Areas of Conservation (cSAC) sites are protected under European Communities (EC) Habitats Directive 92/43/EEC from significant damage to their relevant habitats and species. Designated SACs are compiled within a framework of protected areas known as Natura 2000.
- 6.2.3 Special Protection Area (SPA's) sites are protected under the European Union (EU) Birds Directive 79/409/EEC from actions that would damage their value to bird species, especially those on Annex 1 of the Directive. Designated SPAs are also compiled under the framework of sites known as Natura 2000.
- 6.2.4 Proposed Natural Heritage Area (pNHA's) sites were published on a non-statutory basis in 1995, and have not since been statutorily proposed or designated. Proposed NHAs have limited protection in the form of recognition of the ecological value of pNHAs by planning and licensing authorities. Table 6.1 lists the designated conservation areas within 5km of the Port Estate.

Table 6.1: Designated Areas within 5km

Site Name	Status	Code	Approximate Distance to nearest point of Port.
Sandymount Strand/Tolka Estuary	SPA	004024	Adjacent
North Bull Island	SPA	004006	1200m
North Dublin Bay	cSAC/pNHA	000206	1200m
South Dublin Bay	cSAC/pNHA	000210	30m
Grand Canal	pNHA	002104	424m
Royal Canal	pNHA	002103	892m
Dolphins Dublin Docks	pNHA	000201	148m

- 6.2.5 Figure 2 presents the designated conservation areas in the vicinity of Dublin Port

Drawing number / Rev
32101028 / FS01-02 / 02 / Rev 1



- LEGEND:**
- National Heritage Areas (NHA)
 - Special Area of Conservation (SPA)
 - Proposed National Heritage Areas (pNHA)
 - Special Protection Areas (SPA)
 - Dublin Port Company Property

REFERENCE	SITE NAME	DESIGNATION
000206	North Dublin Bay	SAC/pNHA
002103	Royal Canal	pNHA
002104	Grand Canal	pNHA
000201	Dolphins, Dublin Docks	pNHA
000210	South Dublin Bay	SAC/pNHA
004024	Sandymount Strand - Tolka Estuary	SPA
004006	North Bull Island	SPA

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 SEA ENVIRONMENTAL REPORT**

Drawing Title:
**FIGURE 2:
 CONSERVATION DESIGNATION AREAS
 IN THE VICINITY OF DUBLIN PORT**

Drawing Status:
For Issue

Scale: **NTS @ A3** DO NOT SCALE
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- 6.2.6 The Eastern River Basin District (ERBD) Plan has summarised the conservation status of all the Natura 2000 sites within the ERBD as detailed in Table 6.2

Table 6.2: Natura 2000 site conservation status as detailed in the ERBD

Site	Conservation Status	Overall Protected area Status
Sandymount Strand/Tolka Estuary SPA	Moderate	< Good
North Bull Island SPA	Good	< Good
North Dublin Bay SAC	Moderate	< Good
South Dublin Bay SAC	Moderate	< Good

Special Protection Areas (SPAs)

North Bull Island SPA – IE0004006

- 6.2.7 The North Bull Island SPA is one of the top sites in Ireland for wintering waterfowl. This site is of international importance on account of both the total number of waterfowl and the individual populations of Light-bellied Brent Goose, Blacktailed Godwit and Bar-tailed Godwit that use it. In addition, there is a regular presence of several species that are listed on Annex I of the E.U. Birds Directive. North Bull Island is also subject to other designations including designation as a World Biosphere Reserve by UNESCO and a Ramsar site under the Ramsar Convention. See Table 6.3

- 6.2.8 Waterbird monitoring has been taking place in North Dublin Bay since the 1960's and there is an extensive amount of information on the bird species in the area. The numbers of wildfowl and waders using Dublin Bay have fallen by 32% and 22% since the mid 1980's (2005). The intertidal mudflats and sandflats in Dublin Bay, when exposed, are used for feeding by the majority of all waterbird species using Dublin Bay, this would include the North Bull Island SPA.

- 6.2.9 Green algal mats found in the intertidal areas provide rich feeding habitat for some species like Brent Geese and Wigeon. As the tide rises waterbirds generally move northwards in Dublin Bay and are forced to move away from the area or onto the saltmarsh. At very high tides practically all the birds roost at the North Bull Island complex. Dollymount Strand is used by both roosting and feeding waders, mainly Sanderling, Bar-tailed Godwits, Knot and Dunlin. Dabbling ducks tend to concentrate largely in the channels on the north and south side of the causeway. The populations of Light-bellied Brent Goose, Bartailed Godwit and Pintail are of particular note as they comprise more than 10% of the respective national totals (Crowe 2005).

South Dublin Bay and River Tolka Estuary SPA – IE0004024

- 6.2.10 The South Dublin Bay (Sandymount) and River Tolka Estuary SPA is an important site for wintering waterfowl. The site supports nationally important numbers of the following species: Oystercatcher, Ringed Plover, Golden Plover, Grey Plover, Knot, Sanderling, Dunlin, Bar-tailed Godwit and Redshank. Other species occurring in smaller numbers include Great Crested Grebe, Curlew and Turnstone. It includes the intertidal area between the River Liffey and Dun Laoghaire, and the estuary of the River Tolka to the north of the River Liffey, as well as Booterstown Marsh.

- 6.2.11 Tables 6.3 and 6.4 provide details on the qualifying features, special conservation interests and conservation objectives for the North Bull Island and South Dublin Bay and River Tolka Estuary SPA's.

Table 6.3: North Bull Island SPA

Name	Natura 2000 Designation	Basis
North Bull Island SPA	SPA IE0004006	EU Birds Directive (79/409/EEC)
Qualifying Interests (Species) Site is selected for:	Species	Basis
	This Natura 2000 site is of international importance on account of both the total number of waterfowl Light-bellied Brent Goose (international importance) Shelduck Pintail Shoveler Oystercatcher Grey Plover Knot Dunlin Black-tailed Godwit (international importance) Bar-tailed Godwit (Annex I of E.U. Birds Directive) Redshank Turnstone 20,000 wintering waterbirds	EU Birds Directive
Additional Special Conservation Interests	Teal Ringed Plover Golden Plover (Annex I of E.U. Birds Directive) Sanderling Curlew Black-headed Gull Wetland & Waterbirds	
Conservation Objectives*	To maintain the special conservation interests for this SPA at favourable conservation status: Light-bellied Brent Goose, Shelduck, Pintail, Shoveler, Oystercatcher, Grey Plover, Knot, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Redshank, Turnstone, 20,000 wintering waterbirds, Teal, Ringed Plover, Golden Plover, Sanderling, Curlew, Black-headed Gull, Wetland & Waterbirds.	

* Draft conservation objectives as received from the NPWS, June 2011

- 6.2.12 The Irish Wetland Bird Survey (I-webs) is designed to monitor wintering waterbird populations and their wetlands in the Republic of Ireland in order to identify population sizes, determine trends, and to identify important sites for waterbirds (Boland et al 2009). Dublin Bay is one of the top five important sites for wintering birds. Birdwatch Ireland has published the number of bird utilising Dublin Bay for the period 2003 to 2008. These figures indicate that the overall numbers are increasing.

Table 6.4: South Dublin Bay and River Tolka Estuary SPA

Name	Natura 2000 Designation	Basis
South Dublin Bay and River Tolka Estuary SPA	SPA IE0004024	EU Birds Directive (79/409/EEC)
Qualifying Interests (Species) Site is selected for:	Species	Basis
	Light-bellied Brent Goose (international importance) Knot Sanderling Bar-tailed Godwit (Annex I of E.U. Birds Directive) Redshank Roseate Tern (international importance) Common Tern (nationally important) Arctic Tern	EU Birds Directive
Additional Special Conservation Interests	Oyster Catcher Ringed Plover Golden Plover Dunlin Black-headed Gull Wetland & Waterbirds	
Conservation Objectives*	To maintain the special conservation interests for this SPA at favourable conservation status: Light-bellied Brent Goose, Knot, Sanderling, Bar-tailed Godwit, Redshank, Roseate Tern, Common Tern, Arctic Tern, Oystercatcher, Ringed Plover, Golden Plover, Grey Plover, Dunlin, Black-headed Gull, and Wetland & Waterbirds.	

* Draft conservation objectives as received from the NPWS, June 2011

Special Areas of Conservation

North and South Dublin Bay – cSAC IE0000206 + IE0000210

- 6.2.13 The North and South Dublin Bay cSAC supports specific habitats for which it is designated (i.e. for which it qualifies as an SAC). Those ‘designating’ habitats which are in closest proximity to Dublin Port include, but are not limited to, mudflats, seaflds not covered by seawater at low tide, Atlantic and Mediterranean salt meadows, shifting sand dunes along the shoreline, fixed coastal dunes and humid dune slacks.
- 6.2.14 Tables 6.5 and 6.6 provide details on the qualifying features, special conservation interests and conservation objectives for the North and South Dublin Bay cSAC.

Table 6.5: North Dublin Bay cSAC

Name	Natura 2000 Designation	Basis
North Dublin Bay cSAC	Special Area of Conservation (IE0000206)	EU Habitats Directive (92/43/EEC)
Qualifying Interests (Species)	Species	Basis
	Petalwort (<i>Petalophyllum ralfsii</i>)	Annex II, EU Habitats Directive
Qualifying Interests(Habitats)	Habitat types (as in Annex 1 of the Habitats Directive), (Codes)	
	Fixed dunes Marram dunes Embryonic shifting dunes Dune slack Vegetation Drift lines Salicornia mud Atlantic salt meadows Mediterranean salt meadows Tidal mudflats	2130* 2120 2110 2190 1210 1310 1330 1410 1140 *indicates priority Habitat
Conservation Objectives*	<p>Objective 1: To maintain the Annex I habitats for which the cSAC has been selected at favourable conservation status: Mudflats and sandflats not covered by seawater at low tide; Annual vegetation of drift lines; Salicornia and other annuals colonizing mud and sand; Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>); Mediterranean salt meadows (<i>Juncetalia maritimi</i>); Embryonic shifting dunes; Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes); Fixed coastal dunes with herbaceous vegetation (grey dunes); Humid dune slacks.</p> <p>Objective 2: To maintain the Annex II species for which the cSAC has been selected at favourable conservation status: <i>Petalophyllum ralfsii</i>.</p> <p>Objective 3: To maintain the extent, species richness and biodiversity of the entire site</p> <p>Objective 4: To establish effective liaison and cooperation with landowners, legal users and relevant authorities.</p>	

* Draft conservation objectives as received from the NPWS, June 2011

Table 6.6: South Dublin Bay cSAC

Name	Natura 2000 Designation	Basis
South Dublin Bay cSAC	Special Area of Conservation (cSAC 000210)	EU Habitats Directive (92/43/EEC)
Qualifying Interests (Species)	Species	Basis
	Petalwort (Petalophyllum ralfsii)	Annex II, EU Habitats Directive
Qualifying Interests (Habitats)	Habitat types (as in Annex 1 of the Habitats Directive), (Codes)	
	Mudflats and Sandflats not covered by seawater at low tide	1140
Conservation Objectives*	<p>Objective 1: To maintain the Annex I habitat for which the cSAC has been selected at favourable conservation status: Mudflats and sandflats not covered by seawater at low tide.</p> <p>Objective 2: To maintain the extent, species richness and biodiversity of the entire site.</p> <p>Objective 3: To establish effective liaison and cooperation with landowners, legal users and relevant authorities.</p>	

* Draft conservation objectives as received from the NPWS, June 2011

Proposed Natural Heritage Areas

Royal Canal – pNHA 002103

- 6.2.15 The Royal Canal is a man-made waterway linking the River Liffey at Dublin to the River Shannon near Tarmonbarry. The canal pNHA comprises the central channel and the banks on either side of it. The main water supply is from Lough Owel (also an NHA) via a feeder channel into the canal at Mullingar.
- 6.2.16 A number of different habitats are found within the canal boundaries - hedgerow, tall herbs, calcareous grassland, reed fringe, open water, scrub and woodland. The hedgerow, although diverse, is dominated by Hawthorn (*Crataegus monogyna*). On the limestone soils of the midlands Spindle (*Euonymus europaeus*) and Guelder-rose (*Viburnum opulus*) are present. The vegetation of the towpath is usually dominated by grass species.
- 6.2.17 Otter spraints are found along the towpath, particularly where the canal passes over a river or stream.
- 6.2.18 The Rare and legally protected Opposite-leaved Pondweed (*Groenlandia densa*) (Flora Protection Order 1987) is present at one site in Dublin, between Locks 4 and 5. *Tolypella intricata* (a stonewort listed in the Red Data Book as being Vulnerable) is also in the Royal Canal in Dublin, the only site in Ireland where it is now found. The ecological value of the canal lies more in the diversity of species it supports along its linear habitats than in the presence of rare species. It crosses through agricultural land and therefore provides a refuge for species threatened by modern farming methods.

Grand Canal – pNHA 002104

- 6.2.19 The Grand Canal is a man-made waterway linking the River Liffey at Dublin with the Shannon at Shannon Harbour and the Barrow at Athy. The Grand Canal Natural Heritage Area (NHA) comprises the canal channel and the banks on either side of it. The canal system is made up of a number of branches - the Main Line from Dublin to the Shannon, the Barrow Line from Lowtown to Athy, the Edenderry Branch, the Naas and Corbally Branch and the Milltown Feeder. The Kilbeggan Branch is dry at present, but it is hoped to restore it in the near future. Water is fed into the summit level of the canal at Lowtown from Pollardstown Fen, itself an NHA.
- 6.2.20 A number of different habitats are found within the canal boundaries - hedgerow, tall herbs, calcareous grassland, reed fringe, open water, scrub and woodland.
- 6.2.21 The hedgerow, although diverse, is dominated by Hawthorn (*Crataegus monogyna*). On the limestone soils of the midlands Spindle (*Euonymus europaeus*) and Guelderrose (*Viburnum opulus*) are present. The vegetation of the towpath is usually dominated by grass species.
- 6.2.22 Otter spraints are found along the towpath, particularly where the canal passes over a river or stream. The Common Newt breeds in the ponds on the bank at Gollierstown in Co. Dublin.
- 6.2.23 The Rare and legally protected Opposite-leaved Pondweed (*Groenlandia densa*) (Flora Protection Order 1987) is present at a number of sites in the eastern section of the Main Line, between Lowtown and Ringsend Basin in Dublin.
- 6.2.24 The ecological value of the canal lies more in the diversity of species it supports along its linear habitats than in the presence of rare species. It crosses through agricultural land and therefore provides a refuge for species threatened by modern farming methods.

Mooring Dolphins, Dublin Docks - pNHA 000201 subsite of SPA 4024

- 6.2.25 This is a tern breeding site at the entrance to the port of Dublin near the old sewage works at Ringsend. The site consists of two moorings, the CDL Dolphin and the ESB Dolphin that are used by common and arctic terns and roosting cormorants. The terns regularly nest on the Dolphins. This site is important due to the tern colony, especially the arctic tern which is scarce on the east coast.
- 6.2.26 The CDL and the ESB dolphin have been designated as a proposed Natural Heritage Area (pNHA) and the latter has also been designated as part of the South Dublin Bay and Tolka Estuary SPA.
- 6.2.27 The South Dublin Bay and River Tolka Estuary SPA synopsis cites breeding tern numbers at approximately 400 in 2007 (NPWS 2008). A report produced for ECOCEM (AWN consulting, 2008) provides details of the tern colonies on both dolphins over a ten year period. This document also shows an increase in nest numbers peaking in 2008 at 430 - 440 common tern nests on the E.S.B Dolphin and 36 common and arctic tern nests on the CDL Dolphin. This is supported by data provided by the NPWS on counts undertaken in 2008 (Merne, 2008). All of the tern species in the SPA are listed on Annex I of the E.U. Birds Directive.

Wildfowl and Wading Birds

- 6.2.28 A number of wildfowl and wading bird surveys have been undertaken within the Port Estate. Table 6.7 provides a summary of the information reported from these surveys.

Table 6.7 Wildfowl and Wading Birds

Report	Site Location	Survey Date	Bird Species				
			Birds of conservation concern in Ireland (Amber)	Annex 2 of the Birds Directive	Birds of conservation concern in Ireland (Red)	Annex 1 of the Bird Directive	Other species
Irish Wetland Bird Survey: Results of Waterbird Monitoring in Ireland in 2007/08 Boland, H, Crowe, O & Walsh, A.	Dublin Bay	September - March 2007 and 2008	Light-bellied Brent Goose, Shelduck, Great Crested Grebe, Cormorant, Oystercatcher, Ringed Plover, Grey Plover, Greenshank,	Wigeon, Teal, Pintail, Shoveler, Red-breasted Merganser Black-tailed Godwit, Curlew,	Knot, Redshank,	Dunlin, Bar-tailed Godwit,	Grey Heron, Sanderling, Turnstone
IWeBS – Review of Wintering Waterbirds Using Dublin Bay 2005/2006		September - March 2005 - 2006	Great Crested Grebe, Cormorant, Mute Swan, Light-bellied Brent Goose, Shelduck, Oystercatcher, Ringed Plover, Grey Plover, Black-tailed Godwit, Greenshank, Common Gull, Lesser Black-backed Gull, Great Black-backed Gull	Wigeon, Teal, Mallard, Pintail, Shoveler, Goldeneye, Red-breasted Merganser, Lapwing, Snipe,	Knot, Black-headed Gull, Redshank, Herring Gull,	Red-throated Diver, Little Egret, Dunlin, Bar-tailed Godwit, Mediterranean Gull,	Grey Heron, Moorhen, Golden Plover, Sanderling, Whimbrel, Curlew, Turnstone,
Natura Environmental Consultants Bird Surveys in Dublin Port and Tolka Estuary September 2009 to March 2010	21 Ha Development Site	Sept 2009- March 10	Cormorant, Great crested grebe, Brent goose, Oystercatcher, Common gull, Great Black-backed gull	Curlew,	Black-headed gull, Redshank, Herring gull,	Little egret,	Grey heron, Turnstone,
	21 Ha Development Site	1997, 2002/03 and 2008	Brent goose, Oystercatcher, Grey plover	Curlew,	Redshank, Black-headed gull Common gull, Herring	Dunlin, Bar-tailed Godwit,	Turnstone,

Report	Site Location	Survey Date	Bird Species				
			Birds of conservation concern in Ireland (Amber)	Annex 2 of the Birds Directive	Birds of conservation concern in Ireland (Red)	Annex 1 of the Bird Directive	Other species
					gull		
	Tolka Estuary	Sept 2009- March 10	Great crested grebe, Cormorant, Mute swan, Light-bellied brent goose, Shelduck, Oystercatcher, Grey plover, Greenshank, Common gull, Lesser black-backed, Great black backed gull	Wigeon, Mallard, Red-breasted merganser, Lapwing, Black-tailed godwit, Curlew,	Knot, Redshank, Black-headed gull, Herring gull,	Little egret, Golden plover, Dunlin, Bar-tailed godwit,	Grey heron, Turnstone,
Dublin Waste to Energy Project – Wildfowl Monitoring 2007/08 – July 2008 & Dublin Waste to Energy Project – Wildfowl Monitoring 2008/09 – August 2009	Compensatory Grassland	Dec 2007 - April 2008 & Nov 2008 - April 2009	Oystercatcher, Light-bellied brent geese	Black-tailed godwit, curlew	Redshank,		
	Sean Moore Park		Oystercatcher, Light-bellied brent geese		black-headed gull,		
	Irish town Stadium		Oystercatcher,		black-headed gull,		
	Ringsend Park		common gulls, light-bellied brent geese ,Oystercatcher		black-headed gull		
Bird Counts for Dublin Port Extension EIS - 2002 By John Coveney, Coveney Wildlife Consulting Ltd.	Tolka Estuary / Liffey Estuary	1997 - 2008	Great –crested grebe, cormorant, Light-bellied brent goose, shelduck, oystercatcher, ringed plover, common sandpiper, common gull, lesser black-backed gull, great black-backed gull, black guillemot.	wigeon, goldeneye, redbreasted merganser curlew,, black-tailed godwit,	knot, redshank, black-headed gull, herring gull	bar-tailed godwit, sandwich tern, common tern, arctic tern	grey heron, turnstone,

Report	Site Location	Survey Date	Bird Species				
			Birds of conservation concern in Ireland (Amber)	Annex 2 of the Birds Directive	Birds of conservation concern in Ireland (Red)	Annex 1 of the Bird Directive	Other species
Response to Additional Information Request for Proposed Ecocem Storage Area and Associated Works at Pigeon House Road – AWN Consulting	ESB and CDL Dolphin	1998 and 2008				Arctic and Common Tern	
Extract from Poolbeg Planning Scheme EIS – February 2009		February 2009	A kestrel was seen flying over the peninsula and this species has been recorded nesting in the old Pigeon House Power station building. According to information provided by NPWS, peregrine falcons are also present in the area. Both kestrels and peregrine falcons are listed in Annex 1 of the Bird Directive.				
			Walk-over surveys observed the following; wren, robin, dunnock, blackbird, tits, finches, hooded crow, rook, magpie, jackdaw, wood pigeon, pied wagtail and the following birds of conservation concern in Ireland: house sparrow. Starling and skylark,				

Terrestrial Flora

- 6.2.29 A site walkover was undertaken in the vicinity of the proposed Dublin Gateway reclamation on the 14th May 2008 as part of the EIS. The walkover concluded that the majority of flora species identified within the habitat are common and not of particular botanical interest. However it was noted that Sea Pea (*Lathyris japonica*) was identified. The Sea Pea is protected under the Flora Protection Order 1999, it is illegal to cut, uproot or damage the listed species in any way. This prohibition extends to taking the seed. In addition it is illegal to alter, damage or interfere in any way with their habitats.

Benthic Fauna

- 6.2.30 Benthic surveys and analysis were carried in 2008 out as part of the Dublin Gateway EIS. A total of 50 sites were sampled which focused on the area proposed for reclamation and the intertidal area covered by the South Dublin Bay and River Tolka Estuary SPA. Overall, the benthic fauna of the site was dominated by a few polychaete species which were found in high numbers, specifically, *Ophryotrocha hartmanni*, *Capitella capitata* and *Tharyx* sp., and the oligochaetes *Tubificoides benedii* and *Tubificoides pseudogaster*. Also present within the study area in high numbers is the beadlet anemone *Actinia equine*. The species diversity is characteristic of the coarser sediments present within the site, with epifauna and the mobile infauna such as the anemone *Actinia equine*, crustacean *Carcinus maenas* and the bristle worm *Harmothoe* sp, which is usually associated with coarser substrates. Of note is the presence of the sand mason worm *Lanice conchilega* that also adds stability to the sediments. Within the more mobile, intertidal, sandy sediments to the north of the proposed reclamation and dredge area are found tube building and surface and sub-surface feeding polychaetes and cockles. The intertidal communities present within the study area are characteristic of the fine mobile sediments and environmental conditions with Dublin Bay.
- 6.2.31 Littoral and Sublittoral sampling was carried out in 2003 as part of the Dublin Waste to Energy Facility EIS. The surveys were undertaken in the Liffey Estuary, Tolka Estuary, adjacent to Irishtown Nature Park, Dollymount Strand and Dublin Bay. They concluded that none of the species or habitats recorded during the survey were of specific nature conservation importance or interest.
- 6.2.32 The EPA River Quality Rating System is based on the sensitivity of macroinvertebrates to pollution. It is primarily an indicator of organic enrichment, nutrient and oxygen conditions. The Macroinvertebrate status results for the river Liffey, Dodder and Tolka have all been classified as poor.

Fish and Migratory Fish

- 6.2.33 Dublin harbour sits on the Liffey estuary, with inputs from the Rivers Dodder and Tolka. 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 ground for lemon sole (April to September) and sprat (May to August) (Coull et al 1998).
- 6.2.34 The Liffey Estuary supports four migratory fish species, namely: Atlantic salmon, migratory trout, European eel (*Anguilla anguilla*) and the river lamprey (*Lampetra fluviatilis*). The Atlantic salmon, migratory trout and river lamprey are anadromous species, while the European eel is a catadromous species. The Atlantic salmon and the river lamprey are both listed under Annex II species under the EU Habitats Directive and are of international conservation importance, while the sea trout is considered 'near-threatened' in an Irish context. The Atlantic salmon, sea trout, brown trout and the

European eel are of commercial importance in Ireland. The Atlantic salmon and sea trout are both subject to catch regulations, such as river angling closures aiming to improve their populations.

- 6.2.35 In September 2011, wild Atlantic salmon were reported to be reproducing in the Tolka River for the first time in at least 100 years. The re-colonisation was noted by Inland Fisheries Ireland during a recent review of fish stocks. The young wild Atlantic salmon have been sighted in three locations in the Tolka.

Future Trends

- 6.2.36 For the Natura 2000 sites located in the direct vicinity of the port estate, the NPWS have identified that as part of these sites' conservation objectives, the aims are:
- To maintain the extent, species richness and biodiversity of the entire site;
 - To establish effective liaison and co-operation with landowners, legal users and relevant authorities; and
 - To maintain the favourable conservation status for the relevant qualifying features of the individual sites.
- 6.2.37 Future management plans due to be developed for the Natura 2000 sites are likely to provide an additional framework which will aim to prevent impacts to and implement measures for the continued future protection of the status of these sites.

Identified Data Gaps

- 6.2.38 As identified above, recognised data gaps are management plans for Natura 2000 sites.

6.3 Flood Risk

- 6.3.1 It has been noted over recent decades that the risk of flooding has continued to increase in Ireland, which is often due to changes in rainfall, increasing seawater levels and increasing levels of urbanisation. Coastal erosion can also increase the potential risk of flooding events in some areas.
- 6.3.2 The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 states that Dublin City is vulnerable to two key sources of flooding, fluvial and coastal. The guidelines identify the impact of flood risk in terms of planning and identify that "flood risk be managed pro-actively at all stages in the planning process avoiding development in flood risk areas where possible and by reducing the risks of flooding to and from existing and future development.
- 6.3.3 In relation to river flooding Dublin City Council (DCC) has been working closely with the Office Public Works (OPW) in the implementation of certain flood protection works on the Tolka and Dodder. DCC are in the process of undertaking Catchment wide Flood Risk Assessments (CFRAMS) in conjunction with the OPW and adjacent local authorities.

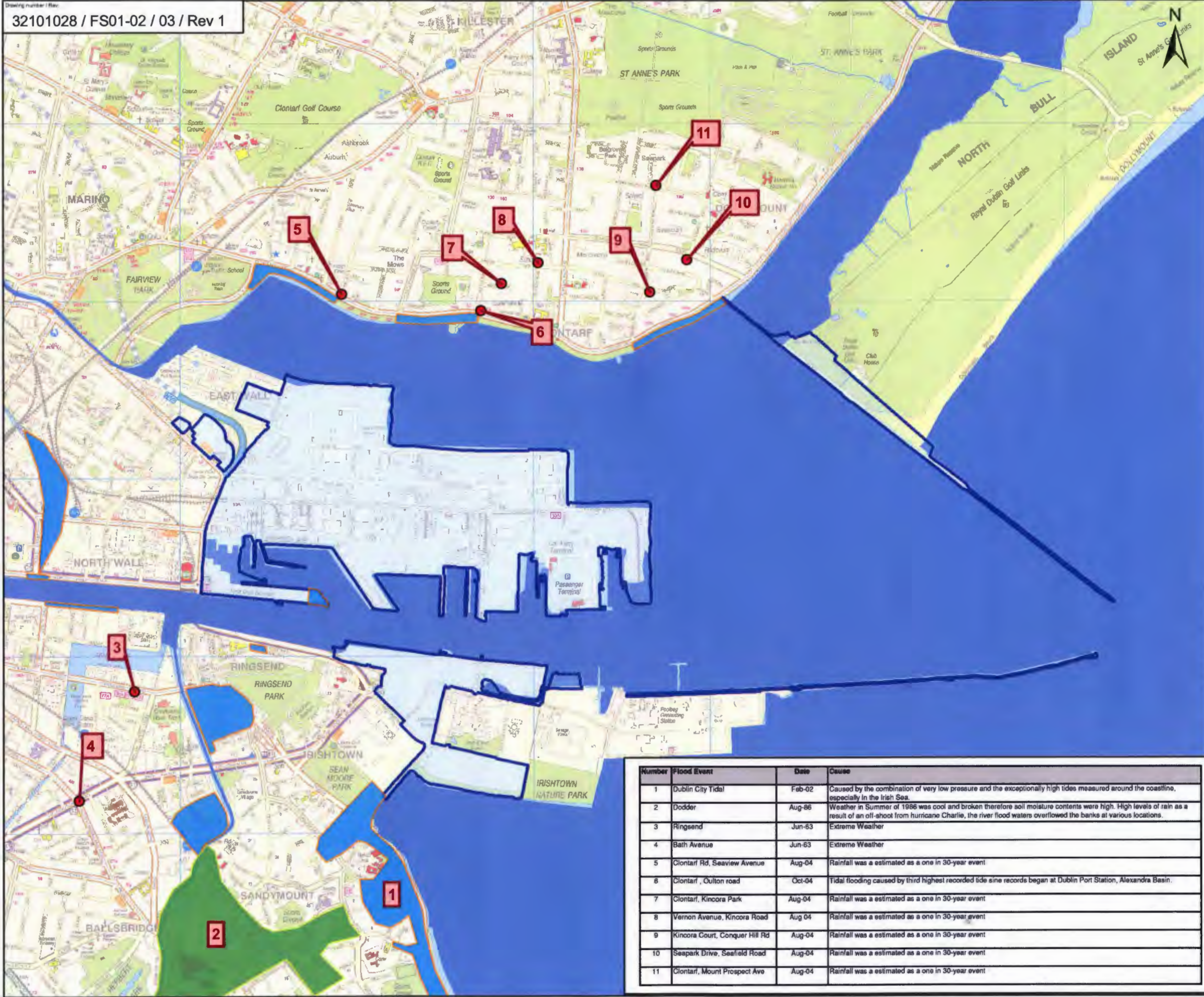
OPW Historic Flooding Records

- 6.3.4 The OPW Floodmaps website identifies that a number of historic flood events are recorded near to or in the vicinity of the Port Estate. Table 6.8 provides details of these flooding events, Figure 3 illustrates the locations.

Table 6.8: Flood Events in the vicinity of the DPC Estate – OPW

No.	Flood Event	Date	Cause	Mitigation
1	Dublin City Tidal	February 2002	Caused by the combination of very low pressure and the exceptionally high tides measured around the coastline, especially in the Irish Sea.	Defence assets were put in place since the flood events.
2	Dodder	August 1986	Weather in Summer of 1986 was cool and broken therefore soil moisture contents were high. High levels of rain as a result of an off-shoot from hurricane Charlie, the river flood waters overflowed the banks at various locations.	Defence assets were put in place since the flood events.
3	Ringsend	June 1963	Extreme Weather	Defence assets were put in place since the flood events.
4	Bath Avenue	June 1963	Extreme Weather	Defence assets were put in place since the flood events.
5	Clontarf Rd, Seaview Avenue	August 2004	Rainfall was a estimated as a one in 30-year event	Defence assets were put in place since the flood events.
6	Clontarf , Oulton road	October 2004	Tidal flooding caused by third highest recorded tide since records began at Dublin Port Station, Alexandra Basin.	Defence assets were put in place since the flood events.
7	Clontarf, Kincora Park	August 2004	Rainfall was a estimated as a one in 30-year event	Defence assets were put in place since the flood events.
8	Vernon Avenue, Kincora Road	Aug 2004	Rainfall was estimated as a one in 30-year event	Defence assets were put in place since the flood events.
9	Kincora Court, Conquer Hill Rd	Aug 2004	Rainfall was estimated as a one in 30-year event	Defence assets were put in place since the flood events.
10	Seapark Drive, Seafield Road	Aug 2004	Rainfall was estimated as a one in 30-year event	Defence assets were put in place since the flood events.
11	Clontarf, Mount Prospect Ave	Aug 2004	Rainfall was estimated as a one in 30-year event	Defence assets were put in place since the flood events.

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32101028 / FS01-02 / 03 / Rev 1



- LEGEND:**
- Historic Flood Locations
 - 1 - Dublin City Tidal Flooding
 - 2 - River Dodder Flooding
 - Rivers_Georeferenced
 - DPC Boundary

NOTES:

1 - The information shown on this drawing was obtained from the OPW floodmaps website (<http://www.floodmaps.ie/>)

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Client
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 DUBLIN PORT COMPANY**

Project
**DUBLIN PORT MASTERPLAN
 SEA ENVIRONMENTAL REPORT**

Drawing Title
**FIGURE 3:
 FLOOD EVENTS IN THE
 VICINITY OF DUBLIN PORT**

Drawing Status
For Issue

Scale
 1:21,440 A3 DO NOT SCALE

Jacobs No. 32101028 / FS01-02
 Client No.
 Drawing Number
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Number	Flood Event	Date	Cause
1	Dublin City Tidal	Feb-02	Caused by the combination of very low pressure and the exceptionally high tides measured around the coastline, especially in the Irish Sea.
2	Dodder	Aug-86	Weather in Summer of 1986 was cool and broken therefore soil moisture contents were high. High levels of rain as a result of an off-shoot from hurricane Charlie, the river flood waters overflowed the banks at various locations.
3	Ringsend	Jun-63	Extreme Weather
4	Bath Avenue	Jun-63	Extreme Weather
5	Clontarf Rd, Seaview Avenue	Aug-04	Rainfall was estimated as a one in 30-year event
6	Clontarf, Oulton road	Oct-04	Tidal flooding caused by third highest recorded tide sine records began at Dublin Port Station, Alexandra Basin.
7	Clontarf, Kinvara Park	Aug-04	Rainfall was estimated as a one in 30-year event
8	Vernon Avenue, Kinvara Road	Aug-04	Rainfall was estimated as a one in 30-year event
9	Kinvara Court, Conquer Hill Rd	Aug-04	Rainfall was estimated as a one in 30-year event
10	Seapark Drive, Seafield Road	Aug-04	Rainfall was estimated as a one in 30-year event
11	Clontarf, Mount Prospect Ave	Aug-04	Rainfall was estimated as a one in 30-year event

Dublin Gateway (Proposed Ro-Ro Reclamation) EIS

- 6.3.5 In 2008, as part of the DPC proposed extension for the Dublin Gateway reclamation EIS) and the associated dredging of new berths, the impacts of the proposed scheme during operation with regards the effect on tides and the effect on wave heights within the study area were assessed.
- 6.3.6 Using a hydrodynamic model the impact of the proposed port development on tides inside the River Liffey was investigated. The model results show that the proposed reclamation and dredging layout would have a very small effect on the water levels. The tidal range on spring and neap tides was decreased by approximately 0.044m and 0.008m respectively.
- 6.3.7 The decrease of tidal range would lead to a smaller tidal surge inside the Liffey entrance. For this reason, the model was run for a 1 in 200 year surge from the Irish Sea. The results are presented in Table 6.9, which confirms a reduction of surge level inside the Liffey entrance by the proposed port development, though the reduction was small. It was considered at that stage that the Dublin Gateway would have a minor positive impact with respect to potential flooding.

Table 6.9: Modelled 1 in 200 Year Surge Inside the Liffey Entrance

1 in 200 Year Surge	Tide Gauge m CD	Clontarf m CD	Timing
Existing	5.640	5.640	No change
Proposed development	5.633	5.636	No change

- 6.3.8 Additional Wave Modelling also developed as part of the 2008 Dublin Gateway submission demonstrated that in the Clontarf area, significant wave heights predicted by the model would reduce by up to 1.06m during an extreme event. This is due to the sheltering effect the added reclamation would have given to that area of the port from waves entering the harbour entrance.
- 6.3.9 For southerly and south easterly waves, the reclamation would have led to increases in wave heights in the entrance to the port.
- 6.3.10 The change in wave heights due to the proposed development would have led to a minor positive impact on flood risk along the Clontarf frontage. Wave heights are predicted to decrease between 0.2 and 1.0m depending on direction and return period.
- 6.3.11 The increase in wave heights in the navigation channel would have a negligible negative impact on navigation, as the increases are relatively small and vessels that could be affected would not normally be at sea during these conditions.

Future Trends

- 6.3.12 It is generally considered that flood risk will continue to increase. However, with the ongoing development of the proposed flood management frameworks, it is likely that these will provide a more sustainable approach to flood risk management which will inform the DPC Masterplan and these studies will also identify appropriate measures to reduce the impact resulting from flooding events.

Identified Data Gaps

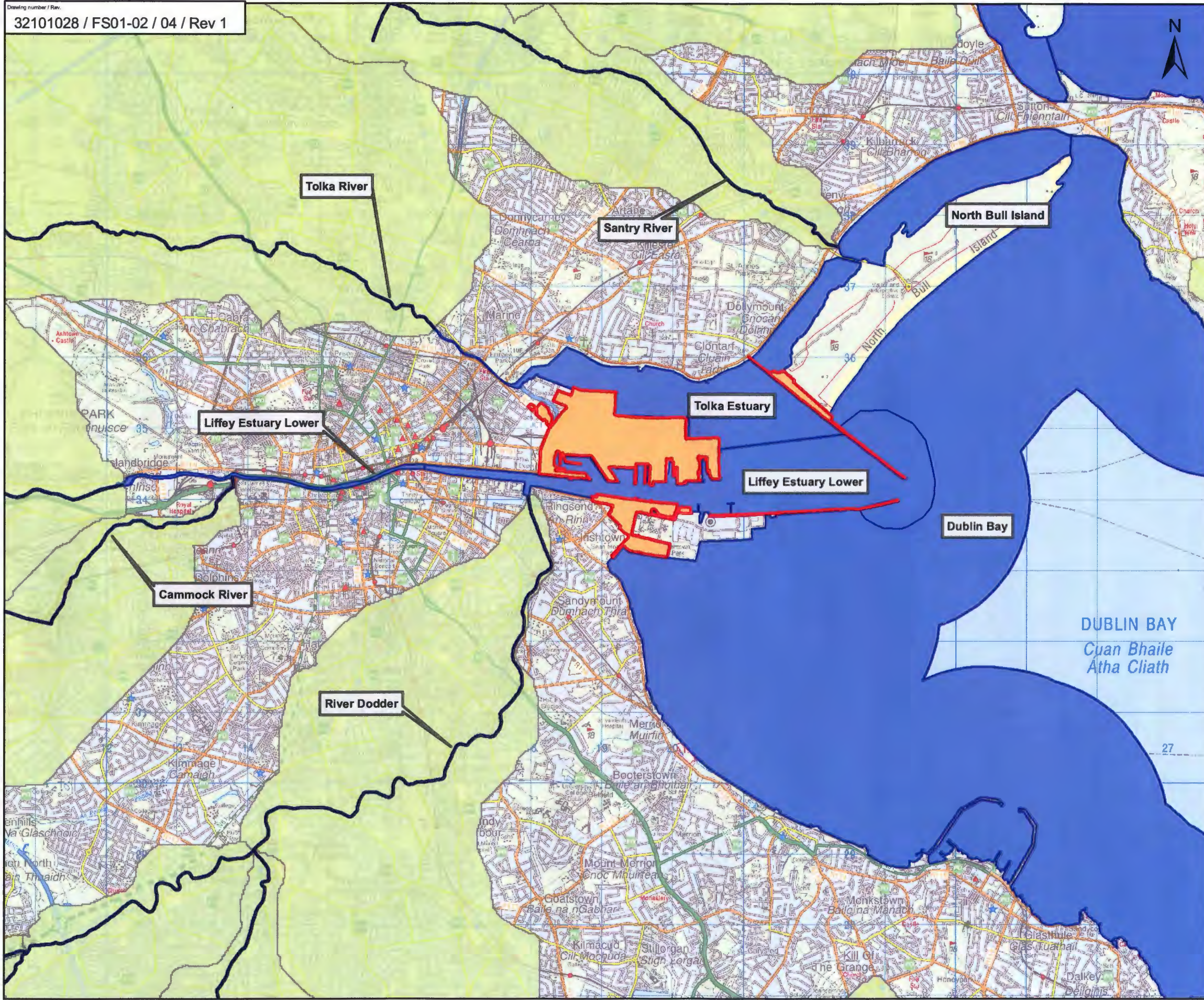
- 6.3.13 DCC is in the process of implementing the Flood Resilient City project and, within this, a Flood Risk Management Strategy. This strategy will provide further guidance to the Port on spatial planning and appropriate flood measures, if required.
- 6.3.14 Additionally, in accordance with the requirements of the EU Floods Directive (2007/60/EC), the Office of Public Works (OPW) is currently responsible for the development of Flood Risk Management Plans (FRMPs) across Ireland. These studies relevant to the DPC Masterplan include the following:
- FEMFRAMS: Fingal East Meath Flood Risk and Management Study – commenced;
 - River Dodder Flood Risk Assessment and Management – commenced; and
 - Eastern Flood Risk Management Plans – commenced.
- 6.3.15 Each FRMP will identify and map the existing and potential future flood hazards and risks, identify viable structural and non-structural flood risk management options and measures. In addition, each FRMP will be subject to the Strategic Environmental Assessment and Appropriate Assessment processes.

6.4 Water – Surface Water

- 6.4.1 Dublin Port is situated on the River Liffey which flows through the city of Dublin and between the great South Wall and North Bull Wall before entering Dublin Bay. Dublin Bay is a shallow bay with water depths not greater than 20 m at low tide at its outer limit between Sorrento Point and Baily at Howth. The water depth decreases towards the harbour with depths of less than 5 m occurring in the inner half of the Bay. North of the harbour at Bull Island and south around Sandymount extensive areas dry out at low tide.
- 6.4.2 The navigation channel runs close to the South Wall and extends from the port area through the mouth of the Harbour. This navigation channel is maintained at a depth of 7 to 8 metres below chart datum by dredging and natural scouring.
- 6.4.3 Surface water originating from tenant's sites, DPC lands and port estate roads is discharged to the surface water drainage system. The majority of run-off from the surface water drainage system within the port estate is passed through interceptors prior to discharging at a number of locations from the port estate to Dublin Bay.
- 6.4.4 DPC currently maintain and also implement a monthly interceptor monitoring programme to ensure that discharges from the Port Estate are not impacting on surface water quality.
- 6.4.5 The Eastern River Basin Management Plan (ERBMP), which includes the Dublin Port Estate, was published in July 2010. Accompanying this plan is the ERBD Programmes of Measures 2009-2015. The majority of Dublin Port operations take place within the designated estuarine Water Management Unit (WMU) defined as the Liffey Estuary Lower.
- 6.4.6 This WMU and others of relevance to the Masterplan are listed below. All water bodies are classed as heavily modified water bodies (HMWB) under the WFD:

- **Liffey Estuary Lower:** Approximately 4.8 km² in size, dominated in terms of land use by Dublin Port and associated industrial uses.
- **Tolka Estuary:** Approximately 3.6 km² in area and located in an area with a high degree of industrial and urban land use.
- **Dublin Bay:** Area of just under 50 km² it is semi-enclosed and sheltered from the prevailing west/south westerly winds, thus tidal currents assume the dominant influence over mixing processes in the area.
- **River Dodder:** River length of 47 km with a total lake area of approximately 0.27 km². The predominant land use is urban with some bog and pasture area.

6.4.7 Figure 4 presents the water bodies in the vicinity of the Dublin Port Estate.



LEGEND:

- Rivers
- River Sub Basins
- Dublin Port Company Property
- Waterbodies

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Project
**DUBLIN PORT MASTERPLAN
 SEA ENVIRONMENTAL REPORT**

Drawing Title
**FIGURE 4:
 SURFACE WATERBODIES IN THE
 VICINITY OF DUBLIN PORT**

Drawing Status
For Issue

Scale
 NTS @ A3 DO NOT SCALE

Jacobs No. 32101028 / FS01-02

Drawing Number
32101028 / FS01-02 / 04 Rev 1

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- 6.4.8 A Heavily Modified Water Body (HMWB) is a body of surface water which as a result of physical alterations by human activity, such as for navigation, is substantially changed in character. This designation recognises that the water body cannot be returned to its natural condition and therefore sets an alternative objective of Good Ecological Potential.
- 6.4.9 This requires that measures addressing, for example, water quality are still implemented but acknowledges that the use of the water has an important economic benefit. It requires that whilst that use should be preserved, other attributes of the conditions of the water must reach their full potential.
- 6.4.10 The WFD requires that all waters achieve their objectives (ecological, quantitative and chemical) by 2015. However, the WFD and the ERBMP recognise that this will not be possible in all cases. The ERBD will achieve good status over three planning cycles ending in 2027.
- 6.4.11 In accordance with the EU Water Framework Directive 2000 (WFD) requirements, the ERBMP has assigned interim ecological and chemical status to the waterbodies and has also outlined a programme of measures detailing how the WFD objectives will be achieved.
- 6.4.12 The following recommendations outlined in Table 6.10 below have been provided in the ERBD Programmes of Measure 2009-2015 in relation to HMWBs and relevant to the DPC Masterplan.

Table 6.10: ERBD proposed recommendation for the HMWB in proximity to Dublin Port

Water Body	Recommendations	Responsible Authorities
Liffey Estuary Lower	None Identified	N/A
Tolka Estuary	Increase in-channel morphological diversity Restore / create / enhance aquatic and marginal habitats	LA, OPW, CFB, NPWS
Dublin Bay	Restore / create / enhance aquatic and marginal habitats	LA, OPW, NPWS, DEMNR

LA - Local Authority, OPW – Office of Public Works, CFB - now the Inland Fisheries Ireland (IFI), DEMNR – now the Dept of Environment and Natural Resources, NPWS – National Parks and Wildlife Service

Integrated Pollution Prevention and Control Licenses and Waste Licenses

- 6.4.13 Other discharges into nearby receiving surface waters include the DCC Ringsend Wastewater Treatment Plant which discharges into the Liffey Estuary, various industrial effluents licensed under EPA Integrated Pollution Prevention and Control (IPPC), a number of approved DCC Trade Effluent Licensed Discharges and also sections of the of the DCC's storm water drainage system.

Future Trends

- 6.4.14 Water quality reports indicate that the water quality in the Dublin Bay receiving waters is continuing to improve. The programme of measures outlined in the ERBMP is expected to drive the required improvements for achievement of the required overall good status as directed by the WFD.

- 6.4.15 Achievement of this status will then provide for the implementation of appropriate measures to maintain the overall good status.

6.5 Water – Groundwater

- 6.5.1 Dublin Port is situated within the Dublin Urban Groundwater Body, which includes most of Dublin City. The Dublin Urban Groundwater Body is underlain by carboniferous interbedded limestones and shales and there are also some sandstones present. The groundwater is currently characterized as being of good status and on this basis, in accordance with the WFD requirements, the main programme of measure relate to the continued protection of this groundwater source.
- 6.5.2 Groundwater in the Dublin Urban Groundwater flows in a general eastern direction, and discharges to the many rivers within the groundwater body or directly to Dublin Bay. There is a relatively shallow horizontal gradient in the water table controlled by the tidal channel of the River Liffey.
- 6.5.3 Groundwater will flow in the direction of Dublin bay with levels influenced by tidal activities, particularly in the overburden deposits, reclamation fill, marine deposits and glacial granular deposits. Intergranular groundwater flow primarily dominates in the overburden deposits.
- 6.5.4 The GSI has concluded that the Port Estate is located on a Locally Important Aquifer - Bedrock which is Moderately Productive only in Local zones as categorised by the GSI. The groundwater is also known to be brackish in nature due to saltwater intrusion.
- 6.5.5 The GSI has classified areas of the Northern and Southern Port Estate as having High to Low groundwater vulnerability (July 2011), as only an interim study has taken place at this time.
- 6.5.6 Specific DPC Environmental surveys have determined that the groundwater within areas of the port estate has been impacted by historical industrial activities. The presence of hydrocarbon films and free phase product contamination of groundwater is typically found in the central sections of the northern estate, where oil/fuel storage facilities have historically operated. A programme of free phase product recovery has been ongoing in the Port Estate, by DPC and tenants since 2005.

Future Trends

- 6.5.7 The future trends with regard to groundwater will be a function of the success of appropriate measures being implemented which will continue to ensure the continued protection and designated good status of the Dublin Urban groundwater source.

6.6 Noise and Vibration

- 6.6.1 The immediate noise environment of Dublin Port is predominantly industrial in nature. Currently noise sources within the Dublin Port estate include but are not limited to Ro-Ro/Lo-Lo terminals and berths, container storage terminals, road traffic and various industrial/commercial premises.
- 6.6.2 It is also considered that road traffic is the dominant source of noise pollution within Dublin City and in the vicinity of Dublin Port. Predictive noise mapping produced by Dublin City Council for the Dublin City central area, which includes Dublin Port, identifies that the predicted day time sound levels contributed from traffic, ranges from

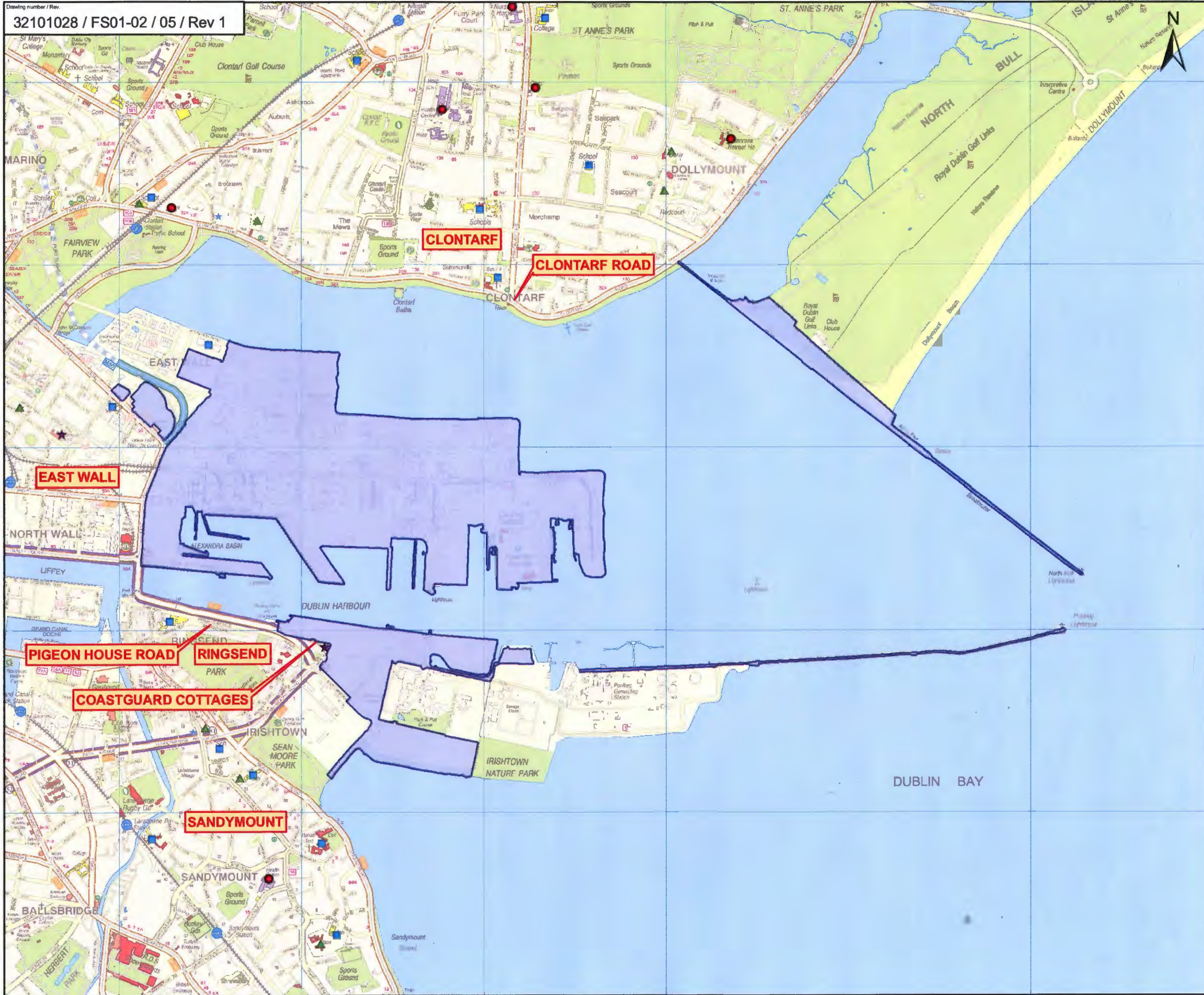
approximately 60-70 dBA in the immediate vicinity of Dublin Port. Noise mapping outlines that the predicted night time sound levels from traffic in the vicinity of Dublin Port ranges from approximately 50-60 dBA.

- 6.6.3 The nearest noise sensitive receptors in respect to Dublin Port are the residences located on the Clontarf Road to the north of the Port Estate and residences on Pigeon House Road to the south west of the south-estate. The sensitive receptors in the vicinity of Dublin Port are presented in Figure 5.
- 6.6.4 Dublin Port Company (DPC) have commissioned and participated in a number of investigations into potential noise sources and noise impacts resulting from operations within the Dublin Port estate.
- 6.6.5 DPC manages noise mitigation measures through its Environmental Management System and in recent years has implemented a programme of noise monitoring to monitor against the baseline conditions within Dublin Port. DPC provides environmental recommendations to its tenants during Environmental Audits of Port tenants.

Noise Sources from Port Operations

- 6.6.6 There are a variety of noise sources arising from Port operations. Investigations determined that noise sources were typically large and consist of several different sources or excitations within the main source. Typical noise sources arising from port operations included ships, reach stackers, gantry cranes, terminal tractors, container handling and road and rail traffic.
- 6.6.7 Dublin City Council have produced simplified noise maps which covers the western half of the port estate and reports areas of desirable and undesirable noise levels arising from traffic levels for the daytime and night time. The daytime sound level noise map shows the East Link Road to have 'undesirable' noise levels (i.e. sound levels greater than 70 db), and the rest of the western area of the port estate to be either 'acceptable' or 'desirable' (i.e. less than 50 decibels). The eastern area of the port is not shown on this map.
- 6.6.8 The night time sound level noise map, which shows the same extents as the daytime map, describes the area surrounding the East Link Road, the East Link Bridge, Tolka Quay Road, Alexandra Quay Road and East Wall Road as having 'undesirable' sound levels (i.e. night time sound levels greater than 55 db), while the rest of western area of the port estate showing sound levels classified as 'acceptable' and in some small pockets 'desirable' (i.e. less than 50 decibels). As with the daytime noise map, the eastern area of the port is not shown on this map.

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LEGEND

The location of potential sensitive receptors (Outside of Residential) located in the vicinity of the Dublin Port Estate are categorised by the following:

- Health Facility (Nursing Homes, Hospitals, Health Clinics)
- ▲ Places of Worship
- Educational Facility (Schools, Creches)
- ★ Community Centre/Facilities

DPC - Boundary

■ Dublin Port Company Property

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Project
**DUBLIN PORT MASTERPLAN
 SEA ENVIRONMENTAL REPORT**

Drawing Title
**FIGURE 5:
 SENSITIVE RECEPTORS**

Drawing Status
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Scale
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Vibration

- 6.6.9 The residences on Pigeon House Road are the closest receptors to Dublin Port and are therefore the most likely to experience vibration disturbance. Vibration impacts at this location are not considered to be of a significant level as to cause disturbance or damage to buildings.

Future Trends

- 6.6.10 The review of relevant plans and programmes in Section 5.0 indicates that environmental noise is recognised as becoming increasingly problematic. Trends indicate that traffic is likely to continue to remain a dominant noise source within Dublin City. The DCC Ambient Sound Monitoring Annual Environmental Report 2010 has indicated that although there was a general reduction in noise levels of approximately 1 dB from 2009, this does not represent a perceptible reduction.
- 6.6.11 The future introduction of new noise sources from future planning applications resulting from the Masterplan will require an appropriate level of assessment and may require the subsequent implementation of mitigation measures such as screening, barriers, and changes to building/site orientations at sensitive receptors to minimise the potential impacts on surrounding receptors.

6.7 Air Quality and Climate

- 6.7.1 The Port Estate is predominantly industrial in nature with the area immediately surrounding the port being represented by business and office type premises. However residential properties are also located in close radius to the port and the potential for human exposure exists at the residential areas such as; Coastguard Cottages, Pigeon House Road, Clontarf, Dollymount, Sandymount, and East Wall. These sensitive receptors in the vicinity of Dublin Port are presented in Figure 9.
- 6.7.2 The principle atmospheric pollutants being considered in this report and which are relevant to the Dublin Port Estate are NO₂, PM₁₀, PM_{2.5}, SO₂ and nuisance dust. However, it is recognised that activities such as ground excavation and stockpiling during construction and discharge of emissions to air from industrial activities are also potential emission sources for a wider range of pollutants than those aforementioned.

Ambient Air Quality Monitoring – EPA & Dublin City Council (DCC)

- 6.7.3 The Environmental Protection Agency (EPA) has overall responsibility for the co-ordination of ambient air quality monitoring in Ireland in accordance with the relevant EU Directives. The EPA and DCC implement an air quality monitoring programme within Dublin. The EPA Air Quality in Ireland 2009 Report identifies that in general, the air quality in Dublin is regarded as being good.
- 6.7.4 The Environment and Engineering Department of DCC have advised that the air quality monitoring stations providing data most representative of the Dublin Port Area are those located in Marino and Ballyfermot. The results from the stations located in Winetavern Street, Coleraine Street and Ringsend were also assessed as they are all within 4km of the Port Estate. Results from 2007 through to 2009 were assessed and a summary of the results is provided below.
- NO₂ emissions recorded at the locations detailed above between 2007 and 2009 ranged from an annual mean of 45µg/m³ at Winetavern Street in 2009 to 17µg/m³ at Ballyfermot in 2009 and 2008. In 2009 there were 4 exceedences of the legislative limit at the Ballyfermot monitoring location.

- SO₂ emissions recorded at the locations detailed above between 2007 and 2009 ranged from an annual daily mean of 0.4µg/m³ at Winetavern Street in 2008 to 3µg/m³ at Winetavern Street and Coleraine Street in 2007 (DCC monitoring results). The annual hourly max ranged from 16µg/m³ in Winetavern Street in 2008 to 100 µg/m³ in Ringsend in 2009. The results indicate that concentrations are well below the legislative limits.
- PM₁₀ emissions recorded at the locations detailed above between ranged from an annual mean of 19µg/m³ at Coleraine Street in 2008 to 12µg/m³ at Ballyfermot in 2009 and 2008.
- DCC and the EPA Carbon Monoxide results indicate that the sites all comply with the CO maximum daily 8-hr mean limit value for the protection of human health of 10 mg/m³.
- No exceedences of the annual mean for Lead where reported at the monitoring stations.
- The Target value concentration for the PAH, Benzo(a)pyrasene is 1 ng/m³ as per the Directive 2004/107/EC, EPA results indicate that the monitoring site on Winetavern Street is in compliance with this.
- DCC and the EPA carry out black smoke monitoring using the benchmark of EU Directive 80/779/EEC as a guide. The results indicate that the sites all comply with the annual median of 80µg/m³.

6.7.5 Air quality baseline monitoring was implemented by DPC within the Port Estate in 2009 over a four week period and in 2011 for a 6 month period to assist in obtaining a more representative baseline. The monitoring focused on NO₂, SO₂, and PM. The baseline results indicate trends within the Port Estate which are broadly comparable with those experienced in Dublin City. These include NO₂ levels which are largely below the legislative limits, with some occasionally above the limit. SO₂ levels which are generally low, with no exceedences of the legislative limit, and PM levels generally within the legislative limits. .

Climate

6.7.6 Climate change is generally considered to be one of the most significant environmental threats facing the world. The member states of the European Union (EU) are party to the Kyoto Protocol and have a collective responsibility to reduce overall emission of GHGs by 8% below 1990 levels by 2012. Ireland has an obligation to limit its increase in emissions over this period to no more than 13%.

6.7.7 The dominant influence on Ireland's climate is the Atlantic Ocean. Consequently, Ireland does not suffer from the extremes of temperature experienced by many other countries at similar latitude. Dublin has a temperate climate with mean monthly temperatures as recorded at Dublin airport ranging from 5.0°C in January to 15.1°C in July between 1961 and 1990 (Met Éireann, 2011). The minimum and maximum daily temperatures recorded between 1961 and 1990 were -10.1°C in December and 28.7°C in August. Mean daily hours of sunshine between 1961 and 1990 range from 1.70 hours/day in December to 6.10 hours/day in May. The dominant prevailing winds in Dublin, as measured at Dublin Airport, come from the west to southwest. Mean monthly wind speed ranged from 8.0 knots in August to 12.2 knots in January within the period of 1961 to 1990.

6.7.8 Emissions of GHG in Ireland are estimated to be 7.9% lower in 2009 than the level of emissions in 2008. Of this agriculture was the single largest contributor to overall

emissions at 29.1% of the total, followed by transport and energy both at 21.1%. The remainder is made up by the Industry and Commercial at 14.8%, residential sector at 12.0% and waste at 1.9% (Ireland's Greenhouse Gas Emissions in 2009, EPA, 22nd October 2010).

- 6.7.9 The National Climate Change Strategy, 2007, designated the EPA with responsibility for developing annual national emission projections for GHG for all key sectors of the economy. The EPA produces GHG emission projections annually. The most recent is Ireland's Greenhouse Gas Emission Projections, 2010-2020, published April 28, 2010.
- 6.7.10 This report predicts the annual emissions for 2008-2012 are 63.0 MT CO₂e with measures incorporating the anticipated impact of policies and measures that were in place (and legislatively provided for) by the end of 2008 or 62.3 MT CO₂e with additional measures which included existing and planned policies and measures.

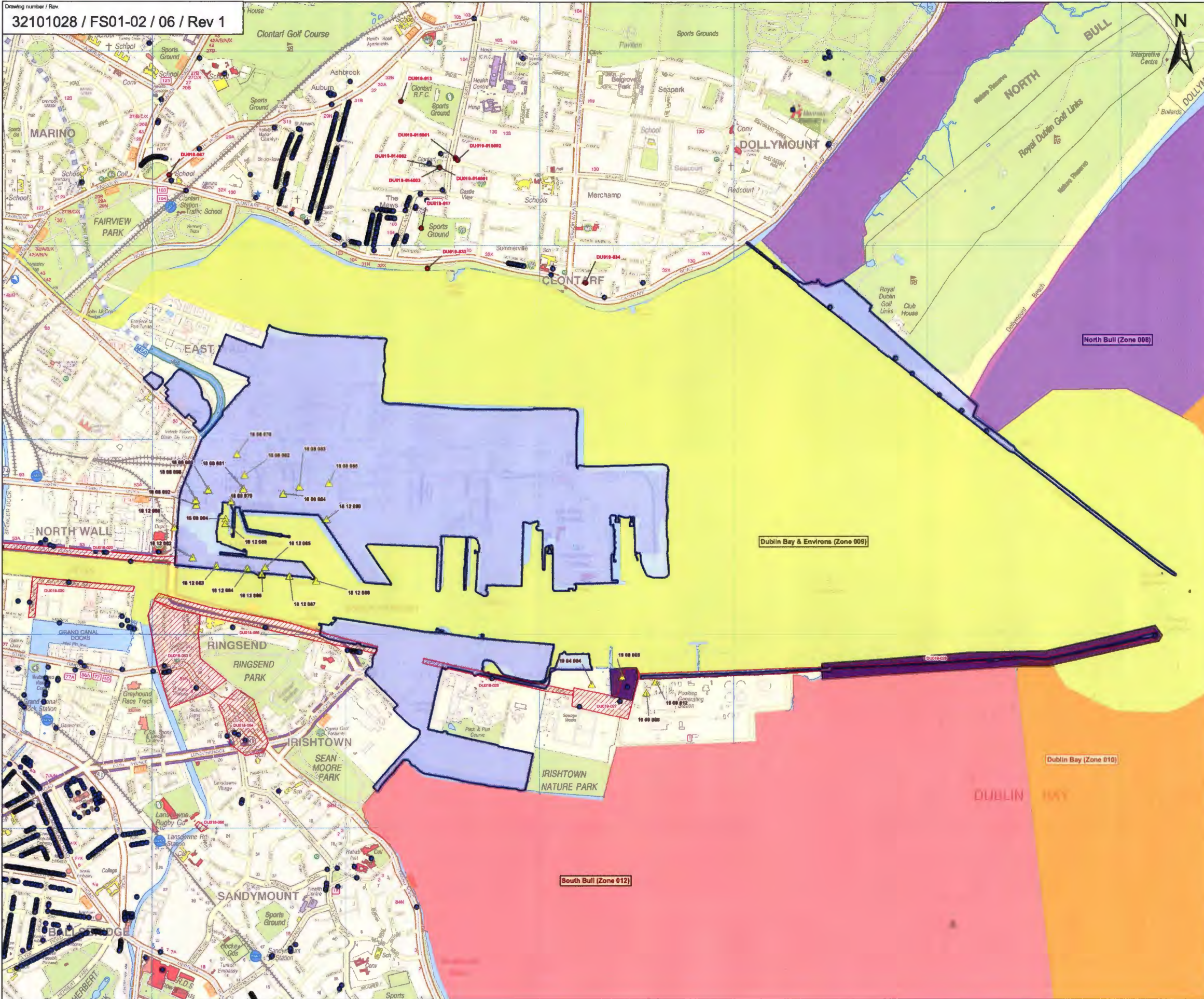
Future Trends

- 6.7.11 The air quality in terms of sulphur dioxide has improved significantly since the 1990s, and particulate matter levels have been decreasing in the Dublin area since 2003. It is considered that this trend will continue, or as a minimum, remain static in future years.
- 6.7.12 In terms of NO₂, the pollutant concentrations in zones across Ireland have been identified to be predominantly static since approximately 2002. However, the EPA have identified that some monitoring stations in Dublin and also in Cork being increasingly impacted by traffic levels. The closest EPA monitoring station to Dublin Port is located at Ringsend.
- 6.7.13 The EPA identifies that the continued increase in NO₂ emissions at these monitoring stations may lead to future breaches in the legislative limit. To assist in the management of potential exceedances, the EPA report identifies that traffic growth and levels of traffic in urban areas must be managed effectively.

6.8 Cultural Heritage – Archaeology and Architectural

- 6.8.1 The Dublin Port area has been dominated by reclamation activities dating back to the ninth century. A number of archaeological and historical sites are identified within and in the immediate vicinity of the port estate.
- 6.8.2 The locations of the archaeological and architectural resources relevant to Dublin Port are detailed in Figure 6.

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- LEGEND:**
- Protected Structures (RPS)
 - ▲ Industrial Heritage Sites (DCHIR)
 - Record of Monuments & Places (RMPs)
 - ▨ Record of Monuments & Places (RMPs)
 - Dublin Port Company Property
 - Conservation Areas
- Seabed Zones**
- Zone 008 - North Bull
 - Zone 009 - Dublin Harbour & Environs
 - Zone 010 - Dublin Bay
 - Zone 012 - South Bull

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 DUBLIN PORT COMPANY**

Project:
**DUBLIN PORT MASTERPLAN
 SEA ENVIRONMENTAL REPORT**

Drawing Title:
**FIGURE 6:
 ARCHEOLOGICAL AND ARCHITECTURAL
 RESOURCES RELEVANT
 TO DUBLIN PORT**

Drawing Status:
For Issue

Scale: NTS @ A3 DO NOT SCALE

Jacobs No: 32101028 / FS01-02

Drawing Number: **32101028 / FS01-02 / 06** Rev: **1**

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Shipwrecks

- 6.8.3 There are a number of historic shipwrecks that have been identified within the Dublin Bay area. As less than 5% of the wrecks in the Shipwreck Inventory have precise locations, the Inventory is arranged as a series of twenty geographical zones. The Zones and those which have been identified as applicable to DPC are as follows;
- Zone 008: The North Bull.
 - Zone 009: Dublin Harbour and environs.
 - Zone 010: Dublin Bay including the Burford Bank.
 - Zone 012: The South Bull.

Protected Structures

- 6.8.4 The Planning and Development Act, 2000 (as amended) requires each planning authority to compile and maintain a Record of Protected Structures (RPS). This record is a mechanism for the statutory protection of the architectural heritage and forms part of each planning authority's development plan.
- 6.8.5 The structures located adjacent to Dublin Port that are listed in the 2011-2017 Dublin City Council Development Plans' published Record of Protected Structures are provided in Table 6.11.

Table 6.11: Record of Protected Structures within Port Estate

Ref	No.	Address	Description as per Record of Protected Structures
1012		Bull Island. Dublin 3	Timber Bridge
1013		Bull wall/Bull Island, Dublin 3	Bathing Shelters and Picnic Shelters
6782	70	Pigeon House road, Dublin 4	House
6783	71	Pigeon House road, Dublin 4	House
6784	72	Pigeon House road, Dublin 4	House
6785	73	Pigeon House road, Dublin 4	House
6786	74	Pigeon House road, Dublin 4	House
6787	75	Pigeon House road, Dublin 4	House
6788	76	Pigeon House road, Dublin 4	House
6789	77	Pigeon House road, Dublin 4	House
6790	78	Pigeon House road, Dublin 4	House
6791	79	Pigeon House road, Dublin 4	House
6792	80	Pigeon House road,	House, including former coastguard premises

Ref	No.	Address	Description as per Record of Protected Structures
		Dublin 4	
6793		Pigeon House road, Dublin 4	Former St. Catherine's Hospital: surviving parts, including northern and western site boundary walls
6794		Pigeon House road, Dublin 4	Remnants of Pigeon House Fort. The Pigeon House Fort was in use from 1798 to 1897. The constituent elements of the fort complex, included soldiers' quarters, stores, magazines, a hospital, a canteen, a handball alley, a prison, water tanks, defensive gateways at each end of the South Wall protected by trenches and drawbridges, an armoury and guardhouse commanding the road from Ringsend, and guns trained on the South Bull sands and the mouth of the Liffey.
6795		Pigeon House road, Dublin 4	Former Pigeon House Hotel. The Hotel was built between 1793 and 1795, reputedly to designs by Robert Pool; the structure became the Officers Quarters following the establishment of Pigeon House Fort on the site in 1798.
6796		Pigeon House road, Dublin 4	Pigeon House power station: former red-brick electricity generating station. This Electricity Generating Station was completed in 1903 and the Turbine Hall completed in 1928. The building was managed by the Dublin Corporation Lighting Committee until 1929 when ESB took over control. In 1965 ESB decided to build a new generating station and the DEGS was decommissioned thereafter. The complex was purchased from the ESB in the last decade.
6797		Pigeon House road, Dublin 4	Limestone and granite ashlar sea wall. The development of the sea wall was constructed from 1715 and linked the channel of the Liffey from Corn Exchange Place to Poolbeg lighthouse.
6798		Pigeon House road/South Port/ Dublin Bay Dublin 4	Great South Wall to Lighthouse
7376	10 3	Ringsend Park, Dublin 4	Drinking fountain in garden wall
7377	1	Ringsend Park, Dublin 4	Boland's warehouse/mill at lifting bridge, Ringsend Road: six-storey stone warehouse
7378		Ringsend Park, Dublin 4	Former Reg Armstrong Works: classic cut –stone carriage entrance with Ionic columns
7379		Ringsend Park, Dublin 4	Former Irish Glass Bottle Company (on corner of South Docks Road): three-storey brick office with glass-block entrance, feature window and clock
7553		South Bull Wall, Ringsend, Dublin 4	Poolbeg Lighthouse

6.8.6 The Record of Monument and Places (RMP) is a list of all known archaeological monuments provided for in the National Monuments Acts. Table 6.12 overleaf provides details of those sites listed in the RMP, within and adjacent to the Dublin Port Estate. Structures identified in this record are afforded protection under the National Monuments Act 1930-2004.

Table 6.12: Details of the Record of Monuments and Places within or in the vicinity of the port estate

Monument Number	Location	Site type
DU018-020564	Dublin North City	Quay
DU018-053	Ringsend	Settlement Cluster
DU018-053003	Ringsend	House - 16th/17th Centuries (Identified as zone of archaeological interest)
DU018-054	Irishtown	Settlement Cluster(s), (17th century)
DU018-054001	Irishtown	Church (18th century)
DU018-054002	Irishtown	Graveyard (18th century)
DU018-056	Irishtown	Bridge
DU018-066	York Road, Pigeon House Road	Building (18th century)
DU018-067	Dublin City North	Burial(s)
DU019-013	Dublin City North	Ritual Site - Holy Well
DU019-014001	Clontarf East	Unknown
DU019-014002	Clontarf East	House - 16th/17th Century
DU019-014003	Clontarf East	Bawn
DU019-015001	Dublin City North	Church
DU019-015002	Dublin City North	Graveyard
DU019-017	Castle Avenue, Clontarf	Well
DU019-027	Pigeon House Road	Blockhouse (18th century)
DU019-028	Great South Wall	Battery (18 th Century)
DU019-02901	Pigeon House Road / Great South Wall / Sea Wall	Sea Wall (18th century)
DU019-029002	Pigeon House Road	Sea Wall (18th century)
DU019-033	Clontarf Road	Lead Mine
DU019-034	Clontarf Road, Vernon Avenue	Building(s)

Conservation Areas

- 6.8.7 Conservation areas have been designated in the city in recognition of their unique architectural character and important contribution to the heritage of the city. Designated conservation areas include extensive groupings of buildings or streetscapes and associated open spaces. The Great South Wall and Pigeon House Harbour have been classed in the Dublin City Development Plan 2011-2017 as conservation areas.
- 6.8.8 These require special care in terms of development proposals which affect structures in such areas, both protected and non-protected. DCC will thus seek to ensure that

development proposals within all conservation areas complement the character of the area, including the setting of protected structures, and comply with development standards.

Dublin City Industrial Heritage Record

- 6.8.9 In accordance with the Dublin City Development Plan 2005-2011, DCC in partnership with the Heritage Council commissioned a survey of industrial heritage in Dublin City. The sites located within or immediately adjacent to the port are detailed in Table 6.13 below.

Table 6.13: Industrial Heritage Record

DCIHR	Location	Site Name	Remains
18 08 078	Alexandra Rd, Tolka Quay	Chemical Manure Works	Yes
18 08 079	East Wall Rd Alexandra Rd	Port and Docks Board Depot	Original Replaced
18 08 080	East Wall Rd Alexandra Rd	Ship Building Yard	No
18 08 081	Alexandra Road	North Wall Graving Dock	Yes
18 08 082	Alexandra Road	Engine House	No
18 08 083	Alexandra Road, Alexandra Quay	Flour Mill	Yes
18 08 084	Alexandra Road, Alexandra Quay	Grain Silo	Original Replaced
18 08 085	Alexandra Road	North Assembly Road	Unknown
18 08 092	East Wall Rd	Gasometer	No
18 08 094	East Wall Rd	Quay	No
18 08 098	East Wall Road	Light House	No
18 08 100	Strandville Avenue	Bridge	Yes
18 12 080	North Wall Quay	Great Southern & Western Railway	Yes
18 12 082	East Wall Road	Harbour Master's Office	No
18 12 083	North Quay Extension	Goods Shed	No
18 12 084	North Quay Extension	North Quay Extension	Yes
18 12 085	North Wall Extension	Goods Shed	No
18 12 086	North Wall Extension	Goods Shed	No
18 12 087	North Wall Extension	Revenue Watch House	No
18 12 088	North Wall Extension	North Wall Lighthouse	No
18 12 089	Alexandra Basin	Quay	No
18 12 090	Alexandra Quay	Alexandra Quay	Yes
18 12 091	Alexandra Basin; North Wall Ext	Alexandra Basin	Yes
19 04 004	Pigeon House Rd	Outfall Works	Yes
19 09 006	Pigeon House Rd	Electricity Works	Yes
19 09 005	Pigeon House Rd	Lifeboat House	Original Replaced
19 09 012	Pigeon House Rd	Landing Slip	Yes

Future Trends

- 6.8.10 In recent years, archaeological and architectural resources have been threatened from increasing urbanisation in Ireland as a whole. Activities/operations within Dublin Port which have the potential to impact on these resources include future dredging requirements, potential reclamations works, and construction/excavation activities within the port estate and at quayside locations.

Identified Data Gaps

- 6.8.11 The exact location of shipwrecks in the Port area is unknown and therefore a broad area is documented.

6.9 Landscape

- 6.9.1 Dublin Port is the largest multi-purpose port in Ireland being approximately 266 hectares in area. It has developed in phases since the ninth century, with the current largest section located on the north bank of the River Liffey and is separated from Clontarf by the Tolka Estuary. The southern section is located on the Poolbeg area of the city and is connected to the northern section via the East Link Bridge.

Landscape Character

- 6.9.2 Currently, the landscape character and environment of Dublin Port is predominantly industrial in character. The main land use in the area relates to Lo-Lo/Ro-Ro terminals and berths, oil storage terminals, container storage areas with quayside loading/unloading operations and equipment, bulk handling material and various commercial and industrial facilities. There is also a large volume of daytime road traffic within the port estate.
- 6.9.3 The port estate is surrounded by a number of established residential communities. In addition, the area is also characterised by the presence of business parks and individual business premises, office premises and the O2 concert arena. Dublin City's designated financial services centre, including the recently commissioned Dublin Convention Centre, is located along the Dublin Quays in the vicinity of the port.
- 6.9.4 The Dublin City Development Plan 2011-2017 identifies that the Dublin Port estate is zoned as Zone Z7, which has the objective 'to provide for the protection and creation of industrial uses and facilitate opportunities for employment creation'.
- 6.9.5 However, it is recognised that areas surrounding the port estate are zoned primarily for the following aspects:
- Zone Z1: 'protect, provide and improve residential amenities'; and
 - Zone Z9: 'preserve, provide and improve recreational amenity and open spaces and green networks'.

Visibility

- 6.9.6 The large size of Dublin Port and the height of the infrastructure mean that it has a wide Zone of Visual Influence. However, the port's location, at near sea level and surrounded by a built up city, means the Zone of Distinct Visibility is limited.
- 6.9.7 The port, its structures and activities are distinctly visible from the leading edge of adjoining developments. The Port is principally visible as follows:
- West – from Alfie Byrne Road, East Wall Road;
 - North – from Clontarf Road;
 - South – from York Road, Pigeonhouse Road and Great South Wall; and
 - East – Bull Wall Road and North Bull Island.

- 6.9.8 The port, its activities and structures, particularly the large cranes and power generating station towers, are visible particularly from the North and the East.
- 6.9.9 Over the past twenty years, landscape planting has been implemented along the northern perimeter of the port which has softened the visual impact of the lower elements of the existing Port infrastructure in views from the North.

Future Trends

- 6.9.10 It is not expected that the existing landscape surrounding the port estate would change significantly in the next 30 years. As outlined above, the area is predominantly of an industrial nature. There is an increasing awareness of landscape issues and in future years, through the development and implementation of appropriate enhancement projects by DPC, the company would seek to complement the preservation and protection objectives for the surrounding open spaces and residential amenities.

6.10 Population, Human Health, and Deprivation

- 6.10.1 It is not expected that the implementation of the Masterplan would have significant negative impacts on population numbers or patterns, and in addition, the Masterplan is not expected to have significant negative impacts on human health aspects or levels of deprivation in communities surrounding the port estate. However, it is important that such potential negative impacts are considered within the SEA to ensure avoidance of significant negative impacts, and that any potential beneficial effects are identified and enhanced.
- 6.10.2 Some of the key issues include the interaction between port development and nearby recreational areas and amenities, road traffic generation, noise and air quality (as addressed under separate topics) and economic impacts in terms of employment and trade.
- 6.10.3 Key baseline data on these aspects is presented in the sub-sections below.

Population

- 6.10.4 The Central Statistics Office (CSO) indicated that the population of the Dublin area was 1,183,000 in 2006, with a projected increase to 1,659,000 by 2026. The annual increase in population level is predicted at approximately 1.7% per annum.
- 6.10.5 The Census revealed that the population of Ireland reached 4.58 million people in 2011. This represents a national population growth of 1.6% since the last census in 2006.
- 6.10.6 Table 6.14 presents the projected population growth rates for the State and Dublin.

Table 6.14: Regional Population Projections for 2011-2016 (thousands)

Region	2011	2016	2021	2026
Dublin City	1,302	1,434	1,563	1,659
State	4,686	5,095	5,451	5,696

Source: CSO Regional Population Projections 2011-2026 (Dec 2008)

- 6.10.7 The immediate environment of the Dublin Port estate is primarily industrial in nature. The surrounding area includes established communities such as Ringsend,

Sandymount, Clontarf and East Wall areas. There are 12 District Electoral Divisions (DEDs) surrounding the port including Clontarf East B-D, Clontarf West C-D, North Dock A-C, South Dock, Pembroke East A-B and Pembroke West A.

- 6.10.8 Three of the DEDs, Clontarf East D, Clontarf West C and Clontarf West D experienced a decline in population. A significant increase in population was witnessed in North Dock B with 85.4%.

Human Health – Overview

- 6.10.9 With regard to life expectancy, the CSO reports that life expectancy for males increased from 57.4 years in 1926 to 76.7 years in 2005. In addition, the life expectancy rates for females increased from 57.9 years in 1926 to 81.5 years in 2005. This increase is primarily related to improvements in living conditions, medical treatments and immunisation programmes.
- 6.10.10 It is generally expected that this life expectancy trend will continue to increase, with projections of 86.5 years for males and 88.2 years for women by 2041. In terms of human health, the Census Statistics Office indicated that in Quarter 3 of 2007, nearly 90% of adults perceived themselves to be in good-very good health, while only 2% indicated that they were of bad - very bad health.
- 6.10.11 The main public open spaces in the vicinity of the port include areas such as Fairview and Ringsend Park, Irishtown Nature Park, North Bull Wall and Island and Dollymount Strand. There are a number of recreational and sporting amenities in the local area including but not limited to yacht and rowing clubs, GAA grounds and club, tennis grounds, the Aviva Football + Rugby Stadium and the O2 concert arena.

SEVESO II Directive (98/82/EC)

- 6.10.12 The location of a number of SEVESO classified sites within the current port estate may be identified as having the potential to impact on human health. These tenanted sites are currently licensed in accordance with the requirements of the EC (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2000.
- 6.10.13 An objective of the DCC Development Plan 2007-2011 is:

In conjunction with the Health and Safety Authority (HSA), to implement the provisions of the Seveso II (COMAH) Directive and to have regard to the provisions of the directive and recommendations of the HSA in the assessment of all planning applications located on or impacted by such sites.

- 6.10.14 All future requirements with regard to chemical and dangerous substances will continue to be undertaken in accordance with the requirements of DCC and the HSA.

Deprivation – Overview

- 6.10.15 The Survey on Income and Living Conditions 2009 produced by the CSO refers to a broad range of issues relating to income and living conditions. The report identifies that in 2009 the percentage of households consistently living within the poverty rate increased to 5.5% in 2009 from 4.2% in 2008.
- 6.10.16 In addition, the percentage of households which experienced two or more forms of deprivation increased to 17.3% in 2009 from 13.8% in 2008. Eleven forms of deprivation are examined in the report. The report identifies that an individual is considered deprived if they have experienced at least two of the eleven forms of

deprivation. The levels of disposable household income also decreased by 6.3% between 2008 and 2009.

- 6.10.17 For the electoral divisions around the port, deprivation varies with the most affluent areas being Pembroke East B and Clontarf East B-D. The most deprived divisions include North Dock B-C and Pembroke East A however these areas have significantly improved from 1991 to 2006 with North Dock C being one of the most disadvantaged areas in Dublin in 1991 to marginally above average in 2006 (Pobal, 2008).
- 6.10.18 In general, it would be considered that aspects of the Masterplan would have positive impact in terms of human health and deprivation. Positive impacts are identified with regard to the provision of additional amenities for the local communities, potential for the future provision of employment and in facilitating the continued access to international trade and facilitating continued economic growth in the Dublin Region.

Future Trends

- 6.10.19 Table 6-1 above identifies the projected increasing population figures for Dublin City as outlined in 2008. Although emigration figures have been increasing since 2008, population figures are continuing to increase with high numbers of births in Ireland. This places additional emphasis on the provision of future resources in areas such as housing, health care, job provision and also in the provision of recreational amenities and open spaces within the city.

Identified Data Gaps

- 6.10.20 No specific data relating to the health of people living in the vicinity of the Port is available.

6.11 Transport

Road Network

- 6.11.1 Dublin Port is a main gateway into Dublin / Ireland, both for tourists on ferries and imports and exports. In terms of freight the port handled a throughput of just over 28 million tonnes in 2010. Dublin Port is the second largest industrial estate in Ireland with approximately 4,000 people employed in the port area.
- 6.11.2 Most of the trade is container trade, and transported from Dublin Port by the external road network, where the majority (60%) use the M50 Dublin Port Tunnel. The remaining 40% of traffic accesses the port from East Wall Road to the South.
- 6.11.3 The M50 Dublin Port Tunnel links the existing M1 and M50 Motorways with the entrance to Dublin Port and then internally on to the main Lo-Lo and Ro-Ro terminals. The Tunnel plays a major role in facilitating port traffic, particularly the high volume of trucks which transit Dublin Port daily, to reach their destinations and markets more efficiently and also helps to relieve traffic congestion in Dublin City centre.
- 6.11.4 The DCC introduced the HGV Management Strategy in February 2007 which implemented a ban on 5+ axle vehicles between the hours of 7am and 7pm from a designated cordon area (roughly bounded by the canals). This has resulted in an 88-96% reduction in 5+ axle vehicles within the city centre with over 3,582 5+ axle vehicles utilising the Dublin Port Tunnel per day in 2009.
- 6.11.5 The Dublin City Development Plan 2011-2017 identifies the need for an integrated and sustainable transport network within Dublin City. In terms of road capacity network

improvements, the Plan also identifies that a 'number of key road capacity improvements are required to facilitate the sustainable movement of goods and people throughout the city and to ensure ease of access.'

- 6.11.6 Policy SI19 of the Plan outlines that it supports the provision of a link between north Dublin Port and the Southern Cross/South Eastern Motorway via an eastern bypass of the city. Such works would be undertaken in consultation with the relevant transport bodies. The 2030 Vision – For Greater Dublin Transport Strategy currently identifies that the development of the Eastern Bypass is not recommended for development during the development of the Transport Strategy. However the report does identify that a road link on the line of the proposed Eastern Bypass and extending from the Dublin Port Tunnel to the Poolbeg (Southern side of the port estate) area is recommended.

Rail Links

- 6.11.7 In addition to the road network, some bulk goods (ore and other commodities) enter and leave Dublin Port by rail. The route is via a level crossing across East Wall Road and along Alexandra Road where the road space is shared between vehicles and the freight service train. Additionally in 2011 the rail line was extended from Alexandra Road to Alexandra Quay East freight terminal to assist in meeting the growing demand for shipment of container freight by rail.

Public Transport

- 6.11.8 The Luas Red line runs from Saggart via Dublin City Centre to the Point on East Wall Road. Bus stops are located within the Northern Port on East Wall Road, East Road and Upper Sheriff Street and these are served by the bus route numbers 53, 53a and 151 respectively. Bus numbers 142 and the Swords Express also run adjacent to the port.
- 6.11.9 Bus services 2 and 3 run routes from O Connell Street to Sean Moore Roundabout which is 2km from the port centre.
- 6.11.10 Rail services at Grand Canal Dock DART station are about 2.6km from the port Centre which is approximately 33 minutes walking distance.

Pedestrian Facilities and Cycling

- 6.11.11 Sections of cycle track are available along North Wall Quay and East Wall Road. Footpaths are provided throughout the Northern Parcel of the port.
- 6.11.12 There are currently 44 bike stations within Dublin City Centre with the closest to the port being located at Custom House Quay – approximately 2km from the port Centre (25 minute walk).

Future Trends

- 6.11.13 In terms of Dublin Port, growth of port activities and facilities are forecast to continue to increase up to 2040. On this basis, it is considered therefore that the requirement to transport imports and export trade and also tourists into and out of the port estate will continue to increase.
- 6.11.14 With increasing recognition of the requirement to implement sustainable transport strategies within the city, it's likely that future trends in terms of transport will result in increasing levels of intermodal transport facilities being provided across the city and within the port.

6.12 Waste Management

Waste Management – Dublin Region

- 6.12.1 The four local authorities for the Dublin Region have produced the Waste Management Plan for the Dublin Region 2005-2010. This plan identifies objectives relating to waste management for the Dublin area. The primary objective is to prevent the generation of waste where possible. If waste generation cannot be avoided, then the options of waste minimisation, reuse and recycling should be practised where possible to avoid waste being directed to landfills. Future Waste Management Plans for the Dublin Region are likely to follow the same objectives and will be considered by DPC throughout the Masterplan development.
- 6.12.2 The 2009 Annual Progress Report (which provides details for waste arisings in 2008) for the Dublin Region identifies that there were increases in the volume of waste arisings managed in the Dublin Region when figures are compared against 2007 in the following areas:
- Household waste arisings;
 - Contaminated soils; and
 - Packaging waste.
- 6.12.3 In addition, there were reductions in the management of arisings from the following sectors:
- Commercial waste;
 - Construction and demolition waste; and
 - Litter and street sweepings.

Waste Management – DPC Procedures

- 6.12.4 DPC is responsible for the management of a wide range of wastes arising at Dublin Port. In order to enable the management of these wastes in accordance with 'best practice' and relevant legislation, Standard Operating Procedures (SOPs) have been developed for each waste type managed by DPC and for the waste management practices undertaken by DPC. They provide guidance on how each waste type should be managed, stored and removed.
- 6.12.5 DPC has implemented an enhanced system of waste segregation throughout the port including their own office and canteen facilities. Waste from DPC operational activities is collected and managed by licensed waste contractor. Paper, cardboard, plastic bottles and aluminium cans are separated from mixed municipal waste (MMW) and recycled. Timber, metal and waste electrical and electronic equipment (WEEE) are also separated for recycling.
- 6.12.6 DPC has minimised the amount of waste sent to landfills in recent years with an 83% recycling rate of waste stream managed by DPC achieved in 2010.
- 6.12.7 All waste arising on DPC estate is strictly managed and handled by licensed waste management contractors according to legal requirements.

Waste Management – DPC Excavated Soil Arisings

- 6.12.8 The management of excavated soil arisings from construction and maintenance projects has also been actively managed in liaison with the Environmental Protection Agency (EPA) and Local Authority.
- 6.12.9 In addition, DPC has recently commissioned a study which aims to develop guidelines on the reuse of suitable arisings derived from future development projects, operation/maintenance activities and arisings currently stockpiled within the port estate.
- 6.12.10 It is proposed that these guidelines will assist in the appropriate segregation and stockpiling of arisings and, where appropriate, efficient reuse of arisings within the port estate where suitable. These guidelines will thereby reduce the level of arisings being disposed off site and reduce the requirement for imported fill being transported into the port estate.

Environmental Liabilities Directive (2004/35/EC)

- 6.12.11 The key objective of this Directive is the “polluter pays” principle and it sets out a framework of liability to prevent and also remedy damage to the environment.
- 6.12.12 With regard to future DPC operations and activities resulting in the generation of waste, appropriate measures will be implemented at the port estate to limit and/or prevent environmental damage,

Future Trends

- 6.12.13 In terms of future trends, the DCC Waste Management Plan identifies that the primary objective is to prevent waste generation with the options of waste minimisation, reuse and recycling being practised where waste generation cannot be avoided. To support this objective, the Plan outlines key targets in waste reduction and recycling for a number of waste streams up until 2013. Future DCC WMPs, when published are likely to outline similar objectives and targets and will be given appropriate consideration at this time.

7 Assessment and Selection of Alternatives

7.1 Introduction

- 7.1.1 The development of the Masterplan has involved the consideration of a number of alternative approaches to the planning of the port's future. This consideration has included a 'no port expansion' scenario, as the basis for comparison with alternatives that prepare for potential future growth in port demand.
- 7.1.2 There have also been a series of planning and engineering alternatives which could meet the objectives of the Masterplan and which were therefore compared, following which a preferred alternative was chosen. These various alternatives have been assessed as part of the SEA process in order to inform decision-making.
- 7.1.3 It is a requirement of SEA that the likely significant effects are identified in relation to "reasonable alternatives taking into account the objectives and the geographical scope of the plan" (EU SEA Directive, Article 14). Only alternatives which were identified as being reasonable towards achieving the objectives of the Masterplan, and which are within the remit of DPC to deliver, were considered.
- 7.1.4 In accordance with 'best practice', Masterplan objectives have not been defined too narrowly, allowing all reasonable alternatives to be considered. The purpose and objectives of the Masterplan are discussed in more detail in Section 4.
- 7.1.5 Figure 7 illustrates how the different reasonable alternatives have been systematically assessed. It should be borne in mind that Sections 7.2 to 7.7 must be read to understand how the preferred alternatives were arrived at. It is necessary to highlight the preferred alternatives in the diagram in order to illustrate 'tiering' in the alternatives assessment. However, the preferred alternatives were only selected after the considerations of Sections 7.2 to 7.7 were taken into account. Those alternatives highlighted in yellow are the ones taken forward with a green line depicting the preferred alternatives.
- 7.1.6 The following sections also describe the reasons for selecting the preferred alternatives which have been taken forward into the current Masterplan.
- 7.1.7 The preferred alternatives have largely been chosen in relation to the main uses of the site, physical constraints and engineering feasibility. In choosing the preferred alternatives, if any had been found to be incompatible, then these would have been re-reviewed. The preferred alternatives were however found to be compatible.

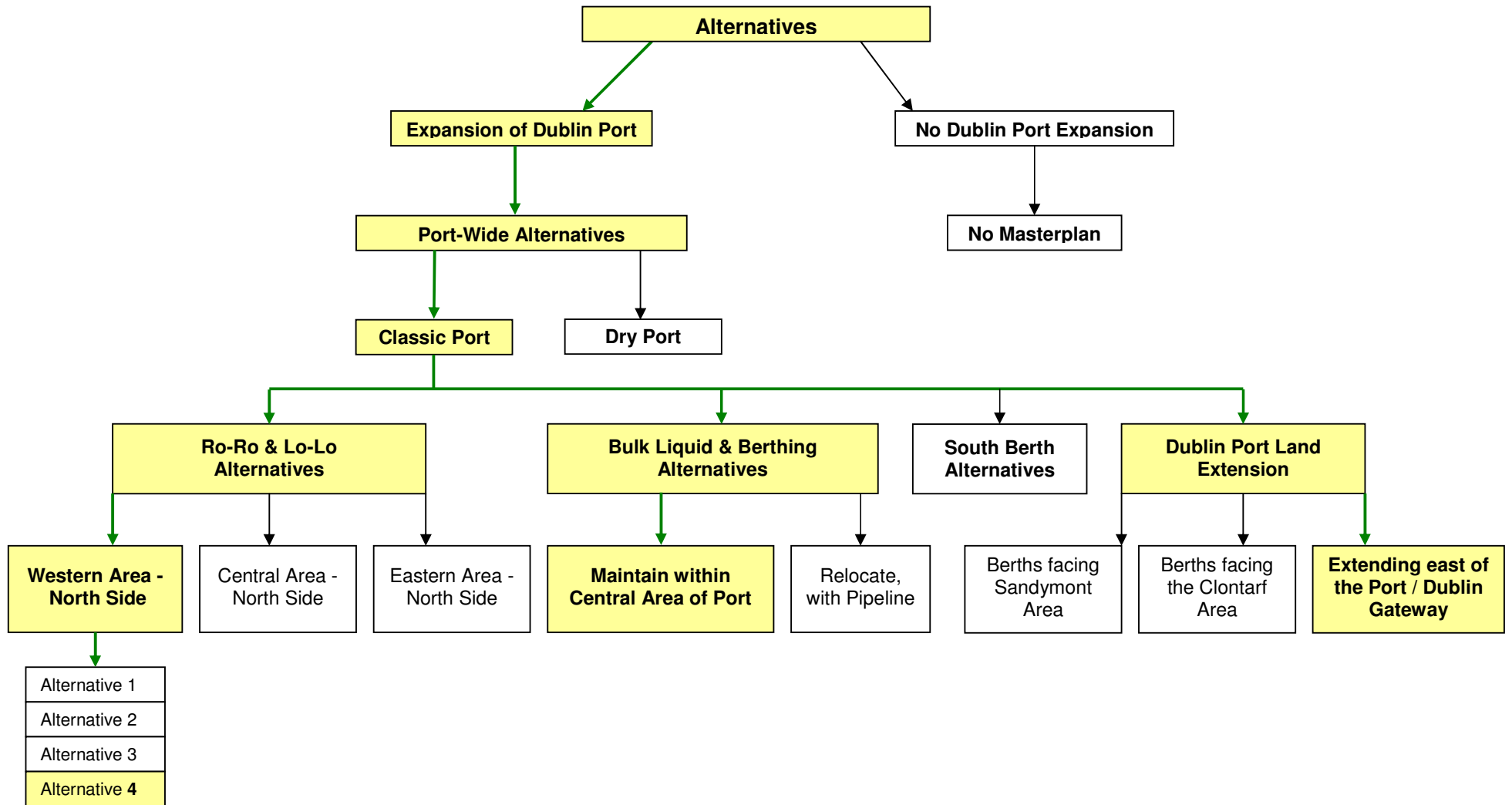
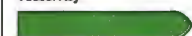







Figure 7: Illustration of the Systematic Assessment of Port Alternatives

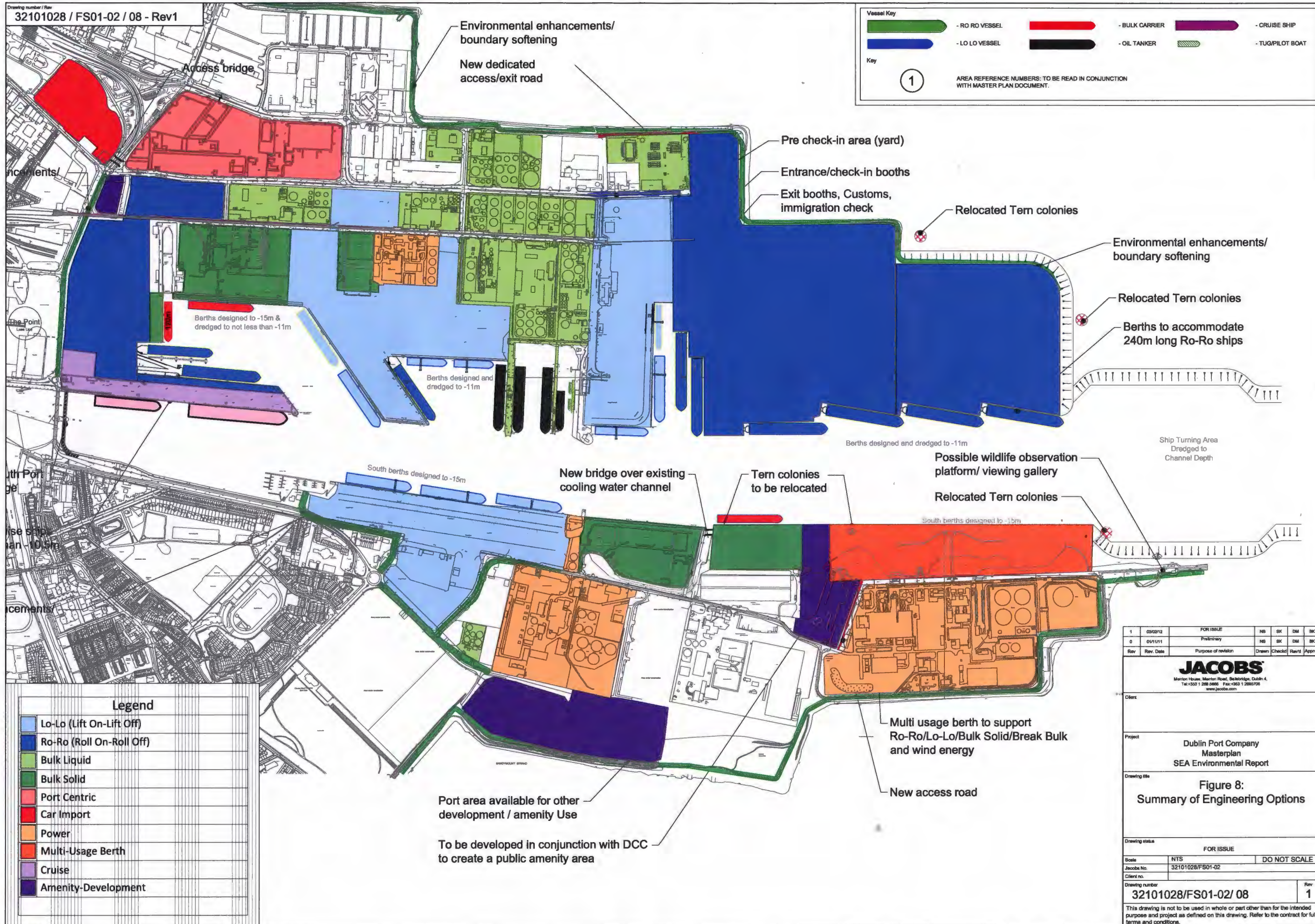
- 7.1.8 Figure 8 presents a summary of the Masterplan Engineering Alternatives. The Masterplan has categorised the port into zones based on trade which principally includes the following:
- Unitised (Container)Trade – Lo-Lo and Ro-Ro;
 - Oil & Gas Imports;
 - Dry Bulk Materials;
 - Cruise Liner Operations;
 - Project Cargoes (such as machinery and/or wind turbine parts); and
 - Car Import Trade.
- 7.1.9 Please refer to the Masterplan for further description of currently preferred engineering 'options', which are the preferred alternatives.

Vessel Key








	- RO RO VESSEL		- BULK CARRIER		- CRUISE SHIP
	- LO LO VESSEL		- OIL TANKER		- TUG/PILOT BOAT

Key

① AREA REFERENCE NUMBERS: TO BE READ IN CONJUNCTION WITH MASTER PLAN DOCUMENT.



Legend

	Lo-Lo (Lift On-Lift Off)
	Ro-Ro (Roll On-Roll Off)
	Bulk Liquid
	Bulk Solid
	Port Centric
	Car Import
	Power
	Multi-Usage Berth
	Cruise
	Amenity-Development

1	03/02/12	FOR ISSUE	NS	SK	DM	SK
0	06/11/11	Preliminary	NS	SK	DM	SK
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Revised	Approved
JACOBS Marine House, Marston Road, Balaclava, Dublin 4. Tel: +353 1 288 0800 Fax: +353 1 288 0700 www.jacobs.com						
Client						
Project Dublin Port Company Masterplan SEA Environmental Report						
Drawing title Figure 8: Summary of Engineering Options						
Drawing status FOR ISSUE						
Scale NTS			DO NOT SCALE			
Drawing number 32101028/FS01-02/08						
						Rev 1
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7.2 Strategic Alternatives – Expansion vs. No Dublin Port Expansion

- 7.2.1 A key decision early in the masterplanning process has been whether or not to accommodate the planned growth in demand at Dublin Port (refer to Section 4). As stated in Section 4, the Masterplan is not a definitive, timed development programme, but rather a strategy containing preferred engineering options which can be implemented to meet increased demand as and when it occurs.
- 7.2.2 The trigger to implementation is growth in demand, and therefore it is conceivable that market demand may be such that no options would be developed. However, on the basis of current forecasts, it is likely that growth in demand will occur and therefore this SEA compares how the anticipated increase in demand would be catered for under a 'Dublin Port Expansion' versus a 'No Dublin Port Expansion' scenario. These are defined as follows:
- No Dublin Port Expansion: DPC does not prepare a Masterplan, but the projected increase in sea freight and passenger demand would still occur. If Dublin Port fails to accommodate this increasing demand, provision will be required in Ireland for additional physical capacity including suitable infrastructure such as deep water berthage to meet this growth in demand.
 - Dublin Port Expansion: DPC prepares a Masterplan, and sets out a series of developments aimed at accommodating increasing demand in freight and passenger throughput. This could involve a combination of redevelopment of existing facilities, dredging to create deeper berths and land reclamation to expand the port.
- 7.2.3 Whilst there may be some unused capacity at other ports in Ireland, the scale of future growth is such that it is unlikely that it would be accommodated fully at other ports in Ireland without major investment in both the individual ports and in the infrastructure associated with accessing the major road and rail networks.
- 7.2.4 As part of the SEA process, a high-level assessment has been conducted of the risks and opportunities presented with regard to each of these scenarios. This has been undertaken as a 'compatibility appraisal' against the SEA Objectives.
- 7.2.5 This appraisal has been undertaken on the basis of professional judgement to ensure that significant risks of negative effects and opportunities for beneficial effects are fully reflected in the decision-making process. The 'compatibility appraisal' also ensures that the range of variants of the 'No Dublin Port Expansion' alternative, which could involve the many different ports around Ireland, is fully considered using a risk-based approach.
- 7.2.6 This assessment assumes that either one alternative or the other must occur, and there is no true 'do nothing' comparison. This is the most realistic approach, as it is unrealistic to assume that decision-makers would set a cap on all port expansion as market demand rises.
- 7.2.7 It should also be noted that the assessment does not take account of the temporary, relatively short-term risks or impacts associated with the construction phase, as such risks or impacts are typically amenable to mitigation and are sufficiently common to both alternatives that such factors are unlikely to represent key differentiators.

Table 7.1: Assessment of Strategic Alternatives

KEY	
+	Positive effects likely
0	Negligible effects likely
-	Negative effects likely
N/A	Does not apply to this particular decision (but may apply to detailed Masterplan)

SEA Objectives	No Dublin Port Expansion	Dublin Port Expansion
Population, Human Health and Deprivation		
To improve the strength of the Irish economy, whilst positively attracting business and allowing for the retention and expansion of existing businesses.	-	+
	<p>Substantial extra cost to serve Dublin market, varying with distance from Dublin. In addition, shipments are expected to increase in size in the future, and thus one shipment will serve more destinations within Ireland. This future trend better is suited to the transport infrastructure around Dublin, as opposed to any other alternative location.</p> <p>However, this assessment is based only on meeting the market demand for shipments destined for Dublin or shipments of a truly national nature. It is not generic to all types of shipping or port expansion, which may very well be beneficial to regional economies.</p>	<p>Without development, some alternative port locations cannot accommodate the larger ships which are forecasted. As stated to the left, the trend in increasing shipment size may be better suited to Dublin than other ports, given destinations for a single shipment could be on all sides of the island. The motorway and rail network of Ireland centres on Dublin and may facilitate this transport more efficiently.</p> <p>Dublin City is a substantial importer and exporter of goods, making Dublin Port the preferred economic alternative for sea shipping. Almost 50% of the goods coming through Dublin Port are destined for areas falling within the M50 ring.</p>
To improve the accessibility of community amenities and facilities to local residents.	0	0
	Without comparing against a detailed proposal, it is not possible to identify the relative 'net risk' or 'net benefit' of expanding other ports.	Negligible potential for significant community severance locally, given nature of port developments needed and established surface transport routes.
Biodiversity – Flora and Fauna		
Protect and enhance biodiversity levels in general with particular regard for the nationally and internationally protected sites in vicinity of the port.	-	-
	<p>All port expansions carry risks to biodiversity.</p> <p>Certain alternative ports would require large-scale development with greater risk of impacts.</p> <p>Additionally, certain alternative port locations are located in the vicinity of <i>Natura 2000</i> designated sites and therefore any development requires appropriate consideration of this</p>	<p>Aspects relating to biodiversity such as fisheries, <i>Natura 2000</i> designations (etc.) are recognised.</p> <p>At this stage, further assessment of the potential impacts, and options to mitigate or eliminate these, is required. (See Section 8 for the later stage of assessment.)</p>

SEA Objectives	No Dublin Port Expansion	Dublin Port Expansion
	aspect.	
Flood Risk and Coastal Management		
To enhance the management of flood risk and coastal erosion, whilst taking account of other flood protection developments.	N/A Cannot differentiate without detailed study, and likely to be negligible difference overall.	N/A Cannot differentiate without detailed study, and likely to be negligible difference overall.
Water Quality (Surface and Ground)		
To improve water quality of the surface and ground water bodies and support the achievement of the WFD objectives.	- As stated previously, whilst there may be some unused capacity at other ports in Ireland, the scale of future growth is such that it is unlikely that it would be accommodated fully at other ports in Ireland without major investment and development. Some of the alternative port locations would require significant development works to address additional land capacity issues and required works on the coastline areas such as channel deepening and widening, and construction of breakwaters. . However, it is recognised that this risk is not relevant to all alternative port locations.	+ Dublin Port is located within a brownfield area and lies within the Eastern River Basin District (ERBD). The ERBD is currently characterised as a heavily modified water body. The water quality risks from port operations are understood. DPC operations and activities are currently managed by DPC through the port's Emergency Response Plan and Operating Procedures which form part of the company's environmental management system (EMS).
Water Usage		
To reduce the rate of water usage per unit of freight and passenger throughput.	N/A Cannot differentiate without detailed study, and likely to be negligible difference overall.	N/A Cannot differentiate without detailed study, and likely to be negligible difference overall.
Noise		
To improve the management of noise impacts and avoid any new significant noise impacts on people or the environment.	- All port expansions carry the risk of increased noise generation or moving noise sources closer to receptors. Certain alternative ports would require large-scale development with greater risk of impacts.	- Risk of noise impacts from port operations is recognised. However, the expansion of an existing port estate and the use of existing transport routes may limit the risk presented by other alternative port location developments. With appropriate assessment the potential for noise

SEA Objectives	No Dublin Port Expansion	Dublin Port Expansion
		<p>impacts can be mitigated.</p> <p>At this stage, it is not possible to assess as 'positive' overall without additional information on detailed design proposals.</p>
Air Quality		
<p>To avoid any significant air quality impacts on people or the environment.</p>	<p>–</p> <p>As stated previously, there would be increased transport and longer travel from any alternative port to service the Dublin markets, likely leading to greater overall emissions.</p> <p>–</p> <p>However, it is unknown how likely it is that increased air pollution from operation of an alternative port and road traffic would exceed legislative limit values at any location.</p>	<p>–</p> <p>There are advantages to Dublin Port, including the ability to increase the use of rail freight and shorter transport journeys by road as a large volume of the freight will be distributed within Dublin. As outlined above, almost 50% of the goods coming through Dublin Port are destined for areas falling within the M50 ring. This proportion increases to approximately 75% when the line is extended to an 80 km radius of Dublin City.</p> <p>–</p> <p>However, it is recognised that the Environmental Protection Agency (EPA) have identified that areas such as Dublin City are being increasingly impacted by traffic and that continued increases in NO₂ emissions at some EPA monitoring locations may result in future breaches in legislative limits.</p>
Climate Change		
<p>To improve the carbon performance of port activities and operations (including transport).</p>	<p>–</p> <p>Other alternative port locations have at least one key disadvantage, such as the requirement for substantially greater new infrastructure (and thus greater embodied carbon and construction emissions), greater road transport distances to Dublin or in delivering 'national scale' shipments, or lack of rail provision.</p>	<p>+</p> <p>Given the proportion of goods originating from or destined for Dublin, as well as the pre-existing infrastructure including existing rail and recent road network upgrades, would have a lesser overall emissions impact.</p>
Waste Management		
<p>To increase the rate of reuse and recycling, and the amount of reused and recycled materials in</p>	<p>0</p> <p>Without comparing against a detailed proposal, it is not possible to identify the relative 'net risk' or 'net benefit' of expanding other ports.</p>	<p>0</p> <p>Whilst there are a number of efficiencies of upgrading an existing port, there is no direct comparison to be made.</p>

SEA Objectives	No Dublin Port Expansion	Dublin Port Expansion
construction against industry averages.		
Archaeological and Architectural Heritage		
To enhance the conservation of archaeological/architectural heritage, and improve our understanding of this heritage, with particular regards to local maritime and industrial heritage	<p>All port expansions carry the risk of heritage impacts.</p> <p>Some alternative port locations would require large-scale development with greater risk of impacts.</p> <p>However, it is recognised that this may not be relevant to all port locations.</p>	<p>Expansion of the port presents the potential for impacts to heritage assets at Dublin Port and in Dublin Bay, both on integrity and setting.</p> <p>These can only be eliminated at detailed design. However, the Masterplan and Masterplan Objectives have implemented measures to avoid direct impacts on all Protected Structures and to integrate new development with the built and natural landscapes of the surrounding area.</p>
Landscape		
To avoid significant negative impacts of existing and future port development on the landscape character of the area, and achieve benefits where possible	<p>All port expansions carry the risk of landscape impacts.</p> <p>Certain alternative port locations would require large-scale development with greater risk of impacts, though this depends upon location.</p>	<p>The expansion of the port presents the risk of increased visual impacts to neighbouring residential areas, though likely much less than the 'No Dublin Port Expansion' alternative.</p> <p>Not possible to assess as 'positive' overall without detailed design, though the potential for soft boundary enhancements to improve the situation at the port could lead to net benefits. (See Section 15 for the later stage of assessment.)</p>
Transport		
To avoid significant negative impacts in terms of traffic levels.	<p>As stated previously, shipments are expected to increase in size in the future, and thus one shipment will serve more destinations within Ireland. This future trend better is suited to the transport infrastructure around Dublin, as opposed to any other alternative port location.</p> <p>Also, Dublin City is a substantial importer and exporter of goods (almost 50% of the goods coming through Dublin Port are destined</p>	<p>Although port growth will lead to greater traffic, as outlined above much of this freight is destined for Dublin and the surrounding hinterlands.</p> <p>Additionally, there is an established rail link at Dublin Port which can be expanded.</p> <p>It is considered that the road infrastructure surrounding Dublin City is potentially the best suited for shipments with multiple destinations in</p>

SEA Objectives	No Dublin Port Expansion	Dublin Port Expansion
	<p>for areas falling within the M50 ring)meaning more shipments from other alternative port locations will have to travel longer distances to reach Dublin City.</p> <p>Again, this assessment is based only on meeting the market demand for shipments destined for Dublin or shipments of a truly national nature. It is not generic to all types of shipping or port expansion, which may very well be beneficial.</p>	<p>Ireland, with Dublin being central to Ireland's motorway network.</p>

7.2.8 Table 7.1 indicates the advantages of enhancing Dublin Port to meet with the projected growth in demand within the Irish economy.

7.2.9 These advantages include the following:

- the efficient and economic transport of goods by sea and land, with Dublin Port making the greatest use of the existing rail facilities and also the motorway network;
- lesser impact in terms of greenhouse gas emissions given the proportion of good originating from the port being transported within Dublin City and the surrounding hinterlands; and
- there is also greater certainty of being able to limit and manage any impacts on WFD objectives for coastal and estuarine geomorphology.

7.2.10 At this high-level comparative stage, certain risks are considered roughly equivalent between the two alternatives or potentially equivalent depending upon how the scenarios are implemented. These include the risks of new developments leading to negative impacts on community accessibility, biodiversity, noise, air quality, waste production, archaeological and architectural heritage and landscape.

7.2.11 It is not likely that all risks would be equivalent under any scenario of the 'No Dublin Port Expansion' scenario, as this implies the careful distribution of future increases in freight and passenger throughput on previously developed port sites. There are many possible scenarios under the 'No Dublin Port Expansion' scenario, and it is not realistic to choose one arbitrarily. Some impacts resulting from the 'No Dublin Port Expansion' scenario may be greater and other may be less than those resulting from the 'Dublin Port Expansion'

7.2.12 It should be recognised that Dublin Port can intensify operations largely within an existing land footprint, as compared to certain scenarios of the 'No Dublin Port Expansion' scenario which may require either a brand new port, or substantial extensions requiring additional undeveloped land or modification of the coastline.

7.2.13 At least one of these 'non Dublin' extensions or a new port could be in the vicinity of relevant receptors (e.g. biodiversity sites or local residents). Therefore in many respects, the risks at Dublin Port could be less for biodiversity, noise, heritage and landscape (as compared to the overall national impact).

7.2.14 The above is also possibly true for air quality. It is recognised that the EPA have identified that areas such as Dublin City are being increasingly impacted by traffic and

that continued increases in NO₂ emissions at some EPA monitoring locations may result in future breaches in legislative limits. This will require consideration and management as part of any assessment of future expansion proposals for Dublin Port. The alternative of expanding other ports' throughput is likely to require greater transport distances overall and possibly greater use of regional and local roads. This could generate more emissions in the vicinity of receptors (as compared to Dublin Port, which can maximise use of the national motorway network).

7.2.15 In conclusion, the 'Dublin Port Expansion' scenario has been selected, as it offers a number of advantages, and the potential disbenefits are likely to be broadly equivalent to the 'No Dublin Port Expansion' alternative. In this assessment, it is recognised that any scenario selected would involve certain 'trade-offs' of disbenefits in exchange for benefits. However, in addition to this recognition, it is considered that the potential negative impacts at Dublin Port are well understood and can be either avoided or reduced to an acceptable level.

7.3 Port-Wide Alternative – Dry Port

7.3.1 An alternative considered early in Masterplan development was the 'dry port' alternative, as compared to the classic sea port. These alternatives are defined as follows.

- Dry Port Configuration: in the event that lack of storage space imposed constraints on container trade through the port, consideration could be given to the establishment of an inland multi-modal interchange (or 'dry port'), which could be serviced by enhancement / extension of the existing rail infrastructure to the respective container berths. The containers would be transported by rail shuttle to the dry port facility at a suitable location outside of Dublin Port, from which distribution would subsequently take place by road or rail as appropriate. Another permutation of this alternative included HGVs to an external rail head for subsequent distribution, which in turn requires transfer back from rail to HGVs.
- Classic Port Configuration: container trade managed and stored port-side, as currently.

7.3.2 The Dry Port Configuration was developed at a conceptual level to enable the operational and freight handling implications to be considered. This did not extend to the identification of potential sites that might accommodate the dry port, although it is assumed that such a facility would be located on the periphery of the Greater Dublin Area.

7.3.3 This comparative assessment was approached in the same way as the 'No Dublin Port Expansion' versus 'Dublin Port Expansion' alternatives described in the previous section; the outcome of this assessment is provided in Table 7.2 below.

Table 7.2: Assessment of Dry Port Alternative vs. 'Classic' Sea Port

KEY	
+	Positive effects likely
0	Negligible effects likely
-	Negative effects likely
N/A	Does not apply to this particular decision (but may apply to detailed Masterplan)

SEA Objectives	Dry Port	Classic Port
Population, Human Health and Deprivation		
To improve the strength of the Irish economy, whilst positively attracting business and allowing for the retention and expansion of existing businesses.	- Requires substantial investment in an external facility and supporting infrastructure. Requires additional handling / transferral of goods, which can reduce efficiency and may not be preferred by shipping companies. Many of the markets for goods are relatively close to Dublin City Centre, hence making this form of shipping less likely to be economically viable.	+ Least cost alternative, which maintains the flexibility currently available at the port – option of rail transfer / distribution is available but not compulsory.
To improve the accessibility of community amenities and facilities to local residents.	- A new external facility presents new risks of impacts to communities, depending upon its location and the road/rail transport routes required.	0 The 'worst case' is that existing impacts may be worsened, however no new impacts to identify, mitigate or manage.
Biodiversity – Flora and Fauna		
Protect and enhance biodiversity levels in general with particular regard for the nationally and internationally protected sites in vicinity of the port.	- A new external facility presents new risks of impacts to biodiversity (terrestrial or freshwater aquatic), depending upon its location and the road/rail transport routes required.	+ May require land reclamation / port extension into environmentally sensitive areas including Natura 2000 designated sites. However there are strong legislative controls in place with regard to how any such proposal can proceed. This alternative avoids the need for a new external facility with associated unknown landtake and transport impacts on landward biodiversity.
Flood Risk and Coastal Management		
To enhance the management of flood risk and coastal erosion, whilst taking account of other flood protection developments.	+ An inland facility would be subject to flood risk assessment, and likely to be located in area of little to no flood risk. Appropriate attenuation likely to be achieved.	0 Dublin City is located in an area identified as being at risk from fluvial and coastal flooding. However, there are a number of flood protection and flood risk management studies and schemes currently being undertaken in the area of the port

SEA Objectives	Dry Port	Classic Port
		estate.
Water Quality (Surface and Ground)		
To improve water quality of the surface and ground water bodies and support the achievement of the WFD objectives.	- A dry port facility introduces additional handling of freight, which increases the risk of an accidental spill and thus pollution incident.	+ Avoids the extra handling / transfer of freight, minimising incident / spill risk. The water quality risks from port operations are understood, with stringent measures in place to minimise any potential risks. DPC operations and activities are managed by DPC through the port's Emergency Response Plan and Operating Procedures which form part of the company's environmental management system.
Water Usage		
To reduce the rate of water usage per unit of freight and passenger throughput.	N/A Cannot differentiate without detailed study, and likely to be negligible difference overall.	N/A Cannot differentiate without detailed study, and likely to be negligible difference overall.
Noise		
To improve the management of noise impacts and avoid any new significant noise impacts on people or the environment.	- A new external facility and additional freight handling present potential risk of moving new noise sources closer to previously unexposed receptors, depending upon its location and the road transport routes required.	0 It is recognised that the port expansion may result in increased noise emissions. It is considered that these impacts can be mitigated. However, no new impacts (i.e. new receptors) are likely to be identified.
Air Quality		
To avoid any significant air quality impacts on people or the environment.	- Shifts road transport air pollution from the port to inland areas, and it is unknown how likely this alternative is to exceed legislative limit values along any road or at the new facility.	- The EPA has identified that areas such as Dublin City are being increasingly impacted by traffic and that continued increase in NO ₂ emissions at some EPA monitoring locations may result in future breaches in legislative limits. The potential for impacts on air quality is recognised.

SEA Objectives	Dry Port	Classic Port
Climate Change		
To improve the carbon performance of port activities and operations (including transport).	- Requirement for substantial new construction (and thus greater embodied carbon and construction emissions). Operational emissions depend upon the precise location of the external facility. Presume there would be 'trade-offs', with some transport distances increased overall, but others shortened.	+ Avoids the need for construction of an entirely new development and supporting infrastructure. Existing pattern of emissions broadly maintained and intensified, though some long-term reductions from greater use of rail.
Waste Management		
To increase the rate of reuse and recycling, and the amount of reused and recycled materials in construction against industry averages.	- A new external facility and supporting infrastructure requires construction as well as added freight handling, which could generate more waste.	+ Avoids the potential for additional waste from added construction processes and additional freight handling. Much material can be reused on-site for land reclamation and infill.
Archaeological and Architectural Heritage		
To enhance the conservation of archaeological/architectural heritage, and improve our understanding of this heritage, with particular regards to local maritime and industrial heritage	0 A new external facility presents the potential for heritage impacts, which depend upon its location. However, it may avoid risks of certain heritage impacts at the port.	0 This alternative requires increased development at the port, and presents the potential for certain types of impact on certain heritage features. However, this alternative avoids the potential for impacts from a new inland development. The Masterplan includes an objective to avoid direct impacts on all Protected Structures.
Landscape		
To avoid significant negative impacts of existing and future port development on the landscape character of the area, and achieve benefits where possible	- A new external facility presents new risks of landscape and visual impacts, depending upon its location.	0 The potential for impacts on landscape is recognised. However, these impacts will be identified, managed and mitigated appropriately.

SEA Objectives	Dry Port	Classic Port
Transport		
To avoid significant negative impacts in terms of traffic levels.	0 Transport distances and routes used depend upon the precise location of the external facility. It is expected that there would be 'trade-offs', with some traffic levels increased overall, but some reduced.	0 Existing traffic pattern broadly maintained and intensified, though some long-term reductions from greater use of rail.

- 7.3.4 The potential benefits of a dry port have been found to be somewhat limited in Dublin. In other parts of the world, they tend to increase seaport capacity and productivity, and can reduce road congestion and maintenance. They can lower environmental impacts and improve access to areas outside of the seaport's traditional hinterland. However, this may best apply where a seaport is not already located quite centrally to key transport routes, as is the case at Dublin Port. Dublin Port already has a rail link, and Dublin Port is very central to the national motorway network.
- 7.3.5 Much of Dublin Port's freight intake originates within or is destined for Dublin and the surrounding hinterlands. Any external dry port would therefore be best located within or at the outskirts of the city, and some of this traffic would enter back into the city.
- 7.3.6 Further outcomes of the SEA are outlined Table 7.2 above. The only substantial benefit that may accrue to the dry port alternative relates to flood risk; however, there are a number of pre-existing flood risk management measures at Dublin Port. The risk and response to the rare extreme flood event is therefore not considered a major constraint to the port.
- 7.3.7 Given its many advantages, the 'Classic Port Configuration' alternative was selected for the Masterplan.

7.4 Ro-Ro and Lo-Lo Alternatives

- 7.4.1 Several alternatives to the currently proposed Roll-on Roll-off (Ro-Ro) and Load-on Load-off (Lo-Lo) configuration have been proposed. The different alternatives for Ro-Ro cannot be considered in isolation from Lo-Lo, and likewise the inevitable decision made could not look at these in isolation from the rest of the port.

Western Area of Dublin Port – North Side

- 7.4.2 In the west of the port, the following key alternatives were considered feasible:
- Alternative 1: Infill / Reclaimed Area in Alexandra Basin West: large-scale infill in this area east of East Wall Road, for use by Lo-Lo facilities. This would replace the existing berths in this area, as well as the bulk jetty (bulk handling capability). This alternative is presented in Figure 9;
 - Alternative 2: Ro-Ro Berth in North Wall Extension and Within Alexandra Basin West (ABW): this alternative would reduce the number of cruise ships in this area to one or none, but expand Ro-Ro area and provide more room for modernisation. This alternative is presented in Figure 10;

- Alternative 3: Ro-Ro Switched With Lo-Lo (South Side) (Ringsend area): this alternative would swap these land uses, moving Lo-Lo (from the South side of the port) up to the East Wall Road area (like the infill alternative above), and Ro-Ro down to the South side of the port. This alternative is presented in Figure 11;
- Alternative 4: Expanded Ro-Ro, 2x Cruise Ship Berths and Bulk Handling Upgrade: this alternative expands and enhances the existing Ro-Ro in the west of the port, whilst replacing existing bulk handling jetty and facilities with modern berths and conveyor system. The North Quay Extension Quay would become dedicated to cruise ships, and have new quay walls, a tourist information centre and related facilities. This alternative is presented in Figure 12 .

INFILL / RECLAIMED AREA IN ALEXANDRA BASIN WEST

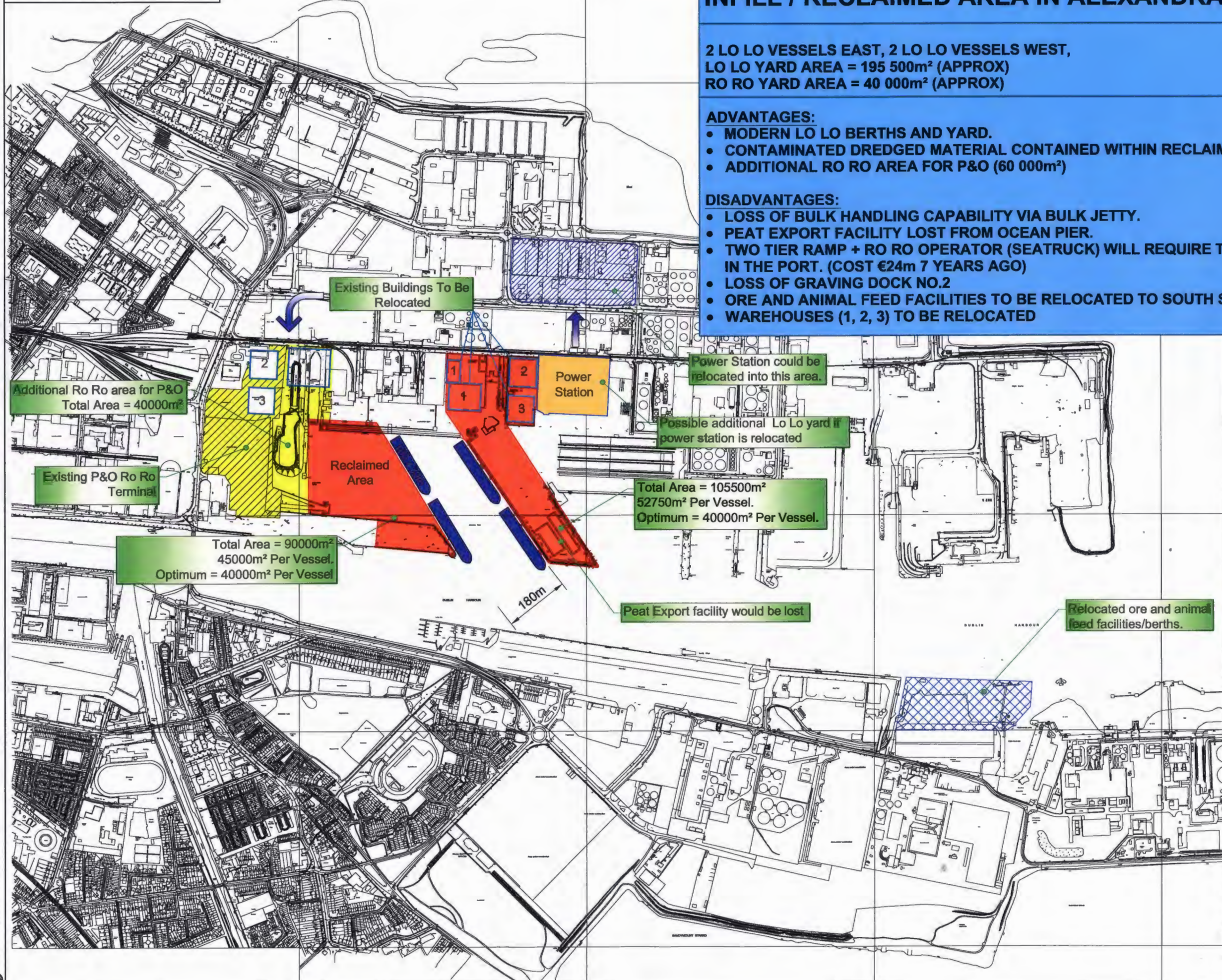
2 LO LO VESSELS EAST, 2 LO LO VESSELS WEST,
LO LO YARD AREA = 195 500m² (APPROX)
RO RO YARD AREA = 40 000m² (APPROX)

ADVANTAGES:

- MODERN LO LO BERTHS AND YARD.
- CONTAMINATED DREDGED MATERIAL CONTAINED WITHIN RECLAIMED HARDSTANDING.
- ADDITIONAL RO RO AREA FOR P&O (60 000m²)

DISADVANTAGES:

- LOSS OF BULK HANDLING CAPABILITY VIA BULK JETTY.
- PEAT EXPORT FACILITY LOST FROM OCEAN PIER.
- TWO TIER RAMP + RO RO OPERATOR (SEATRUCK) WILL REQUIRE TO RELOCATE ELSEWHERE IN THE PORT. (COST €24m 7 YEARS AGO)
- LOSS OF GRAVING DOCK NO.2
- ORE AND ANIMAL FEED FACILITIES TO BE RELOCATED TO SOUTH SIDE. WILL BE EXPENSIVE.
- WAREHOUSES (1, 2, 3) TO BE RELOCATED



Approximate Areas Gained/Lost

Area Gained = 235500m²

Area Lost = 0

Net Area Gained = 235500m²

Key

- LO LO STORAGE
- RO RO STORAGE
- LO LO VESSEL (200 x 30m)
- RO RO VESSEL (240 x 36m)
- BULK CARRIER (200 x 25m)

1	03/02/12	FOR ISSUE	LM	SK	DM	SK
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Client: Dublin Port Company
Project: Masterplan
SEA Environmental Report

Drawing title: **Figure 9: Alternative Option Considered Infill / Reclaimed Area in Alexandra Basin West**

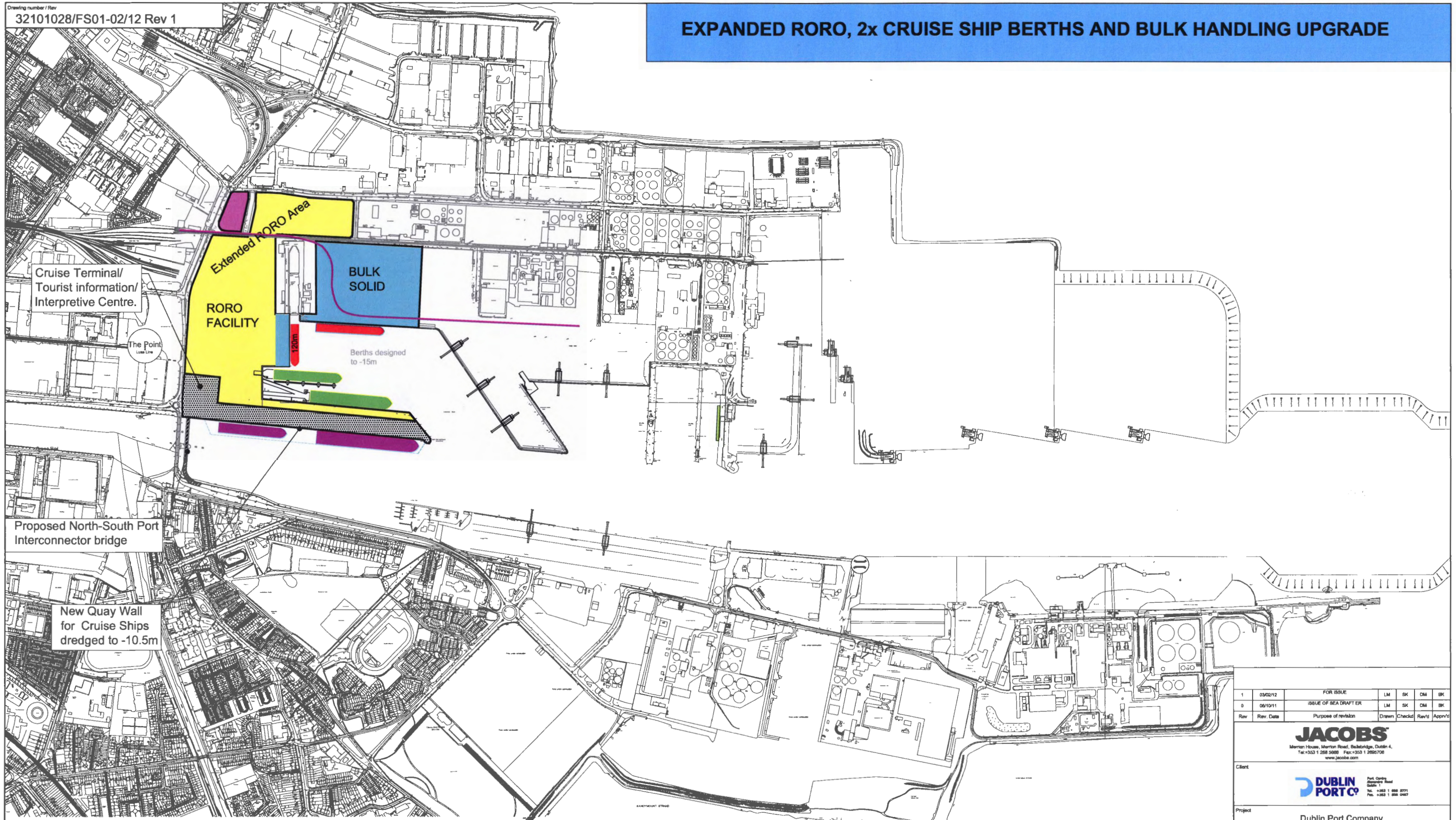
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EXPANDED RORO, 2x CRUISE SHIP BERTHS AND BULK HANDLING UPGRADE



Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd
1	03/02/12	FOR ISSUE	LM	SK	DM	SK
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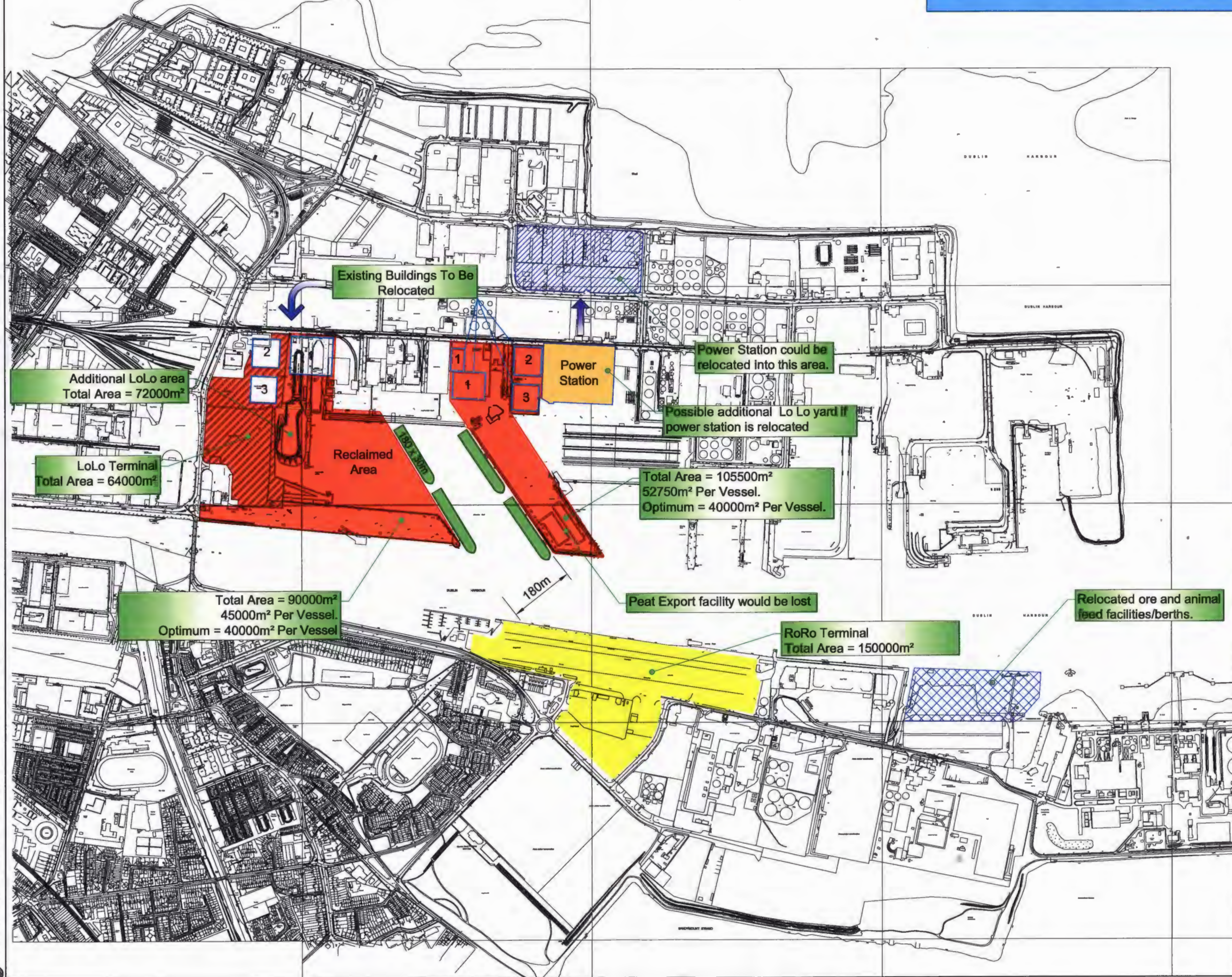
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Masterplan
SEA Environmental Report

Drawing title
Figure 12
Alternative Option Considered:
Expanded RoRo, 2x Cruise Ship
Berths and Bulk Handling Upgrade

Drawing status		FOR ISSUE
Scale	NTS	DO NOT SCALE
Jacobs No.	32101028	
Client no.		

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Approximate Areas Gained/Lost

Area Gained = 235500m²

Area Lost = 0

Net Area Gained = 235500m²

Key

- LO LO STORAGE
- RO RO STORAGE
- LO LO VESSEL (200 x 30m)
- RO RO VESSEL (240 x 36m)
- BULK CARRIER (200 x 25m)

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Figure 11:
Alternative Option Considered
RoRo Switched With LoLo
at South Berths

Drawing status		FOR ISSUE
Scale	1:5000 @ A1	DO NOT SCALE
Jacobs No.	32101028/FS01-02	
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RORO BERTH IN NORTH WALL EXTENSION AND WITHIN ALEXANDRA BASIN WEST

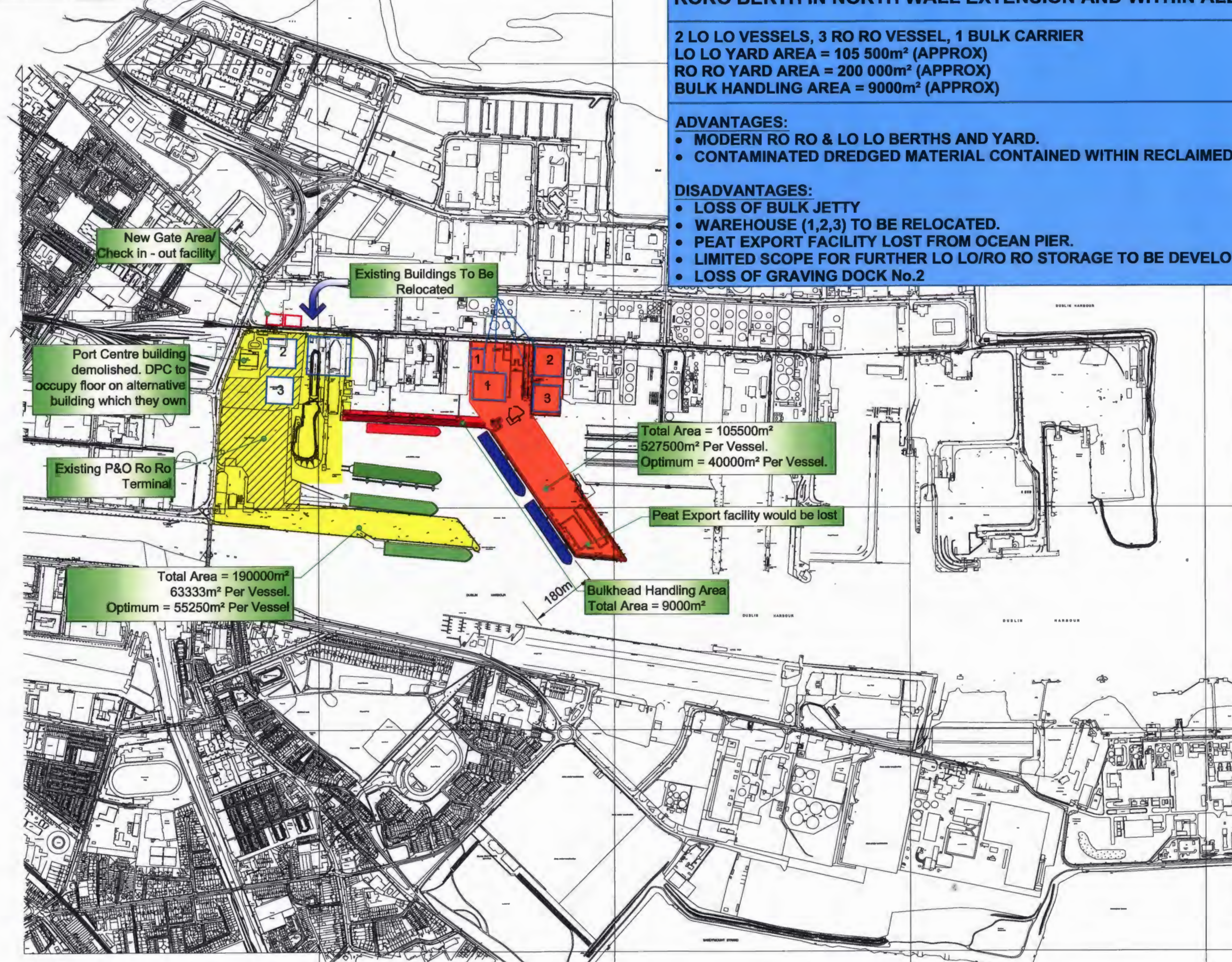
2 LO LO VESSELS, 3 RO RO VESSEL, 1 BULK CARRIER
 LO LO YARD AREA = 105 500m² (APPROX)
 RO RO YARD AREA = 200 000m² (APPROX)
 BULK HANDLING AREA = 9000m² (APPROX)

ADVANTAGES:

- MODERN RO RO & LO LO BERTHS AND YARD.
- CONTAMINATED DREDGED MATERIAL CONTAINED WITHIN RECLAIMED HARDSTANDING.

DISADVANTAGES:

- LOSS OF BULK JETTY
- WAREHOUSE (1,2,3) TO BE RELOCATED.
- PEAT EXPORT FACILITY LOST FROM OCEAN PIER.
- LIMITED SCOPE FOR FURTHER LO LO/RO RO STORAGE TO BE DEVELOPED AT THESE LOCATIONS.
- LOSS OF GRAVING DOCK No.2



Approximate Areas Gained/Lost

Area Gained = 314500m²
 Area Lost = 0
 Net Area Gained = 314500m²

Key

- - LO LO STORAGE
- - RO RO STORAGE
- ▬ - LO LO VESSEL (200 x 30m)
- ▬ - RO RO VESSEL (240 x 36m)
- ▬ - BULK CARRIER (200 x 25m)

1	09/02/12	FOR ISSUE	LM	SK	DM	SK
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Client: Dublin Port Company
 Draft Masterplan
 SEA Draft Environmental Report

Drawing title: Figure 10 Alternative Option Considered:
 RoRo Berth in North Wall
 Extension and Within Alexandra
 Basin West

Drawing status: FOR ISSUE
 Scale: 1:5000 @ A1 DO NOT SCALE
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7.4.3 The assessment of these alternatives followed the detailed assessment methodology discussed in Section 2. Table 7.3 below summarises the results of the assessment. Refer to Section 2 for the key to the symbols and colours used.

Table 7.3: Assessment of Western Ro-Ro Alternatives

SEA Topic	Alternative 1	Alternative 2	Alternative 3	Alternative 4
	Infill / Reclamation in ABW	Ro-Ro in Main Channel	Switch Ro-Ro West & Lo-Lo South	New Ro-Ro, Cruise Berths & Bulk Handling
Business and Economy	+	-	---	++
Accessibility and Community	Not a differentiating factor – little potential for impacts.			
Biodiversity	Not a differentiating factor – all carry approximately equivalent temporary construction risks. Little operational difference in terms of impacts.			
Flood Risk & Coastal	Not a differentiating factor – all carry equivalent flood risk.			
Water Quality	-	0	-	0
Water Usage	Not a differentiating factor – water consumption only displaced to other areas of the port.			
Noise	0	0	++	+
Air Quality	--	-	--	-
Climate Change	--	-	--	-
Waste Management	+	0	-	0
Cultural Heritage	--	-	--	-
Landscape	0	0	+	0
Transport	-	0	-	0

7.4.4 The key differentiators amongst the alternatives are:

- Alternative 4 is an economical alternative both on a construction and operational basis. The risks of impacts on ancillary infrastructure and facilities are minimal, synergies with nearby activities at the port are maximised, and cruise ships are near to the city centre, providing an accessible and attractive visitor introduction to Dublin;
- Alternative 3 is likely to improve existing noise and visual impacts at the south of the port, leading to net improvement overall. However, switching Ro-Ro and Lo-Lo would be prohibitively expensive, requiring infill and loss of berth space, displacing activities and facilities in the north which would need to be moved to the south, requiring road upgrades in the south, and a large number of other redevelopment works at either side of the port;
- both Alternative 1 and Alternative 3 would require larger-scale construction work, with the risks of a water pollution incident from working within an area with known levels of contaminated material. However, this would be controlled (and any significant incident expected to be prevented) by mitigation measures;

- both Alternative 1 and Alternative 3 would require displacement of other facilities (e.g. additional berths, bulk material handling, peat storage & export, etc.), which would put greater traffic and air emissions near residential areas, including at the tolls along the R131 between South Bank Road and the East Link Bridge;
- both Alternative 1 and Alternative 3 would require greater CO₂ (equivalent) emissions from both construction and operation, including the extra traffic between the north and south of the port for normal operation, and also to access the port Tunnel / M50 and wider road network;
- both Alternative 1 and Alternative 3 would require loss of the historic Graving Dock No.2, a local cultural heritage feature;
- Alternative 2 would displace the proposed cruise ship berthing space from the closest link to the city to elsewhere in the port, which may discourage cruise ship visits; and
- other impacts are generally the same as for general growth at the port, with minor risks attributed to air quality, climate change emission and cultural heritage. Dedicating cruise ships to the North Wall Extension Quay could reduce noise from the port to residents south of the port slightly, but the difference may be negligible.

7.4.5 It is clear from the above analysis that although switching Ro-Ro and Lo-Lo would have significant benefits regarding existing noise and visual impacts, the alternative for new Ro-Ro, Cruise Berths & Bulk Handling on the north side of the port is the more sustainable alternative, with more acceptable environmental impacts which can be easier managed through mitigation and on-going implementation of 'best practice' during port operation.

Central Area of Dublin Port - North Side

7.4.6 In the central area of Dublin Port north of the channel, where Ro-Ro does not operate (and is not planned), the only substantially different Lo-Lo alternative considered is addressed below in terms of bulk liquids. Relocation of bulk liquid berths to the south side would have created additional Lo-Lo space in this central area on the North side of the estate; however, it was concluded that the significant expenditure associated with relocation of the bulk liquids berths and facilities did not equate to the benefit derived from the additional Lo-Lo facilities.

Eastern Area of Dublin Port – North Side

7.4.7 In the east of Dublin Port (besides alternatives for land reclamation as assessed further below in Section 1.7), there were several variations on the current alternative being proposed. The main differences amongst these has been:

- berthing at the very east of the port without the proposed eastern port extension / Dublin Gateway – this alternative would have similar impacts to those of the proposed Dublin Gateway, including the impact on the internationally designated Natura 2000, Special Protection Area (SPA). However, it has since been determined that berths are best kept in the channel, whilst land reclamation may be an alternative to achieve both additional berths and land capacity for Ro-Ro operations in the east (see Section 7.7); and
- expanding Lo-Lo eastward into the Ro-Ro area, and achieving required berth space for Ro-Ro through the construction of access bridges and floating pontoons – there would be some direct impact on the SPA, and this would restrict Ro-Ro

space to below the forecasted requirement, placing pressure on further land reclamation or restricting growth at the port.

- 7.4.8 The assessment of effects is therefore consistent **with the Dublin Gateway assessment**, which in turn is consistent with the **'No Dublin Port Expansion'** assessment in Section 7.2. Both alternatives above would likely negatively affect the internationally designated SPA, **and in the long term (due to not meeting capacity requirements)**, begin to resemble the 'No Dublin Port Expansion' option with all of its drawbacks. Therefore, neither of the above alternatives is truly 'reasonable' in light of having significant negative implications whilst not even meeting the Masterplan objectives.
- 7.4.9 Neither of the above alternatives was taken forward, and the east of the port has been confirmed as dedicated to Ro-Ro.

7.5 Bulk Liquid Facilities and Berthing Alternatives

- 7.5.1 There were two main alternatives considered for the handling of bulk liquids and associated berthing in the centre of the port, between the Lo-Lo areas. These were:
- Relocate berthing facilities to the south of the port and construct sub-sea pipeline beneath the channel to connect to existing bulk liquid storage facilities on the north side of the port; this would create space for either additional Lo-Lo or Ro-Ro within the central area of the port; or
 - Maintain facilities for bulk liquid berthing and storage within the central area of the port.
- 7.5.2 Table 7.4 below summarises the key differences between these two options.
- 7.5.3 Table 7.4 able has been varied for 'business and economy' below (unlike the other options assessment tables), with construction and operation separated due to the nature making this decision.

Table 7.4: Assessment of Bulk Liquid Berthing and Handling Alternatives

SEA Topic	Relocate with Pipeline		Maintain within Central Area of Port	
	Construction	Operation	Construction	Operation
Business and Economy	--	++	0	0
Accessibility and Community	0		0	
Biodiversity	---		0	
Flood Risk & Coastal	0		0	
Water Quality	--		0	
Water Usage	0		0	
Noise	0		0	
Air Quality	0		0	
Climate Change	-		0	
Waste Management	-		0	

SEA Topic	Relocate with Pipeline	Maintain within Central Area of Port
Cultural Heritage	–	0
Landscape	0	0
Transport	+	0

7.5.4 As can be seen in Table 7.4 above, there are important operational advantages of relocating the Bulk Liquid Berthing facilities in conjunction with the pipeline. These are identified as providing operational economic benefits.

7.5.5 However, the construction costs would be high and the construction and maintenance of the sub-sea pipelines would require detailed quantitative risk assessment to ensure that the potential spill risk to receiving waters and to the internationally designated biodiversity sites in the area are fully understood. There are additional construction-phase risks associated with disruption to port operations and potential impacts on water quality, biodiversity, waste production and the historic environment.

7.5.6 Consequently, the alternative of retaining the existing bulk liquid storage and berthing arrangements has been taken forward into the current Masterplan proposals.

7.6 South Berth Alternatives

7.6.1 An area on the south bank was identified for the discharge of bulk materials that would be transferred by a conveyor system to an adjacent storage area further inland on the south side of the port estate. This option was abandoned for primarily engineering and planning reasons.

7.6.2 The proposed storage land area on the south side has now been designated for other port development or amenity use. There are no disbenefits, and potential benefits include:

- Accessibility and Community: potential footpath and amenity improvements, depending upon the final land use selected and the design;
- Biodiversity: potential to incorporate habitat enhancement or creation with the amenity uses;
- Water Quality: bulk materials storage would have required appropriate management measures in place to monitor potential runoff from operations into surface water or directly into the groundwater;
- Noise: the developments would have introduced new noise sources into the southern side of the port estate i.e. ;
- Air Quality: bulk materials storage would have been a potential source of dust emissions, which would have required appropriate management measures in place to monitor and suppress;
- Climate Change: the distance between berths and the potential bulk storage areas make the conveyor a potentially inefficient method of transferring bulk materials – i.e. potentially requiring significant energy use and associated emissions;

- Cultural Heritage: the conveyor would cross the remnants of an 18th Century sea wall listed in the Record of Monuments and Places, potentially having an impact; and
- Landscape: the current proposal presents the opportunity to create a more attractive view towards the port from the south.

7.6.3 In addition to the above, some of the proposed areas within the southern development proposals have, after careful consideration of heritage issues, now been designated for development in conjunction with Dublin City Council to create a public amenities area.

7.7 Dublin Gateway Extension

7.7.1 Few alternatives have been available for extending the area of the port. The 'do nothing' assessment has essentially the same impacts as the 'No Dublin Port Expansion' option described and assessed in Section 1.2, as without the additional area, capacity will be constrained to below projected market demand.

7.7.2 This already takes into consideration maximising the efficiency of use of existing port land, and a number of additional changes are proposed. Therefore, maximising efficiency is not a feasible, separate option. Furthermore, maximising efficiency would still not address the need for additional berths at the port.

7.7.3 The following options were initially considered for extending the port area:

- Development with berths facing the Sandymount area: this alternative was not considered viable for reasons of economics and the potential for negative impacts on internationally designated biodiversity sites. Not only the land required, but the dredging of a new second channel has the potential to result in significant impacts; and
- Development with berths facing the Clontarf area: as above, these alternatives had the potential to have negative impacts on internationally designated biodiversity sites. These sites are so distant from deep water that it was considered untenable to facilitate the Ro-Ro operations. A second channel would again be required, this time joining the existing channel at the mouth of the River Liffey.

7.7.4 Other potential disadvantages of the above options include impacts on amenity, water quality, noise, air quality (for the development facing Sandymount), carbon emissions, waste production, heritage features, landscape and transport (again for the development facing Sandymount).

7.7.5 The current area of the proposed Dublin Gateway, in extending to the east of the port, was considered the most suitable. This option provides the additionally required landside capacity required for the Ro-Ro which is not provided by the two options discussed above. Additionally, as vessels will berth within the channel, dredging requirements in the channel are minimised which reduces the impact from this activity.

7.7.6 There remains the risk of a negative impact on an internationally designated SPA, however measures are identified to confirm the potential significance of these impacts and how they can be addressed and mitigated appropriately. (Refer to the Strategic Natura Impact Statement and also Section 8).

- 7.7.7 Other risks recognised include the potential negative impacts on air quality at the port, on the historic environment and on the landscape, and again, it is considered that any impacts can be mitigated to within acceptable levels.
- 7.7.8 The eastern extension option has been taken forward as the preferred option for the reasons set out above. It has been subject to further detailed assessment and mitigation, as summarised later in this report.

8 Biodiversity – Flora and Fauna

8.1 Topic Definition and SEA Framework

- 8.1.1 Biodiversity can be defined as the total variety of living organisms on earth, including all species of plants, animals and their associated habitats. It supports the vital benefits we get from the natural environment and contributes to our economy, our health and well-being, and it enriches our lives (Defra, 2008).
- 8.1.2 Biodiversity is in decline across the world because of human activity, with 10-30% of animals threatened with extinction.
- 8.1.3 Table 8.1 below sets out the SEA Objectives, indicators and targets for biodiversity which have been utilised to develop the baseline and guide the assessment process.

Table 8.1: SEA Framework for Biodiversity

SEA Objectives	Indicators	Targets
8 – Biodiversity		
Protect and enhance the biodiversity levels in general with particular regard for the nationally and internationally protected sites in vicinity of the port.	Reported conservation status of the designated areas.	Assist in achieving the conservation objectives of the internationally and nationally designated conservation sites.
	Number of species / species population number present within habitats surrounding the port estate.	

- 8.1.4 For the purposes of this SEA, this topic and the SEA Objectives have looked at designated nature conservation sites, protected species and aquatic ecology and fisheries. Additionally, non designated terrestrial flora and fauna have also been reviewed alongside the potential to enhance or create new habitats and wildlife resources. Focusing on these issues then enables the identification of any constraints in relation to biodiversity for proposals within the Masterplan.
- 8.1.5 Full details of the assessments undertaken are presented in Appendix B.

8.2 Port-wide Effects Locally

Key Baseline of Relevance

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
Sandymount Strand / Tolka Estuary SPA (Site Ref. 0004024) and Dolphins Dublin Docks pNHA (Site Ref. 000201)	Very High	Internationally designated for wintering wildfowl. Protected by international and national legislation.	<u>Direct Impacts</u> - loss in area or of features - damage or harm to habitat or other features - disturbance of, or direct harm to, wildlife

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
			<p><u>Indirect Impacts</u></p> <ul style="list-style-type: none"> - erosion of habitat by altering the sea / estuary currents - water pollution risk - recreational pressure (e.g. fishing) - other forms of wildlife disturbance
<p>North Bull Island SPA (00406)</p> <p>North Dublin Bay cSAC/pNHA (000206)</p> <p>South Dublin Bay cSAC/pNHA (000210)</p> <p>Grand Canal pNHA (002104)</p> <p>Royal Canal pNHA (002103)</p>	Very High	<p>SPAs are internationally designated under the EU Birds Directive (79/409/EEC)</p> <p>SACs are internationally designated under the EU Habitats Directive (92/42/EEC)</p> <p>pNHAs are nationally designated; however these sites have strong linkages with the internationally designated sites nearby.</p>	<p><u>Indirect Impacts</u></p> <ul style="list-style-type: none"> - erosion of habitat by altering the sea / estuary currents - water pollution risk - recreational pressure (e.g. fishing) - other forms of wildlife disturbance
<p>Aquatic ecology and fisheries</p>	Very High	<p>Atlantic Salmon is listed under Annex II and V of the Habitats Directive and is therefore afforded conservation protection.</p> <p>Dublin Port is located within the catchments of the Rivers Liffey, Dodder and Tolka. The River Tolka is a Salmonid system with both the Liffey and Dodder representing some of the foremost Salmonid systems in the region.</p> <p>Presence of migratory species such as lamprey, sea trout and eel.</p>	<p><u>Direct Impacts:</u></p> <ul style="list-style-type: none"> -Fisheries habitat loss or creation (foreshore and open channel) from land reclamation and work on berth upgrades. -Construction-based impacts - ground preparatory works, dredging, infilling activities and in-stream works (construction of quay walls etc.) may result in the release and re-suspension of sediment and possible contaminants into the surrounding watercourses. Also, presence of construction fuel and chemicals could be a risk of a pollution incident. - Disturbance of fishery species as a result of noise and vibration associated with the construction and operation of developments <p><u>Indirect Impacts:</u></p> <ul style="list-style-type: none"> -Loss of feeding resources for fishery species

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
Non-designated terrestrial flora and fauna within and also outside of designated sites.	Medium	Non-designated terrestrial flora and fauna from local to regional biodiversity / ecological value.	<u>Direct Impacts</u> - Habitat loss or degradation, or creation of habitat - Disturbance of wildlife through noise, vibration, emissions or recreational pressure (e.g. dog-walkers)
Protected terrestrial flora and fauna present outside of the designated areas		Non designated areas may have protected species present..	<u>Indirect Impacts</u> - Indirect habitat degradation as a result of such changes as increased road traffic / emissions - Improved habitat as a result of landscape planting / amenity areas - Disturbance to habitats and species due to vessel usage in area

8.2.1 The above Rationale for Categorisation column is a brief summary of the information presented in the Characterisation of the Existing Environment section (Section 7.0). This information was used in the development of the impact assessment.

Assessment Before Mitigation

8.2.2 The key risk of negative impacts to biodiversity arises from the potential removal of the tern dolphins which make up the Dolphins Dublin Docks pNHA and the potential loss of part of the Sandymount Strand / Tolka Estuary SPA as a result of the Dublin Gateway port extension. This impact would be a major negative. It is recognised that the Habitats Directive and Regulations clearly require that development proposals do not lead to a net adverse effect on a Natura 2000 site, such as the SPA. The Strategic Natura Impact Statement of the Masterplan provides more detail on this issue. Refer to Appendix C.

8.2.3 There are also various temporary construction impacts which could affect the ecology all around the port, including both designated and non-designated habitats and wildlife. The potential impact is considered to vary from minor negative on non-designated terrestrial habitat, to major negative for other SPAs and SACs of the area.

- 8.2.4 Potential construction effects include:
- loss of habitats and/or foraging areas for local wildlife;
 - potential increased risk of pollution of an estuary and/or the bay through leakage or accidental spillage of fuels or chemicals used, which could lead to immediate harm to qualifying species or more indirect harm through bio-accumulation within the food chain;
 - runoff of loose sediment into a water body, causing various water quality impacts which can impact on habitats and species; and
 - construction-based noise and vibration can lead to species mortality through such effects as abandonment of nests or difficulty foraging.

- 8.2.5 During operation, there could be direct and indirect loss of parts of designated sites, including habitat and feeding resource for qualifying species, mainly as a result of the proposed Dublin Gateway. Increased activity at the port (e.g. ships, road traffic or recreational use / dog-walking) could lead to noise and/or vibration disturbance of species, which can result in species mortality through such effects as abandonment of nests or difficulty foraging.
- 8.2.6 Capital and maintenance dredging could result in disturbance of sediment and possibly disturbance of benthic flora and fauna (as feeding resource for designated species). Similar to the above, greater port activity could lead to increased risk and thus incidence of spills / accidents which cause water pollution, which in turn would affect the health of wildlife populations.

Mitigation Proposed

- 8.2.7 DPC will implement a programme of good construction management practices including, but not limited to, sediment control, suitable storage of hazardous materials, minimising surface water runoff and flow from sites, banded refuelling areas, general housekeeping, exposed soil management and dust control.
- 8.2.8 The potential effects of pollution, disturbance and habitat modification as a result of capital or any increase in maintenance dredging will be mitigated by the development of a Dredging Mitigation Strategy. This document will address the potential effects of an increase in ship movements, sediment re-suspension, contaminated sediments, and potential for changes to the hydrodynamic regime.
- 8.2.9 DPC will commence an audit of flora and fauna of Dublin Port. It is envisaged that this audit may assist in informing the future Appropriate Assessment process for individual developments/projects.
- 8.2.10 DPC has developed a Strategic Natura Impact Statement for the Masterplan which identifies the principles/measures which will be addressed by DPC at a later stage should individual developments/projects be implemented.
- 8.2.11 Proposed relocation of the mooring structures (Dolphins), on which the breeding Tern colonies are located has been incorporated into the Masterplan.
- 8.2.12 Where habitat feeding areas or other useful features of the SPA will be lost, appropriate measures will be required by project-level Natura Impact Statement (which cannot be agreed at this Masterplan level, due to the uncertain nature of which options will be developed in the future). The provision of potential future compensatory / replacement areas must be equivalent in quality or otherwise greater in area than the original lost, and must benefit the *Natura 2000* network in a way which benefits the same populations as would be affected by the lost area.
- 8.2.13 As part of the Strategic Natura Impact Statement requirements, it is expected that the provision of potential future compensatory habitat or feeding areas must be provided and adequately established in advance of the loss, such that no net loss occurs and no net harm comes to the qualifying species. This same principle should be applied to all significant habitat loss identified in the future.
- 8.2.14 Future project studies will consider the phasing of development to minimise the scale of any habitat or wildlife community impacts, such that there is enough time in between developments for habitat to re-establish / mature, where appropriate.
- 8.2.15 With regard to the proposed construction and operational phases of future developments, these activities will take account of aspects such as breeding seasons,

salmonid spawning etc to ensure that operations at sensitive locations are appropriately mitigated to minimise disturbance.

- 8.2.16 Future operational requirements will include the implementation of measures to control and manage relevant alien/invasive species and noxious weeds in accordance with best practice.
- 8.2.17 DPC shall consider working with relevant statutory and non-statutory stakeholders to create an Integrated Environmental Management Plan for the port area and environs. The Flora and Fauna audit will be developed as an element of this plan.
- 8.2.18 DPC shall seek net enhancements on individual projects, using applicable guidance. Consideration shall be given to the incorporation of enhancements such as planting of native tree and shrub species into future landscape design, inclusion of a wider range of habitat creation and enhancement options such as nest boxes and maximising the physical complexity of marine structures to maximise use by specific species i.e. provision of cored holes in quay walls for use by guillemots.
- 8.2.19 DPC will review the requirement for fish surveys in areas where information is not extensive at present with the Inland Fisheries Ireland.

Residual Effect with Mitigation

- 8.2.20 It is expected that with mitigation, the effects on biodiversity, flora and fauna will be **negligible** in the short term. There may be certain trade-offs, however there are specific legal requirements which must be addressed and fulfilled to prevent the deterioration of any internationally designated sites, which make a large proportion of the local ecosystems. This assessment is highly dependent upon the outcomes of project-specific Appropriate Assessments, and the assumed success of the principles / measures set out in the Strategic Natura Impact Statement.
- 8.2.21 In the long term, with the SEA's recommendations to use native species in landscaping and to incorporate habitat enhancements, there could be a net **minor beneficial** effect.

8.3 Port-wide Effects - Regional and Global

- 8.3.1 Biodiversity is an international resource. Therefore, any impact (negative or positive) on the nearby *Natura 2000*-designated sites is considered to be of an international scale. However, even habitats and wildlife that, in policy, are considered to have only a 'local' value fulfil a purpose within the global biosphere. There were international targets to halt biodiversity decline by the year 2010. Specifically, the EU has identified new targets to be achieved by 2020.
- 8.3.2 Therefore, the residual long-term effect of delivering minor beneficial impacts (as assessed in the previous section) could provide significant benefits at an international level, if the Masterplan measures deliver enhancements to the SPA and SAC network of Ireland (even indirectly). If the enhancements benefit more locally significant species, it may still be regionally beneficial to have enhanced the shoreline around the port.
- 8.3.3 Also, beyond the local area, the port has an influence on transport patterns for freight nationally. As the comparative assessment indicates, shipments are expected to increase in size in the future, and thus one shipment may serve more destinations. This trend better matches the transport infrastructure around Dublin, as opposed to any other single location. This is largely due to the existing motorway and rail networks

centred on the city. As a result of this, it may be that the expansion at Dublin Port minimises the amount of road freight transported on local roads elsewhere in Ireland.

- 8.3.4 The effect of the Masterplan may be to assist in minimising congestion, traffic generation and emissions. Therefore, lesser emissions may benefit certain habitats around Ireland.

9 Flood Risk

9.1 Topic Definition and SEA Framework

- 9.1.1 This section covers issues associated with potential flood risk and coastal erosion associated with the Masterplan proposals.
- 9.1.2 Flooding by water rising beyond its usual confines and overflowing onto land pose the most widely distributed natural risk today (UNESCO), with flood risk increasing due to global climate change.
- 9.1.3 Table 9.1 below sets out the SEA Objectives, indicators and targets for flood risk and coastal erosion which have been utilised to develop the baseline and guide the assessment process.

Table 9.1: SEA Framework for Flood Risk and Coastal Erosion

SEA Objectives	Indicators	Targets
9 – Flood Risk		
To enhance the management of flood risk and coastal erosion, whilst taking account of other flood protection developments in the vicinity of the port and also adherence to the “Planning System and Flood Risk Management Guidelines for Planning Authorities”, DOEHLG, 2009.	The number of areas reporting flooding incidents.	Present no additional flood risk to the port estate and its environs. Contribute to the management of flood risk within the port estate and in the vicinity.

- 9.1.4 Full details of the assessments undertaken are presented in Appendix B.

9.2 Port-wide Effects

Key Baseline of Relevance

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
Dublin Port Estate	Medium	Location of the port within 'Zone A' flood zone (OPW, 2009) Indicating the “probability of flooding from rivers and the sea is highest”. However, no historical flood events within the Port Estate	Need to account for potentially placing new facilities or greater human activity within flood or coastal erosion risk areas at the Dublin Port Estate

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
		recorded.	
Clontarf and Sandymount Coastal Shoreline	Medium	Evidence of historical flooding in Clontarf and Sandymount residential areas from intensive rainfall and tidal flood events	Need to consider whether changes at the port could have indirect effects on coastal erosion elsewhere

- 9.2.1 The above Rationale for Categorisation column is a brief summary of the information presented in the Characterisation of the Existing Environment section (Section 7.0). This information was used in the development of the impact assessment.

Assessment Before Mitigation

Dublin Port Estate

- 9.2.2 Before mitigation, it is anticipated that there would be **minor adverse** short-term effects relating to construction activities associated with the Masterplan developments.
- 9.2.3 Construction works may temporarily alter the ground levels during excavation or reclamation periods within the Port Estate, potentially making some areas more susceptible to flooding.
- 9.2.4 The presence of construction compounds and plant, should a flood event occur may result in damage to the construction site/compounds, with resultant costs in terms of recovery from the flood (including potential environmental damage).
- 9.2.5 Given the timescale of implementation of the overall Masterplan, there is also a risk that sea level rise due to climate change will increase the risk of flooding in the Port Estate. It is noted that the Office of Public Works (OPW) is currently preparing Flood Risk Management Plans (FRMPs) which encompass Dublin and the port area. Overall, it is considered that there would be a negligible effect in the medium to long term.

Clontarf and Sandymount Coastal Shoreline

- 9.2.6 It is anticipated that in the medium to long term there is the potential for **minor adverse** effects on the shorelines of Clontarf and Sandymount. This is due to the potential for hydrodynamic changes as a result of the proposed reclamation on the eastern boundary, which may change shoreline erosion patterns and rates. However, hydrodynamic modelling undertaken for the previous Dublin Gateway application showed that the impact of the development and associated dredging had a very small effect on water levels in the Liffey. It is considered however, that this would require further investigation at future individual planning application level.

Mitigation Proposed

- 9.2.7 A detailed Flood Risk Assessment has not been carried out at this stage for the purposes of the Masterplan. However, individual projects will be subject to a Flood Risk Assessment at the planning application stage. These assessments will be developed in accordance with The Planning System and Flood Risk Management Guidelines for Planning Authorities November 2009, DoEHLG.
- 9.2.8 During the delivery of FRA's for individual projects, with particular regard to the proposed Dublin Gateway project (in the event of any significant deviations in design),

consideration shall be given to the flood protection schemes initiated by Dublin City Council in Clontarf, Sandymount and Dollymount and Flood Risk Management Plans (FRMP) being developed for the Dublin and surrounding region.

- 9.2.9 The sustainable urban drainage principles outlined in the Greater Dublin Strategic Drainage Study will be implemented as relevant in future projects or developments.

Residual Effect with Mitigation

- 9.2.10 Climate change is expected to increase the frequency and severity of flood events regardless of development. At a strategic level, any negative impacts arising from construction/development of the Masterplan would be expected to be **negligible** provided consideration is given to flood risk management and coastal erosion as a result of potential hydrometric changes of reclamation, in the delivery of individual projects or developments.

9.3 Port-wide Effects - Regional and Global

- 9.3.1 The effects of the impacts described in the section above would not be felt at a regional and/or national scale. The significance of the wider impact on a global scale is assessed to be none and therefore no further mitigation is recommended.

10 Water – Surface Water

10.1 Topic Definition and SEA Framework

- 10.1.1 This section covers issues relating to the potential surface water effects associated with the Masterplan proposals.
- 10.1.2 Surface water refers to all bodies of water on the Earth's surface, naturally open to the atmosphere which can include lakes, rivers, seas and oceans. Within this section surface water primarily referred to, is the estuarine and coastal water bodies that surround Dublin Port.
- 10.1.3 Table 10.1 below sets out the SEA Objectives, indicators and targets for surface water which have been utilised to develop the baseline and guide the assessment process.

Table 10.1: SEA Framework for Surface Water

SEA Objectives	Indicators	Targets
10 – Water – Surface Water		
To improve water quality of the surface and ground water bodies and support the achievement of the WFD objectives.	Number of designated waterbodies which are reported to be at risk of not achieving the WFD objectives. Changes in the EPA Q Values/Status of waterbodies surrounding the port estate.	Contribute to achieving the WFD objectives detailed in the programme of measures in the ERBD Management Plan.

- 10.1.4 Full details of the assessments undertaken are presented in Appendix B.

10.2 Port-wide Effects – Locally

Key Baseline of Relevance

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
Liffey Lower Estuary (Estuarine Water Body)	Very High	Characterised as Heavily Modified Water Bodies (HMWB) in the Eastern River Basin Management Plan (ERBMP). HMWB are water bodies that have been modified by operations such as for navigation, water supply and power generation. Designated Areas within the water body:	Direct Impacts -Extension of the modified riverbank (Liffey) due to the proposed Ro-Ro and Common Usage area development and reclamation -Capital and Maintenance Dredging increasing suspended solids

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
		<ul style="list-style-type: none"> • Liffey Estuary (Nutrient Sensitive Area) • North Dublin Bay (NHA, SAC) • Sandymount Strand/Tolka Estuary (SPA) • North Bull Island (SPA) 	<p>Indirect Impacts</p> <p>-Deterioration of water quality during construction and operation of all developments of the Masterplan.</p>
Tolka Estuary (Estuarine Water Body)	Very High	<p>Characterised as Heavily Modified Water Bodies (HMWB) in the Eastern River Basin Management Plan (ERBMP). HMWB are water bodies that have been modified by operations such as for navigation, water supply and power generation.</p> <p>Designated Areas within the water body:</p> <ul style="list-style-type: none"> • North Dublin Bay (NHA, SAC) • Sandymount Strand/Tolka Estuary (SPA) • North Bull Island (SPA) 	<p>Direct Impacts</p> <p>-Loss of surface water body area due to proposed Ro-Ro development and reclamation</p> <p>Indirect Impacts</p> <p>-Deterioration of water quality during construction and operation of all developments of the Masterplan.</p>
Dublin Bay (Coastal Water body)	Very High	<p>Characterised as Heavily Modified Water Bodies (HMWB) in the Eastern River Basin Management Plan (ERBMP). HMWB are water bodies that have been modified by operations such as for navigation, water supply and power generation.</p> <p>Designated Areas within the water body:</p> <ul style="list-style-type: none"> • North Dublin Bay (NHA, SAC) • South Dublin Bay (NHA, SAC) • North Bull Island (SPA) • Sandymount Strand/Tolka Estuary (SPA) • Sandymount Strand (Bathing Waters) 	<p>Indirect Impacts</p> <p>-Deterioration of water quality during construction and operation of all developments of the Masterplan.</p>

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
		<ul style="list-style-type: none"> • Merrion Strand (Bathing Waters) • Seapoint (Bathing Waters) 	

10.2.1 The above Rationale for Categorisation column is a brief summary of the information presented in the Characterisation of the Existing Environment section (Section 7.0). This information was used in the development of the impact assessment.

Assessment Before Mitigation

10.2.2 Before mitigation, it is anticipated that there would be **major adverse short-term impacts** relating to construction activities. Construction activities which would be proposed by the Masterplan Options such as dredging, berth deepening, quay wall construction, reclamation, soil remediation and stabilisation have the potential to impact on the surface water environment through:

- disturbance of Sediment (increased suspended solids or mobilization of contaminants); and
- accidental release of hydrocarbons/chemicals/silt into the water body.

10.2.3 Dredging (Capital and Maintenance) activities may result in localised sediment plumes arising from the dredging activities will introduce sediments into the surrounding marine water column. These sediment plumes could result in a variety of effects to the marine water quality in the vicinity of these dredging activities namely:

- increased turbidity - this increased turbidity results in a decrease in the depth that light is able to penetrate the water column;
- chemical changes occurring if the sediment plume can change the physiological conditions by reducing dissolved oxygen (DO) levels in the water; and
- the introduction of low levels of contaminated sediment into the marine environment, particularly relevant during dredging activities within areas with noted historical contamination.

10.2.4 Before mitigation, it is anticipated that there would be **major adverse medium to long-term impacts** relating to deterioration of surface water body water quality. The potential growth in operational activities may increase the likelihood of accidental pollution incidents impacting the Lower Liffey Estuary such as:

- spills from loading/unloading vessels such as oil products, molasses, bitumen, oil, chemicals; and
- release of contaminants from site activities to the DPC surface water drainage system.

Mitigation Proposed

10.2.5 DPC will continue to develop within the requirements of the Eastern River Basin District Management Plan programme of measures, and these measures will inform the future development stages of the Masterplan Options.

- 10.2.6 Employment of good construction management practices including, but not limited to: pollution prevention and control, sediment management, suitable storage of hazardous materials, minimising surface water runoff and flow from sites, bunded refuelling areas, general housekeeping, exposed soil management and dust control.
- 10.2.7 Implementation of management practices for the refuelling and maintenance operations within the port, to minimise the potential for spillages/accidents.
- 10.2.8 The potential effects of pollution, disturbance as a result of capital dredging, or any increase in maintenance dredging, will be mitigated by the development of a Dredging Mitigation Strategy. This document will address the potential effects of an increase in ship movements, sediment re-suspension, contaminated sediments, and potential for changes to the hydrodynamic regime.
- 10.2.9 The requirement for and extent of surface water quality and also discharge monitoring will be commensurate with the likely risk of adverse impact from a specific development on surface water bodies. Monitoring requirements will be reviewed and implemented in consultation with the relevant authorities.
- 10.2.10 Wastewater discharges from future developments, including storm water discharges which fall under the Waste Water Discharge (Authorisation) Regulations will be licensed or certified.
- 10.2.11 DPC shall consider working with relevant statutory and non-statutory stakeholders to create an Integrated Environmental Management Plan for the port area and environs which shall give appropriate consideration to ensure the on going protection of water quality (with particular regard to the Natura 2000 habitats) and associated species including fisheries.

Residual Effect with Mitigation

- 10.2.12 Although increased area and activity at the port will increase the amount of potentially polluting materials handled at the port, this increase will be synergistic with existing pollution prevention and control measures.
- 10.2.13 The technique currently employed in maintenance dredging releases a minimum of sediment and the disposal mechanism will ensure that 97% of the material is settled on the seabed within sixteen minutes of the release. The tidal regime within Dublin Bay leads to a north to south current being generated therefore any remaining suspended sediment in the vicinity of the current Burford Bank dump site will be transported away from the SACs. Therefore, there are unlikely to be any significant effects on any of the qualifying features of the SACs given the dynamic environment of the Bay, the duration and position of the operations in relation to the Sites the quantities of potential sediment released and the types of intertidal biota potentially affected which have developed to withstand the Bay's environment.
- 10.2.14 Additionally, the footprint and dredging requirements of the currently proposed reclamation on the eastern boundary is very much reduced from previous proposals in this location as it is not proposed to develop Ro-Ro berths on the eastern face and therefore the dredging requirements are much reduced.
- 10.2.15 The above mitigation (Sections 10.2.5-10.2.9), if implemented successfully is expected to remove significant risks to the surface water environment. At a strategic level, any negative impacts would be expected to be **negligible** provided further project specific design and construction planning considerations are implemented early in the project development stage.

10.3 Port-wide Effects – Regional and Global

- 10.3.1 The good and sustainable management of water is an international priority for the European Union, however its key importance could be argued to lie at the national level.
- 10.3.2 It is therefore imperative that the development options put forward by the Masterplan maintain stringent controls on potential sources of pollution, including during proposed dredging and reclamation works.

11 Water – Groundwater

11.1 Topic Definition and SEA Framework

- 11.1.1 This section covers issues associated with potential groundwater effects associated with the Masterplan proposals.
- 11.1.2 Groundwater is all water which occurs below the land surface, including that in the saturated and unsaturated zones. The contamination of groundwater and its quality are of increasing concern.
- 11.1.3 Table 11.1 below sets out the SEA Objectives, indicators and targets for groundwater which have been utilised to develop the baseline and guide the assessment process.

Table 11.1: SEA Framework for Groundwater

SEA Objectives	Indicators	Targets
11 – Water – Groundwater		
To improve water quality of the surface and ground water bodies and support the achievement of the WFD objectives.	Number of designated waterbodies which are reported to be at risk of not achieving the WFD objectives. Changes in the EPA Q Values/Status of waterbodies surrounding the port estate.	Contribute to achieving the WFD objectives detailed in the programme of measures in the ERBD Management Plan.

- 11.1.4 Full details of the assessments undertaken are presented in Appendix B.

11.2 Port-wide Effects Locally

Key Baseline of Relevance

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
Dublin Urban Groundwater Body	Medium	<p>The Eastern River Basin District Management Plan currently classifies this groundwater body as being of 'good' status.</p> <p>The groundwater body is currently characterized as being 'not at risk' under the Water Framework Directive</p> <p>Groundwater within areas of the Port Estate is known to be impacted by historical industrial activities.</p>	<p>Direct Impacts</p> <p>-Contamination of groundwater body during construction of developments associated with the Masterplan</p> <p>-Contamination of groundwater due to operational pollutants being discharged to soils and groundwater within and beneath the Port Estate</p>

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
			Indirect Impacts -Failure to maintain Water Framework Directive 'Good' and 'Not at Risk' status through the contamination of groundwater (as per direct impacts)

11.2.1 The above Rationale for Categorisation column is a brief summary of the information presented in the Characterisation of the Existing Environment section (Section 7.0). This information was used in the development of the impact assessment.

Assessment Before Mitigation

11.2.2 Before mitigation, it is anticipated that there would be **minor adverse short-term** effects relating to construction activities. The contamination of the Dublin Urban Groundwater body through leakage or accidental spillage of hydrocarbons (diesel, hydraulic oil, lubricants etc), chemicals, and concrete on site during construction activities. The contamination of groundwater may also occur through cut and fill, piling and excavations causing mobilisation of soil contaminants into the groundwater.

11.2.3 In the event of inappropriate practices being implemented during site operations this could lead to **minor adverse medium- to long-term** effects as a result of:

- Leakage from bulk storage of oils/fuels/chemicals and tank farm operations.
- Deterioration of WFD 'Good' status.
- Contamination of groundwater body through leakage or accidental spillage of operational pollutants such as hydrocarbons (diesel, petrol, fuel oil, hydraulic oil, green diesel) and chemicals.

Mitigation Proposed

11.2.4 Specific DPC environmental surveys have determined that the groundwater within areas of the port estate has been impacted by historical industrial activities. The presence of hydrocarbon films and free phase product has been recorded in defined areas of the port estate. An integrated approach is currently being implemented within the estate with regard to managing and monitoring the removal of free phase product from the groundwater within these areas. It is envisaged that this initiative will continue to be implemented and will assist in informing the future Masterplan options.

11.2.5 It will be a requirement to carry out good construction and operational site management practices which will include, but not be limited to: pollution prevention and control, sediment management, suitable storage of hazardous materials, minimising surface water runoff and flow from sites, bunded refuelling areas, general housekeeping, exposed soil management and dust control. These practices will be assessed at a project specific level during development of individual Masterplan developments and with all future DPC activities being undertaken in accordance with the requirements of the company's accredited EMS.

- 11.2.6 Implementation of management practices for the refuelling and maintenance operations within the port, to minimise the potential for spillages/accidents.
- 11.2.7 The identification of areas and sites historically contaminated with free phase product from records held in the DPC GIS system prior to construction works, to prevent further mobilisation and contamination.
- 11.2.8 Consideration is to be given to an Integrated Environmental Management Plan for the port area.

Residual Effect with Mitigation

- 11.2.9 The above mitigation, if implemented successfully is expected to remove significant risks to the groundwater environment, and the Dublin Urban Groundwater Body. At a strategic level, any negative impacts would be expected to be **negligible** provided further project specific design and construction planning considerations are implemented early in the project development stage.

11.3 Port-wide Effects - Regional and Global

- 11.3.1 As stated in Section 10, the good and sustainable management of water is an international priority for the European Union, however its key importance could be argued to lie at the national level.
- 11.3.2 It is therefore imperative that the development options put forward by the Masterplan maintain stringent controls on potential sources of pollution, including during the movement and potential treatment of any contaminated soils on-site. Any potential pathways between contaminated soils or other pollutants and the groundwater must be well understood prior to the onset of work.

12 Noise and Vibration

12.1 Topic Definition and SEA Framework

- 12.1.1 This section covers issues associated with potential noise and vibration effects associated with the Masterplan proposals.
- 12.1.2 Noise can be thought of as general background sounds or can be unwanted sound that is loud and causes disturbance. Vibration is a periodic quivering or trembling motion or movement in opposite directions. Noise and vibration discussed within the SEA generally relate to those arising from an activity or operations, and felt by a receptor.
- 12.1.3 Table 12.1 below sets out the SEA Objectives, indicators and targets for noise and vibration which have been utilised to develop the baseline and guide the assessment process.

Table 12.1: SEA Framework for Noise and Vibration

SEA Objectives	Indicators	Targets
12 – Noise and Vibration		
To improve the management of noise impacts and avoid any new significant noise impacts on people or the environment.	Number of complaints relating to noise emissions from port activities and operations.	No significant increase in the impacts resulting from port generated noise emissions on sensitive receptors.

- 12.1.4 Full details of the assessments undertaken are presented in Appendix B.

12.2 Port-wide Effects

Key Baseline of Relevance

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
Residents in the immediate vicinity such as Coastguard Cottages (Pigeon House Road) and Clontarf Road and also sensitive receptors in the near vicinity.	High	<p>Residents of the Coastguard Cottages have issued proceedings alleging noise related nuisance issues.</p> <p>Traffic on Sean Moore Road and the R131 between Sean Moore Road and the East Link Toll Booth is the dominant noise source in the area.</p> <p>Currently, noise sources within Dublin Port include but are not limited to Ro-Ro and Lo-Lo terminals</p>	Certain projects which enable greater freight and passenger throughput at the port can be seen to facilitate a potential increase in the duration of noisy activities and the amount of traffic noise generated. However, it is noted that DPC tenants are responsible for undertaking their site operations and activities in accordance with any planning, licensing and

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
		<p>and berths, container storage terminals, road traffic and various industrial/ commercial premises.</p> <p>Current Daytime Noise level range approximately 60-70dBA in the immediate vicinity of Port (Dublin Agglomeration Action Plan Relating to the Assessment and Management of Environmental Noise,2008)</p> <p>Current Nighttime noise range approximately 50-60dBA in the immediate vicinity of the port (Dublin Agglomeration Action Plan Relating to the Assessment and Management of Environmental Noise,2008)</p> <p>Predictive models generated as part of the Dublin Agglomeration Action Plan show that road traffic alone would generate noise at or beyond the above levels, and they are designated by Dublin City Council as being 'undesirable'. They are also above noise limits established by the combination of the IPPC regulatory framework and EPA guidelines.</p>	<p>legal requirements.</p> <p>The introduction of the Dublin Port Tunnel has relieved congestion in the city and diverted traffic away from residential areas.</p> <p>Infill and expansion of the port surface area will result in the introduction of new noise sources to the environment.</p>
<p>Residents in the near vicinity of the port, and other sensitive receptors - Pigeon House Road, Schools in East Wall. Clontarf and Sandymount, Users of Ringsend Park, Irishtown Nature Park, Sean Moore Park</p>	<p>Medium</p>	<p>The immediate noise environment of Dublin Port is predominantly industrial in nature at present.</p> <p>Traffic within Dublin City (including Dublin Port) is a significant noise source.</p> <p>Currently, noise sources within Dublin Port include but are not limited to Ro-Ro and Lo-Lo terminals and berths, container storage terminals, road traffic and various</p>	<p>Certain projects which enable greater freight and passenger throughput at the port can be seen to facilitate a potential increase in the duration of noisy activities and the amount of traffic noise generated. However, it is noted that DPC tenants are responsible for undertaking their site operations and activities in accordance with any planning, licensing and</p>

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
		industrial/ commercial premises.	<p>legal requirements.</p> <p>The introduction of the Dublin Port Tunnel has relieved congestion in the city and diverted traffic away from residential areas.</p> <p>Infill and expansion of the port surface area will result in the introduction of new noise sources to the environment.</p>
Residential Receptors of Ringsend, Sandymount, Clontarf and East Wall - General	Medium	<p>The immediate noise environment of Dublin Port is predominantly Industrial in nature at present.</p> <p>Traffic within Dublin City (including Dublin Port) is a significant noise source.</p> <p>Currently, noise sources within Dublin Port include but are not limited to Ro-Ro and Lo-Lo terminals and berths, container storage terminals, road traffic and various industrial/ commercial premises.</p>	<p>Certain projects which enable greater freight and passenger throughput at the port can be seen to facilitate a potential increase in the duration of noisy activities and the amount of traffic noise generated. However, it is noted that DPC tenants are responsible for undertaking their site operations and activities in accordance with any planning, licensing and legal requirements.</p> <p>The introduction of the Dublin Port Tunnel has relieved congestion in the city and diverted traffic away from residential areas.</p> <p>Infill and expansion of the port surface area will result in the introduction of new noise sources to the environment.</p>

12.2.1 The above Rationale for Categorisation column is a brief summary of the information presented in the Characterisation of the Existing Environment section (Section 7.0). This information was used in the development of the impact assessment.

Assessment before Mitigation

12.2.2 Most construction activities would not be in the immediate vicinity of receptors, however construction activities associated with the Masterplan developments may include dredging, berth deepening, quay wall construction, reclamation, and piling. These activities may increase noise levels in the vicinity of the construction area, and somewhat beyond depending upon the local noise environment and atmospheric conditions.

- 12.2.3 Traffic noise emissions associated with construction plant, deliveries of materials and construction workers movements to and from site may increase noise levels in the vicinity of the development and roads leading in and out of the area. As identified above, the introduction of the Dublin Port Tunnel has resulted in HGV traffic being diverted away from the city centre and residential areas.
- 12.2.4 Therefore before mitigation it is anticipated that there would be a **moderate adverse** impact for the residents of Coastguard Cottages (Pigeon House Road) and Clontarf Road. There may be a **slight adverse** impact on other sensitive receptors including - Pigeon House Road, schools in East Wall, Clontarf and Sandymount areas and users of Ringsend Park, Irishtown Nature Park and Sean Moore Park. There will be a **negligible** impact on the wider areas of Sandymount, Clontarf, Ringsend and Eastwall.
- 12.2.5 Operational nighttime noise is more likely to be a relevant issue than daytime noise. It needs to be considered whether accommodating larger ships resulting from the development of future Masterplan options could allow for an increasing duration of Ro-Ro/Lo-Lo activity at night.
- 12.2.6 Therefore before mitigation, in the medium to long term, there is varying potential for increasing noise impacts at these receptors as a result of the Masterplan. Given the proximity and current impact from pre-existing noise, any increase in noise from traffic or additional throughput at the port may lead to a **moderate adverse** impact for the residents of Coastguard Cottages (Pigeon House Road) and Clontarf Road. There may be a **slight adverse** impact on other sensitive receptors - Pigeon House Road, schools in the East Wall, Clontarf and Sandymount areas and users of Ringsend Park, Irishtown Nature Park and Sean Moore Park. There will be a **negligible** impact on the wider areas of Sandymount, Clontarf, Ringsend and Eastwall. This will require further investigation and mitigation at the project level - see below recommendations.

Mitigation Proposed

- 12.2.7 DPC will continue to liaise with residents with regards to any future complaints regarding night time noise emissions. Combined with this, DPC should consider the development of an Integrated Environmental Management Plan for the port area which will address the aspect of noise emissions, and which will specifically consider and address the implications of increased throughput and how these increases influence operations on individual sites.
- 12.2.8 Individual planning applications and associated environmental assessments for future port developments should consider the cumulative increase in noise generated in the vicinity of receptors, including the influence of traffic.
- 12.2.9 As part of the Integrated Environmental Management Plan, DPC will review these assessments to ensure future projects are being managed in an appropriate way.
- 12.2.10 Also as part of the above, the need for construction mitigation should be considered, including limiting working hours and temporary noise barriers, as appropriate to the activity and potential receptors.
- 12.2.11 The DPC ISO14001 EMS facilitates the recording and management of external communications such as complaints regarding noise emissions. Complaints issued to DPC are logged and communicated to relevant DPC personnel and/or tenants by the DPC Public Relations Department.

Residual Effect with Mitigation

- 12.2.12 With construction mitigation in place, it is envisaged that any short-term negative effects would be temporary in nature and are expected to have a **negligible** residual effect overall.
- 12.2.13 In the medium to long term, it is considered that with the increase of throughput and with the potential for the development of projects (associated with the Masterplan) directly in proximity of receptors and also with the introduction of additional noise sources, this will result in a **minor adverse** residual impact for the receptors immediately adjacent to Dublin Port.
- 12.2.14 For those Masterplan options which are located a distance from receptors immediately adjacent to Dublin Port, it is envisaged that with the mitigation outlined above and the current baseline, in the medium to long term, the additional noise from these projects would be **negligible** relative to other background noise.
- 12.2.15 For the general areas of Clontarf, Ringsend, East Wall and Ringsend, it is envisaged that the mitigation identified above, the current baseline conditions and the distance of the receptors from Dublin Port, in the medium to long term any additional noise resulting from the Masterplan would be **negligible** relative to other background noise.

12.3 Port-wide Effects - Regional and Global

- 12.3.1 The effects of the impacts described in the section above would not be felt at a regional and/or national scale. Any regional or national traffic increases from increased freight and passenger throughput (and thus contributing to the wider traffic noise around motorways or other roads used) would be expected to occur regardless of expansion at Dublin Port, and thus regardless of the Masterplan. The significance of the wider impact on a global scale is assessed to be none and therefore no further mitigation is recommended.

13 Air Quality and Climate

13.1 Topic Definition and SEA Framework

- 13.1.1 This section covers issues associated with potential Air quality and climate effects associated with the Masterplan proposals.
- 13.1.2 Air quality is a measurement of the pollutants within the air and can be used as a measurement of the status of the atmosphere.
- 13.1.3 Table 13.1 below sets out the SEA Objectives, indicators and targets for air quality and climate which have been utilised to develop the baseline and guide the assessment process.

Table 13.1: SEA Framework for Air Quality and Climate

SEA Objectives	Indicators	Targets
13 – Air Quality and Climate		
To avoid any significant air quality impacts on people or the environment	Increases in the number of non-compliances with legislated Air Quality Standards.	Contribute to achieving compliance with legislated Air Quality Standards.
To improve the carbon performance of DPC activities and operations within the port.	Increases in the carbon footprint relating to DPC activities and operations.	To contribute to the reduction of greenhouse gases (carbon emissions) in Ireland.

- 13.1.4 Full details of the assessments undertaken are presented in Appendix B.

13.2 Port-wide Effects

- 13.2.1 The following abbreviations / symbols are used in the table below: nitrogen dioxide (NO₂), sulphur dioxide (SO₂) and Particulate Matter (PM). For 'PM', the subscript (e.g. 2.5 or 10) refers to the size of the particle.

Key Baseline of Relevance

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
Residential /Sensitive Receptors in the immediate vicinity (Coastguard Cottages (Pigeon House Road) and Clontarf Road)	Medium	The main sources of air pollutant emissions to the atmosphere at Dublin Port are road and sea traffic, and industrial processes and other port related businesses being operated within the port estate.	Some Masterplan developments which will enable greater traffic throughput (vehicles and vessels) and greater freight handling throughput due to increased operational efficiencies may be seen

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
		<p>The area immediately surrounding Dublin Port is predominantly industrial in nature. However, sensitive receptors are located in close radius to the port and in proximity to some roads outside the port such as Pigeon House Road and Clontarf Road.</p> <p>Air quality in Dublin is regarded as being good (EPA).</p> <p>Concentrations of PM_{2.5} and PM₁₀ and SO₂ in Dublin are reported below the maximum daily and annual legislated limit values.</p> <p>Concentrations of NO₂ in Dublin in 2009 were below the annual limit value, with the exception of one city centre location. It is noted that the NO₂ concentration in Dublin is close to the legislative limit values as a result of traffic levels in the city.</p>	<p>to facilitate a potential increase in air emissions of Nitrogen Dioxide, Sulphur Dioxide and Particulate Matter in the port and its environs.</p> <p>Nuisance dust emissions from construction activities and bulk handling activities in the vicinity of the sites.</p>
<p>Residential /Sensitive Receptors of Ringsend, Sandymount, Clontarf and East Wall - General</p>	<p>Low</p>	<p>The main sources of air pollutant emissions to the atmosphere at Dublin Port are road and sea traffic, and industrial processes and other port related businesses being operated within the port estate.</p> <p>The area immediately surrounding Dublin Port is predominantly industrial in nature. However, sensitive receptors are located in a radius to the port and in proximity to some roads outside the port in the residential areas of Ringsend, Sandymount, Clontarf and East Wall</p> <p>Air quality in Dublin is regarded as being good (EPA).</p> <p>Concentrations of SO₂, PM_{2.5} and PM₁₀ and SO₂ in</p>	<p>Some Masterplan developments which will enable greater traffic throughput (vehicles and vessels) and greater freight handling throughput due to increased operational efficiencies may be seen to facilitate a potential increase in air emissions of Nitrogen Dioxide, Sulphur Dioxide and Particulate Matter in the port and its environs.</p> <p>Nuisance dust emissions from construction activities and bulk handling activities in the vicinity of the sites.</p>

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
		<p>Dublin are reported below the maximum daily and annual legislated limit values.</p> <p>Concentrations of NO₂ in Dublin in 2009 were below the annual limit value, with the exception of one city centre location. It is noted that the NO₂ concentration in Dublin is close to the legislative limit values as a result of traffic levels in the city.</p>	

13.2.2 The above Rationale for Categorisation column is a brief summary of the information presented in the Characterisation of the Existing Environment section (Section 7). This information was used in the development of the impact assessment.

Assessment Before Mitigation

13.2.3 Additional air emissions of NO₂, SO₂ and PM could result from increased construction vehicle movements i.e. construction workers movements to and from site, and construction materials deliveries.

13.2.4 Construction activities associated with the Masterplan developments may include stockpiling, excavation, quay wall construction, reclamation, and piling. These activities may give rise to nuisance dust emissions in the vicinity of the construction area.

13.2.5 Future development and the increase in throughput resulting from greater operational efficiencies may give rise to an increase in air emissions of NO₂, SO₂ and PM due to:

- Increased throughput of Lo-Lo may give rise to additional air emissions from container handling and transport plant;
- Increased throughput of Ro-Ro may give rise to additional air emissions from vehicles movements; and
- Increased throughput of bulk handling activities may give rise to nuisance dust emissions.

13.2.6 Therefore, before mitigation it is anticipated that there would be a minor adverse impact for receptors in the immediate and surrounding vicinity.

Mitigation Proposed

13.2.7 Dust suppression measures shall be employed during construction such as, but not limited to:

- Any stockpiles of dusty materials damped down using water sprays during dry weather;
- Access to the site will be from a single location. Roads shall be kept free of dust and cleaned as far as practicable;

- Routes will be regularly damped down using water bowsers during periods of dry weather as necessary;
 - Appropriate speed limits will be established as necessary and enforced over all unmade surfaces; and
 - Wheel washing facilities will be installed as necessary and heavy vehicles leaving the site will be required to use the installations as appropriate.
- 13.2.8 The development of the Masterplan options presents the opportunity to increase the levels of rail transport in the transportation and delivery of freight to and from the port and also in the introduction and usage of container handling equipment which is electrically powered.
- 13.2.9 Air quality impact assessments shall be made during the future planning and development stages of the Masterplan Options. The local air quality measurements of NO₂ and SO₂ undertaken by DPC within the Port Estate together with air quality data from publicly available reports such as the EPA reports, will be used to assist in determining the air quality conditions within Dublin Port.
- 13.2.10 Traffic growth and levels of traffic resulting from the Masterplan must be managed effectively.

Residual Effect with Mitigation

- 13.2.11 Any negative impacts with regard to nuisance dust from construction activities would be short-term and localised in nature, and are expected to be **negligible** due to the industrial nature of the port and the relative distance to sensitive receptors.
- 13.2.12 Levels of Sulphur Dioxide have improved significantly since the 1990s, and particulate matter levels have been decreasing in the Dublin area since 2003. It is considered that this trend will continue, or as a minimum, remain static in future years. In terms of NO₂, the pollutant concentrations in zones across Ireland have been identified as being predominantly static since approximately 2002. However, the EPA have identified that some monitoring stations in Dublin are being increasingly impacted by traffic levels. The EPA identifies that the continued increase in NO₂ emissions in Dublin may lead to future breaches in the legislative limit. This will be taken into consideration for future Masterplan developments. However with measures such as increased rail transport and the move to options such as electrically powered container handling equipment, overall, it is considered that the effects of the Masterplan will be **negligible** with respect to air quality.
- 13.2.13 Overall it is anticipated that in the medium to long term, the effects of the Masterplan will be **negligible** given the current and future reported levels and trends.

13.3 Port-wide Effects - Regional and Global

- 13.3.1 The effects of the impacts described in the section above would not be felt at a regional and/or national scale. Any regional or national traffic increases from increased freight and passenger throughput (and thus contributing to total vehicle emissions around motorways or other roads used) would be expected to occur regardless of expansion at Dublin Port, and thus regardless of the Masterplan. The significance of the wider impact on a global scale is assessed to be none and therefore no further mitigation is recommended.

14 Cultural Heritage – Archaeological and Architectural Heritage

14.1 Topic Definition and SEA Framework

- 14.1.1 The Council of Europe, in the Framework Convention on the Value of Cultural Heritage for Society ('Faro' 2005) has defined Cultural Heritage as:

'a group of resources inherited from the past which people identify, independently of ownership, as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions. It includes all aspects of the environment resulting from the interaction between people and places through time.'

- 14.1.2 For the purposes of this assessment cultural heritage has been taken to comprise archaeological and architectural heritage.

- 14.1.3 In its 'Framework and Principles for the Protection of the Archaeological Heritage' (1999), the Department of Arts, Heritage, Gaeltacht and the Islands defined archaeology and its importance in the following terms:

'Archaeology is the study of past societies through the material remains left by those societies and the evidence of their environment. The archaeological heritage consists of such material remains (whether in the form of sites and monuments or artefacts in the sense of moveable objects) and environmental evidence.'

- 14.1.4 The Architectural Heritage (National Inventory) and Historic Monuments Act (1999) defines architectural heritage to mean all:

'(a) structures and buildings together with their settings and attendant grounds, fixtures and fittings,

(b) groups of such structures and buildings, and

(c) sites,

which are of architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest' (Architectural Heritage (National Inventory) And Historic Monuments (Miscellaneous Provisions) Act, 1999, S.1).

- 14.1.5 Table 14.1 below sets out the SEA Objectives, indicators and targets for Cultural Heritage which have been utilised to develop the baseline and guide the assessment process.

Table 14.1: SEA Framework for Landscape

SEA Objectives	Indicators	Targets
14 – Cultural Heritage – Archaeology and architectural heritage		
To enhance the conservation of archaeological/architectural heritage, and improve our understanding of this heritage, with particular regards to local maritime and industrial heritage	Increase in the risk of damage to identified archaeological/architectural heritages sites within the port.	Enhance the physical context of the identified archaeological/architectural heritages sites within the port

- 14.1.6 For the purposes of this SEA, potential impacts on identified Archaeological Heritage and Architectural Heritage sites that may result from development proposals in the Masterplan have been assessed and measures to mitigate these effects have been recommended. Based on these measures, residual effects are then assessed.
- 14.1.7 All archaeological monuments (whether above or below ground or water) are protected under the National Monuments Act 1930 – 2004. The definition of a monument used in Section 2 of the Act includes in effect all man-made structures (or parts of structures) of whatever form or date except buildings habitually used for ecclesiastical purposes (Minister for Arts, Heritage, Gaeltacht and the Islands 1999, 36).
- 14.1.8 In addition Section 23 of the National Monuments Act 1930 also requires that a person finding an archaeological object must not remove it or otherwise interfere with it unless they have reasonable cause to believe that it was necessary to remove it to preserve it or keep it safe. It is also required that the finder of such objects reports them to the Director of the National Museum of Ireland within 96 hours. Section 2(1) of the 1994 Act provides that for any archaeological object found which has no known owner, ownership is vested in the State.
- 14.1.9 Full details of the assessments undertaken are presented in Appendix B.

14.2 Port-wide Effects Locally

Key Baseline of Relevance

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
Archaeological Heritage			
Undesignated archaeological assets the preservation of which is of National Importance by reason of their historical, architectural, traditional, artistic or archaeological interest. Assets included in the Shipwreck Inventory of Ireland	High	While undesignated such archaeological assets can provide a very high level of archaeological evidence to enable the understanding and interpretation of the past. Known shipwrecks identified by the Shipwreck Inventory of Ireland	Accurate locations of shipwrecks are not provided in the Shipwreck Inventory of Ireland and there is therefore the potential for such assets to be located within the proposed development areas. There is potential for archaeological remains of High sensitivity to be present within the development area. Construction or dredging may partially or totally remove archaeological remains.
Recorded Monuments including Zones of Archaeological Importance Rare, well-preserved, undesignated	Medium	Additional protection to Recorded Monuments provided by Section 12 (3) of the 1994 National Monument Act Zones protected under the Dublin City	Zones of Archaeological importance and Recorded Monuments are present to the south of Dublin Harbour. There is potential for archaeological remains of Medium sensitivity to be present within the development

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
archaeological assets with identifiable group value, a high degree of vulnerability and high amenity value.		Development Plan 2011-2017 While undesignated such archaeological assets can provide a high level of archaeological evidence to enable the understanding and interpretation of the past.	area. Construction may partially or totally remove archaeological remains.
Averagely well-preserved, undesignated archaeological assets with limited group value, limited vulnerability and low amenity value.	Low	While undesignated such archaeological assets can provide a moderate level of archaeological evidence to enable the understanding and interpretation of the past.	There is potential for archaeological assets of Low sensitivity to be present within the development area. Construction may partially or totally remove archaeological remains.
Architectural Heritage			
Assets assessed by the Dublin City Council's Inventory of Industrial Heritage to be of National value: Pigeon House Power Station.	High	Identified by Dublin City Council as being of National merit.	Impacts on the setting of Pigeon House Power Station due to increased port development and land reclamation to the north.
Protected Structures or assets which, while not designated, meet the criteria for designation as Protected Structures Assets assessed by the Dublin Inventory of Industrial Heritage to be of Regional merit	Medium	Designated and protected under the Planning and Development Act 2000 or assessed by Dublin City Council as being of Regional merit.	Assets of regional merit recorded in the Dublin Inventory of Industrial Heritage are present to the north and south of Dublin Harbour within Dublin Port. A number of Protected Structures are present in the area of Pigeon House Road within and adjacent to Dublin Port. The Masterplan may result in partial or total removal of historic fabric from assets identified on the Dublin Inventory of Industrial Heritage to be of Regional merit. Impacts on setting may also result from increased port development.

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
Architectural Heritage assets which, whilst not designated, meet some of the criteria for designation as Protected Structures. Conservation Areas designated under local development plans.	Low	Assets which hold some cultural heritage value and are important on a local scale. Areas identified by Dublin City Council Development Plan for their contribution to the heritage of the city.	There is potential for undesignated architectural heritage assets of Low value to be present within Dublin Port. Development of the Masterplan may result in the partial or total removal of these assets, or impacts on setting due to increased port development.

- 14.2.1 The above Rationale for Categorisation column is a brief summary of the information presented in the Characterisation of the Existing Environment section (Section 7.0). This information was used in the development of the impact assessment.

Assessment Before Mitigation

Archaeological Heritage

- 14.2.2 No short-term impacts are predicted on archaeological heritage assets.
- 14.2.3 Construction of options presented in the Masterplan may result in the partial or complete removal of unknown archaeological remains due to dredging within the harbour or other construction activities. Removal of archaeological remains is a permanent impact.
- 14.2.4 Using professional judgement guided by the matrix presented in Section 2.5, the significance of these effects has been assessed to be **major adverse** for assets of High and Medium importance, and **moderate adverse** for assets of Low importance.

Architectural Heritage

- 14.2.5 In the short term, the implementation of the Masterplan has been assessed to have an adverse impact on the setting of architectural heritage assets due to temporary impacts on setting resulting from noise and visual intrusion associated with construction activities. Based on the existing setting of the Pigeon House Power Station being characterised by mainly by port infrastructure, using professional judgement guided by the matrix presented in Section 2 the potential significance of these effects on setting has been assessed to be **moderate adverse** in the short term for assets of High importance, and **minor adverse** in the short term for assets of Medium and Low importance.
- 14.2.6 Construction of options presented in the Masterplan may result in the partial or total removal of undesignated architectural heritage assets of Medium or Low importance. Any such physical impacts on architectural heritage assets will be permanent.
- 14.2.7 No physical impacts will occur as a result of the Masterplan on Protected Structures.

- 14.2.8 In the medium to long term, adverse impacts on the setting of architectural heritage assets may result from the presence and operation of new port facilities. Whilst the setting of architectural heritage assets within the port is currently industrial in character, the Masterplan has the potential to impact on the setting of architectural heritage assets due to new port buildings, or the proximity or prominence of new developments.
- 14.2.9 The potential significance of these effects for architectural heritage assets of High and Medium importance have been assessed to be **moderate adverse**, and the potential significance of effect for architectural heritage assets of Low importance has been assessed to be **moderate adverse**.

Mitigation Proposed

- 14.2.10 For archaeological heritage assets there are two possible approaches to mitigation:
- *Preservation in situ; or*
 - *Preservation by record.*
- 14.2.11 Preservation in situ may be achieved through detailed design of future developments to avoid physical impacts on archaeological heritage assets, enabling preservation in their current form and condition.
- 14.2.12 Where preservation *in situ* is not feasible, preservation by record is recommended to mitigate identified impacts. This methodology is in accordance with the principles and recommendations outlined in the '*Framework and Principles for the Protection of the Archaeological Heritage*' (DAHGI 1999, 25). Preservation by record consists of fully recorded investigations in the field, followed by analyses, reporting and publication. The information gained will be widely disseminated by a series of printed and internet publications for the benefit of scholars and the general public.
- 14.2.13 These works would require a licence from the National Monuments Service of the Department of Arts Heritage and the Gaeltacht, following the provisions of the National Monuments Act. In applying for the appropriate Licences, detailed method statements for the proposed works would need to be approved by the National Monuments Service, the National Museum of Ireland and agreed with the Dublin City Archaeologist.
- 14.2.14 Physical impacts on architectural heritage assets may be avoided through detailed design of future developments, to enable the preservation of assets in their existing condition. Impacts on the setting of architectural heritage assets may also be reduced or removed by detailed design through careful consideration of the scale, massing or prominence of new structures, sensitive choice of building materials, or the use of landscape planting to help integrate new structures into their setting or reduce their visual impact.
- 14.2.15 Where impacts on the fabric or setting of an architectural heritage asset cannot be avoided, a photographic and / or drawn record may be created to provide a permanent record of the structure in its current condition and setting. The findings of recording works should be fully reported and the resulting archive submitted to an appropriate depository for future public reference.
- 14.2.16 Opportunities for interpretation of cultural heritage assets within the proposed Public Amenities Area are also recommended for consideration during the detailed design stage. This area was the site of Pigeon House Fort and retains considerable evidence of its history and development, as is reflected in its designation as a Conservation Area, and the presence of heritage assets including a Recorded Monument, a number

of Protected Structures, and assets recorded in the Dublin Inventory of Industrial Heritage.

- 14.2.17 Figure 8 (Engineering Options Drawing) identifies that the area of Dublin Electricity Generating Station, Pigeon House Hotel etc has been identified to be developed as a public amenity area in conjunction with DCC. Relating to this area, DPC will take account of the 'Dublin Electricity Generating Station, Pigeon House Hotel, Harbour and Fort Remnants Conservation Plan' when the study is completed."

Residual Effect with Mitigation

Archaeological Heritage

- 14.2.18 With the implementation of appropriate mitigation as detailed in Section 14.2.10 – 14.2.16 for archaeological assets of high importance (e.g. shipwrecks), using professional judgment, and guided by the matrix presented in Section 2, the impact is assessed as **moderate to minor adverse**.
- 14.2.19 With the implementation of appropriate mitigation as detailed in Section 14.2.10 – 14.2.16 for archaeological assets of medium and low importance. Using professional judgment, and guided by the matrix presented in Section 2, the impact is assessed as **minor adverse to negligible**.

Architectural Heritage

- 14.2.20 With the implementation of appropriate mitigation, as detailed in Section 14.2.14 for architectural assets of high importance, using professional judgment, and guided by the matrix presented in Section 2, the impact is assessed as **minor adverse**.
- 14.2.21 With the implementation of appropriate mitigation as detailed in Section 14.2.14 for architectural assets of medium and low importance. Using professional judgment, and guided by the matrix presented in Section 2, the impact is assessed as **minor adverse to negligible**.

14.3 Port-wide Effects - Regional and Global

- 14.3.1 The effects of the impacts described above in the section above would be felt at a regional scale; the significance of the wider impact both nationally and globally is therefore assessed to be none and no further mitigation is recommended.

15 Landscape

15.1 Topic Definition and SEA Framework

- 15.1.1 This section covers issues associated with potential landscape and visual effects associated with the Masterplan proposals.
- 15.1.2 Landscape results from the way that different components of our environment – both natural (the influences of geology, soils, climate, flora and fauna) and cultural (the historical and current impact of land use, settlement, enclosure and other human interventions) – interact together and are perceived by us.
- 15.1.3 Table 15.1 below sets out the SEA Objectives, indicators and targets for landscape which have been utilised to develop the baseline and guide the assessment process.

Table 15.1: SEA Framework for Landscape

SEA Objectives	Indicators	Targets
15 – Landscape		
To avoid significant negative impacts of existing and future port development on the landscape character of the area, and achieve benefits where possible.	Decrease in the quality of amenity / recreational areas in the vicinity of the port estate.	Contribute to the enhancement of views into and from the port estate.

- 15.1.4 Full details of the assessments undertaken are presented in Appendix B.

15.2 Port-wide Effects Locally

Key Baseline of Relevance

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
Industrial character of the port.	Low	Low aesthetic value due to industrial nature of port activities.	<p>The port's influence on the wider landscape / landscape quality, and in turn its influence on visual impacts and nearby residents.</p> <p>Reducing landscape quality may also affect the setting of the River Liffey and Dublin Bay.</p> <p>Projects such as new quay walls for cruise ships, interconnector bridge + the bridge required to access the car storage facility may bring additional visual impacts to residential areas.</p>

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
Views of both the north and south site of the port, and Bull Island.	High	<p>Views are severe and unwelcoming, particularly along East Wall Road where there is a high wall topped with security fencing. North Bull Island is an area of national landscape importance, and the port forms part of its setting.</p> <p>Areas surrounding the port estate are zoned within the Dublin City Development Plan as:</p> <p>Zone Z1: protect, provide and improve residential amenities</p> <p>Zone Z9: preserve, provide and improve recreational amenity and open spaces and green networks.</p>	<p>The visual integration between the port and the city.</p> <p>Visitors travelling to and from the port on cruise ships do not have a welcome view of the port.</p> <p>Barriers between the port and the immediate area outside of the port estate.</p> <p>The port has an impact on residential views and views of Bull Island.</p>

- 15.2.1 The above Rationale for Categorisation column is a brief summary of the information presented in the Characterisation of the Existing Environment section (Section 7.0). This information was used in the development of the impact assessment.

Assessment before Mitigation

- 15.2.2 Although most of the construction activities would not be in the immediate view of the receptors, before mitigation, it is anticipated that there would be **minor adverse short-term** effects relating to construction activities. Both the landscape character and the visual aspect of the port would be adversely affected by construction compounds, machinery and general construction traffic. This is likely to be temporary in nature.
- 15.2.3 Reclamation of land and new buildings could increase the visual envelope of the port and in turn, expand its overall influence on the landscape. Of particular concern are the following groups of people:
- Recreational users of North Bull Wall and the Great South Wall; and
 - Nearby local residences and passers-by at:
 - Alfie Byrne Road and East Wall Road,
 - Clontarf Road,
 - York Road, Pigeon House Road and Great South Wall, and
 - Bull Wall Road and North Bull Island.

- 15.2.4 These impacts may reduce the influence that other features such as views of the Clontarf coastline and sailboats anchored north of the port have on the wider landscape.
- 15.2.5 Landscape enhancements are proposed within the Masterplan which will assist in reducing the adverse effects of new developments. Such enhancements include landscaping on the East Wall Road and Promenade Road, additional grassland areas, introduction of new art and cultural features within the port and landscaping screens on the northern perimeter.
- 15.2.6 Overall, prior to mitigation it is envisaged that the port developments will result in **medium-to-long-term, minor adverse** effects on the landscape.
- 15.2.7 In terms of visual amenity, **moderate beneficial medium to long-term** effects may be achieved. The view of the port will be enhanced from outside of port estate and from nearby residential areas. This is considered to be particularly important to residents to the north in the Clontarf area and also to those on Alfie Byrne Road and East Wall Road in the West, York Road, Pigeon House Road and Great South Wall in the South and Bull Wall Road and North Bull Island in the east.
- 15.2.8 Due to the Dublin Gateway, residents and others in Clontarf will have greater views of the port and more restricted views of the Great South Wall and beyond, however views of the entire port will be softened by landscaping.
- 15.2.9 New cruise ship berths at North Wall Quay will provide a more visually appealing setting for passengers arriving to and from Dublin.

Mitigation Proposed

- 15.2.10 Mitigation proposed to address potential adverse landscape and visual effects of port developments or enhance those which are considered negligible or beneficial are detailed below:
- Where possible, identify and use routes required for the delivery of construction materials which avoid residential areas. Where this may not be possible, use routes which either already are heavily trafficked by HGVs or which are in least proximity to the fewest views by residents.
 - DPC will consider the development of a Port Wide Landscape Plan relevant to the port estate and the Masterplan. Appropriate landscaping and arboricultural input will be commissioned for future landscape enhancement proposals.
 - Investigate the potential for use of emerging new technologies such as 'green walls' which involve the use of plant climbing systems.
 - Develop measures to accommodate for any deterioration in the setting of the River Liffey, North Bull Island and Dublin Bay resulting from future developments. Good quality urban landscaping is required to provide a transitional zone between neighbouring uses and the port.

Residual Effect with Mitigation

- 15.2.11 Despite mitigation outlined above, **temporary minor short-term** effects to the landscape and visual aspect of the port are anticipated to remain. This is due to the temporary required presence of construction compounds, machinery and other plant in addition to construction traffic on the road network.

- 15.2.12 In the medium to long term, there are anticipated to be some residual adverse effects resulting from the proposed extension of the port eastwards and other infill in the south, however there will be trade offs with the potential benefits of proposed landscape enhancements. This is therefore likely to result in **negligible** effects.
- 15.2.13 Visually, it is likely that the Masterplan will have a **moderate beneficial medium- to long-term** residual effect through boundary softening measures.

15.3 Port-wide Effects - Regional to Global

- 15.3.1 Landscapes can be features of regional and national significance, and as an historic and central part of Ireland, Dublin Port can be seen to fit within a nationally significant industrial and coastal landscape. Therefore, the net beneficial long-term effects identified in the previous section are considered to apply to all who use and appreciate the landscapes of Ireland, in addition to the individual potential visual receptors assessed.
- 15.3.2 On a global scale, the impact is assessed to be none. No further mitigation is needed.

16 Population, Human Health and Deprivation

16.1 Topic Definition and SEA Framework

- 16.1.1 The 2011 Census revealed that the population of Ireland had reached 4.58 million people. This represents a national population growth of 1.6% since the last census in 2006.
- 16.1.2 The table below sets out the SEA Objectives and decision-making criteria for population which have been utilised to develop the baseline and guide the assessment process.

Table 16.1: SEA Framework for Population, Human Health & Deprivation

SEA Objectives	Indicators	Targets
16 – Population, Human Health and Deprivation		
To improve the strength of the Irish and Dublin City economy, whilst positively attracting business and allowing for the retention and expansion of existing businesses.	Throughput of cargo and passengers at DPC, measured in million tonnes / annum and passengers / annum.	Increase the level of efficient land use to assist Dublin Port in maintaining its key economic importance on a national and international basis.
To improve the accessibility of community amenities and facilities to local residents.	Numbers of amenities provided which have benefits for the local communities.	Increase in the number of amenities and facilities available to local residents.

- 16.1.3 Full details of the assessments undertaken are presented in Appendix B.

16.2 Port-wide Effects Locally

Key Baseline of Relevance

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
Levels of deprivation.	Low	The areas surrounding the port do not suffer high levels of deprivation. As of 2006, most deprived area surrounding port was measured to be marginally above average with Pembroke East B, Clontarf East A and Clontarf East D being very affluent.	Provision of access to additional amenities for local communities. A number of recreational areas and open space surround the port. Possible increase in traffic congestion, particularly during construction. Potential for increasing tourism within the port area. A number of tourist

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
			attractions are located within the Docklands area.
Local population.	Low	<p>According to the 2011 census, population has increased from 2006 to 2011 in 9 of 12 electoral divisions surrounding the ports (with exception of Clontarf East D and Clontarf West C and D which have seen a decline).</p> <p>Life expectancy according to CSO reports has increased for both males and females and trend is likely to continue.</p> <p>The census indicated that towards the end of 2007, nearly 90% of adults perceived themselves in good to very good health.</p> <p>The physical and mental health of the communities of Clontarf, East Wall, Irish Town and Ringsend are generally good.</p>	<p>Facilities such as Lo-Lo terminals are sources of noise emissions (see Section 12 for more information).</p> <p>Sources of air pollution include the road network, sea traffic and industrial processes undertaken within the port (see Section 13 for more information).</p> <p>The port has an impact on visual amenity of people living nearby (see Section 15 for more information).</p> <p>A number of open spaces and recreational areas in the vicinity of the port.</p> <p>The location of a number of SEVESO classified sites within the port estate may be identified as having the potential to impact on human health.</p> <p>Increasing population in many areas surrounding the port.</p>
Unemployment levels in Dublin.	High	<p>The Quarterly National Household Survey illustrated an increase in unemployment over 2005-2011.</p> <p>The Port lacks formalised pedestrian areas, particularly in the north.</p>	<p>There is a need for new job opportunities for local communities.</p> <p>The port provides trade to local businesses and industry and this is anticipated to increase in the future.</p> <p>Tourism is anticipated to rise although public transport access needs to improve in the port estate.</p> <p>The port's existing programme for support of community education will be maintained.</p>

16.2.1 The above Rationale for Categorisation column is a brief summary of the information presented in the Characterisation of the Existing Environment section (Section 7.0). This information was used in the development of the impact assessment.

Assessment before Mitigation

- 16.2.2 In the short term, there are envisaged to be **minor adverse temporary** effects associated with the construction phase of developments. This is likely to occur through increased traffic in and around the port which could lead to congestion. This would not only inconvenience local residents but could lead to a rise in air and noise emissions. In addition, there is likely to be deterioration in the visual amenity of local residents.
- 16.2.3 Some benefits are achievable in the short term due to the potential for local employment opportunities in the construction of port developments. It is anticipated that this will lead to **temporary minor benefits**.
- 16.2.4 Looking ahead to the medium to long term, new sustainable transport opportunities may bring **minor benefits** to local communities close to the port and visitors to Dublin. In addition, the port proposes the inclusion of new leisure activities such as swimming, sailing and fishing as well as the provision of two new amenity areas within the port estate.
- 16.2.5 Further benefits can occur as a result of increased trade for local businesses and industry which can encourage start up and enhancement of businesses having further regional effects through strengthening the Dublin City economy (see Section 16.3 for further details). In addition, the potential rise in tourism numbers can further boost the economy.
- 16.2.6 There is the potential that new development at the port, could bring about a rise in noise emissions in particular associated with Lo-Lo facilities (see Section 12 for more information). Additional traffic and industrial processes can also result in a rise in air and noise emissions (see Section 13). Both noise and air pollution can have a damaging impact on human health. Mitigation is incorporated into Sections 12 and 13 to address noise and air emissions. There is a further commitment to addressing traffic management (Section 18) issues. With these measures in place, **no significant** effects on population and human health are anticipated.
- 16.2.7 Employment opportunities in the port will be available to the public once the new developments are in place. Additionally any programmes identified as relevant to provide training, to address the potential skill set for people who wish to seek employment in the port estate will be made available, further benefiting the population.

Mitigation Proposed

- 16.2.8 Mitigation proposed to address potential adverse effects and enhance others is detailed within Section 12 (Noise) and 13 (Air Quality) in addition to that which is set out below.
- Where possible, identify and use routes required for the delivery of construction materials which avoid residential areas. Where this may not be possible, use routes which either already are trafficked by HGVs or which are in least proximity to the fewest views by residents.
 - Incorporate measures to protect and enhance the health and safety of staff working at the port and visitors when planning for new development.

Residual Effect with Mitigation

- 16.2.9 Short-term residual effects associated with the construction phase include the presence of construction vehicles which could result in traffic congestion. This is envisaged to lead to temporary **minor adverse** effects. There is a risk that temporary impacts will

occur which requires project-specific assessment and consideration in the future. It is not impossible to eliminate this risk at the Masterplan level.

- 16.2.10 Although there are minor adverse effects identified, some **minor benefits** are achievable through temporary positions in the port during construction of new developments which could boost local job opportunities.
- 16.2.11 Medium to long-term **minor residual benefits** are thought to occur through improving accessibility of community facilities and facilities to local residents. Increased trade through the growth of the port and encouragement of tourism along with the potential for employment, educational and training opportunities will likely lead to **moderate benefits** in the medium to long term.

16.3 Port-wide Effects - Regional and Global

- 16.3.1 On a wider scale, the Masterplan is expected to provide long-term minor benefits to the population of Dublin and also for Ireland as a whole. The port expansion is likely to bring increased trade to industry and businesses not only within Dublin but also beyond into the rest of Ireland. This can increase growth in the Irish economy whilst also providing for additional employment opportunities. The Masterplan proposals will likely generate increased tourism through improved facilities for cruise liners and additional attractions for visitors. This is envisaged to provide further potential for growth of the economy.
- 16.3.2 As stated in Section 6, the port has an influence on transport patterns for freight nationally. As the alternatives assessment points out, shipments are expected to increase in size in the future, and thus one shipment will serve more destinations. This trend better matches the transport infrastructure around Dublin, as opposed to any other single location. This is largely due to a motorway and rail network which is centred on the city. It is considered that the expansion at Dublin Port minimises the amount of road freight transported on local roads, and the noise and air emissions associated with these HGVs. This can reduce the adverse effects of pollution on the population of Dublin and beyond.
- 16.3.3 The effects of the impacts described in the section above would be felt at a regional and/or national scale. The significance of the wider impact on a global scale is assessed to be none and therefore is further mitigation is recommended.

17 Transport

17.1 Topic Definition and SEA Framework

- 17.1.1 This Section is associated with the management of transportations within the port and its surrounding environment. Dublin Port is the main gateway into Dublin / Ireland, both for tourists on ferries and imports and exports. In terms of freight, the port handled a throughput of just over 28 million tonnes in 2010.
- 17.1.2 Table 17.1 below sets out the SEA Objectives and decision-making criteria for transport which have been utilised to develop the baseline and guide the assessment process.

Table 17.1: SEA Framework for Transport

SEA Objectives	Indicators	Targets
17 – Transport		
To avoid significant negative impacts in terms of traffic levels accessing and exiting the port estate.	Increase in the level of intermodal transport options within the port estate.	Enhance the provision of a sustainable and integrated network within Dublin City.

- 17.1.3 Full details of the assessments undertaken are presented in Appendix B.

17.2 Port-wide Effects Locally

Key Baseline of Relevance

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
Traffic levels on the surrounding road network within Dublin.	Medium	<p>Dublin Port is the main gateway into Dublin / Ireland both for tourists on ferries and imports and exports. The port has an excellent transport infrastructure and the Dublin Port Tunnel has relieved all congestion from within the port. In addition, the upgrading of the M50 has greatly reduced the time taken to transport goods to and from the port.</p> <p>At present, the port is poorly serviced by public transport links.</p> <p>Most of trade is container trade and transported from the port by the external road</p>	<p>Increased requirement to transport imports and export trade and also tourists into and out of the port estate will continue to increase which could put pressure on the road network.</p> <p>Increasing rail freight in and out of the port estate.</p> <p>Congestion issues on local roads.</p>

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
		<p>network. The majority (60%) use the Dublin Port Tunnel with the remaining traffic accessing the port from East Wall Road to the south.</p> <p>Some bulk goods (ore and other commodities) enter and leave the port via rail. Port is well connected to accommodate an increase in rail freight transportation.</p> <p>DCC introduced a ban on 5+ axle vehicles without a valid permit between the hours of 7am and 7pm within a designated cordon area (roughly bounded by the canals). The ban prevents freight traffic from the port significantly affecting other road users west and south of the port. This has resulted in an 88-96% reduction in 5+ axles within the city centre with over 3,582 5+ axle vehicles utilising the Dublin Port Tunnel per day in 2009.</p>	
<p>Levels of usage of more sustainable transport modes.</p>	<p>Very High</p>	<p>At present, the port is poorly serviced by public transport links.</p> <p>No bike stations are currently present in the port area. Rail services at Grand Central Dock DART station are around 2.6km from port centre.</p> <p>Bus stops are located within the Northern Port on East Wall Road, East Road and Upper Sheriff Street.</p> <p>Luas Red Line runs from Saggart via Dublin City Centre to the Point on East Wall Road.</p> <p>There is a lack of footpaths and pedestrian/cyclist accessibility within and around the port.</p>	<p>North port estate lacks public transport provision to the passenger ferry terminals.</p> <p>Lack of usable footpaths, cycle paths and accessibility within and round the port estate.</p> <p>The North and South Port Estate lacks public transport provision for workers access to their places of work</p>

- 17.2.1 The above Rationale for Categorisation column is a brief summary of the information presented in the Characterisation of the Existing Environment section (Section 7.0). This information was used in the development of the impact assessment.

Assessment before Mitigation

- 17.2.2 Construction of the new developments within the port estate will likely lead to a rise in traffic on the local road network leading to congestion and delays for local people and public transport. This is anticipated to have **minor short-term adverse** effects on the transport network.
- 17.2.3 Several measures are proposed within the Masterplan to address the predicted growth in traffic levels. These include a new access route at the east end of the port, provision of a new north-south Port Interconnector bridge and access road to service the Southern development and a new foot / cycle path along the length of the north shore. This is likely to balance out some of the potential adverse effects.
- 17.2.4 It is felt likely that in the long term, if all Masterplan options were developed, there may be some congestion issues with regard to transportation. Taking this long-term issue into consideration, there is expected to be **minor adverse** effects prior to mitigation.
- 17.2.5 With regards to sustainable travel options within the port, several measures are proposed. There is the potential that new bus routes to and from the port could be put in place depending upon agreements with local bus companies. In addition to this, a new foot / cycle path is proposed (as mentioned above) and improved access will be provided to cruise liner passengers and crew visiting the city. This is envisaged to have **minor beneficial** effects in the medium to long term.

Mitigation Proposed

- 17.2.6 Mitigation proposed to address potential adverse effects and enhance others is outlined below.
- DPC will develop a Transport Management Plan for the Port Estate in conjunction with the National Transport Authority and Dublin City Council
 - Additional improvements could be made to create more sustainable transport options for movement of freight to and from the port.
 - Additional improvements in the provision of public transport routes to and from the port.
 - Measures to encourage car sharing for people working within the port.
 - Each planning application for future projects at the port will have to consider traffic growth at the time of the application. Any mitigation necessary will be agreed with Dublin City Council.
 - Review the potential for installation of a Dublin Bike Scheme Station within or in the immediate vicinity of the port area with improved cycle and footway links to the city centre.
 - Proposals will be implemented to provide suitable cycle and pedestrian access to the port while ensuring that there will also be sufficient cycle routes and parking facilities.

- As part of the Dublin Port Travel Plan, DPC shall give consideration to the appointment of a travel plan co-ordinator and steering group for the port estate which will include representatives such as port tenants and public transport providers.
- In addition to land-based transport movements, DPC will liaise with other users of the port, such as owners/users of leisure and fishing/trawling vessels as relevant, in respect of the management of marine-based movements and the integration by DPC of the needs of these users with DPC's specific port functions, including those such as dredging.

Residual Effect with Mitigation

- 17.2.7 In the short term, there is the potential for **minor adverse** effects resulting from the Masterplan due to the required presence of construction vehicles leading to temporary congestion on the roads around the port estate. This could result in delays for commuters and for public transport services.
- 17.2.8 In addition to this, there is a risk that temporary impacts will occur which requires project-specific assessment and consideration in the future. It is not possible to eliminate this risk at the Masterplan level.
- 17.2.9 Looking ahead to the medium to longer term, mitigation in place should counteract the potential congestion issues resulting from increased port traffic and lead to **negligible** effects.
- 17.2.10 With regard to sustainable travel opportunities, in the future it is anticipated that options for sustainable travel within and around the port will grow. In the medium to long term, cruise liner passengers, crew, visitors to the port and other port workers will have greater active travel opportunities and improved public transport services to and from the port estate. This is expected to result in **moderate benefits**.

17.3 Port-wide Effects - Regional and Global

- 17.3.1 Any regional or national traffic increases from increased freight and passenger throughput would be expected to occur regardless of expansion at Dublin Port, and thus regardless of the Masterplan. Therefore, the regional and national impact can be considered to be neutral in this regard.
- 17.3.2 However, as stated in Section 6, the trend in increasing shipment size may be better suited to Dublin than other ports, given destinations for a single shipment could be on all sides of the island. The motorway and rail network of Ireland centres on Dublin and may facilitate this transport more efficiently. This could be considered a national beneficial effect of the Masterplan.
- 17.3.3 Also, as a result of the increasing size of shipments anticipated in the future, it is envisaged that the port's expansion will somewhat be likely to minimise sea shipping congestion, traffic generation and emissions.

18 Waste Management

18.1 Topic Definition and SEA Framework

- 18.1.1 Waste management is the collection, transport, processing or disposal, managing and monitoring of waste materials.
- 18.1.2 The Waste Management Plan for the Dublin Region 2005-2010 identifies the primary objective to prevent the generation of waste where possible. If waste generation cannot be avoided, then the options of waste minimisation, reuse and recycling should be practised where possible to avoid waste being directed to landfills. Subsequent WMPs for the Dublin region, although not yet published, are envisaged to contain these same general objectives.
- 18.1.3 Table 18.1 below sets out the SEA Objectives and decision-making criteria for waste management which have been utilised to develop the baseline and guide the assessment process.

Table 18.1: SEA Framework for Waste Management

SEA Objectives	Indicators	Targets
18 – Waste Management		
To increase the rate of reuse and recycling at the port and the amount of reused and recycled materials in construction against industry averages.	The level of waste being directed to landfill- would result in not achieving the SEA objective.	Contribute to the achievement of the DCC Waste Management Plan objectives – to prevent waste generation with the options of waste minimisation, reuse and recycling being practised where waste generation cannot be avoided.

- 18.1.4 Full details of the assessments undertaken are presented in Appendix B.

18.2 Port-wide Effects Locally

Key Baseline of Relevance

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
Waste and recycling levels within the port estate.	Medium	Currently waste recycling figures achieved by DPC during the 2010-2011 timeframe was 82-83%. DPC are developing guidelines in the reuse of suitable arisings derived from future development projects, operation / maintenance activities and	Growth of port activities and facilities are forecast to increase up to 2040. This is likely to result in an associated rise in waste levels.

Feature or Performance Indicator / Area	Categorisation of Importance or Sensitivity	Rationale for Categorisation	Potential for Effects (Why Relevant)
		<p>arisings currently stockpiled within the port estate. These guidelines will assist in the appropriate segregation and stockpiling of arisings and, where appropriate, efficient reuse of arising within the port estate where suitable.</p> <p>In 2010 there was enhanced waste segregation in the terminals, offices and canteens and segregation of construction and demolition waste.</p>	

18.2.1 The above Rationale for Categorisation column is a brief summary of the information presented in the Characterisation of the Existing Environment section (Section 7.0). This information was used in the development of the impact assessment.

Assessment before Mitigation

18.2.2 Short-term effects of the Masterplan are mainly associated with construction activities. Quantities of waste are expected to increase both from construction and from additional workers present in the port area. This is anticipated to have a corresponding increase in waste to landfill. There is a risk that temporary impacts will occur which requires project-specific assessment and consideration in the future. Therefore it is not impossible to eliminate this risk at the Masterplan level. Considering this, **minor adverse** short-term effects are expected.

18.2.3 DPC currently has waste management practices in place including emerging guidelines on segregation and stockpiling of arisings. Although it is specified within the Masterplan that further waste management plans require consideration, without specific measures in place to address the increasing waste through the new port developments, there is the potential that waste and recycling targets are not met in the future. The absolute increase in port facilities and activity will likely lead to increasing volumes of waste being sent to landfill (see regional effects). This is likely to result in medium to long-term **minor adverse** effects.

Mitigation Proposed

18.2.4 Mitigation proposed to address potential adverse effects and enhance others is outlined below:

- Review the current waste management plan in place for the port in order to assess how best to accommodate additional predicted waste outputs from the new developments.
- Construction waste management plans will be developed for future developments and projects to ensure that as much suitable material (such as soil, stone etc) can be reused in other areas of the port estate, reducing waste disposed off site.

- The DPC waste management strategy and future plans, using records from the DPC GIS system, will give appropriate consideration to the potential to encounter contaminated soil arisings during the development of future projects. Details including proposed handling/management of the arisings, interim storage requirements, proposals for reuse on site and/or disposal off site will be provided in the plans.

Residual Effect with Mitigation

- 18.2.5 With mitigation in place, as set out above, no significant residual effects are considered likely. Residual effects are therefore considered to be **negligible** in the short, medium and long term.

18.3 Port-wide Effects - Regional and Global

- 18.3.1 Provided that the port implements / updates their waste management plans to accommodate the additional waste associated with the proposed new developments, it is not anticipated that there would be any significant effects on the management of waste for the Dublin area or further afield.

19 Cumulative Effects

- 19.1.1 Cumulative effects are those effects which occur as a result of multiple actions upon the same receptor – whether a community, a group of people or an aspect of the environment. The Masterplan will be implemented alongside development related to housing, economic land and others. Cumulative effects across receptors have been considered within Sections 8 to 18 where applicable.
- 19.1.2 Table 19.1 below summarises the potential cumulative effects associated with other developments proposed in the Dublin Port area.

Table 19.1: Cumulative Effect Implications and Further Mitigation

Relevant Development	Implications	Further Mitigation
Greater Dublin Area draft Transport Strategy	The transport strategy proposes a new Luas (or BRT) line to south Docklands or Poolbeg in addition to new underground stations at Docklands. When considered cumulatively with the Masterplan developments it is likely that there will be additional benefits to the population and visitors through new and improved transport links to Dublin city centre from the port area.	No further mitigation is required.
Draft Poolbeg Planning Scheme	<p>The Scheme identifies four zones within the South Bank area which would combine residential and commercial uses. The Scheme outlines provision for the development of existing buildings such as the Pigeon House Power Station into areas for heritage, arts and cultural development points.</p> <p>There is a strong emphasis on public transport provision, pedestrian and cycle routes and innovative approaches to sustainable modes of transport. Cumulatively, this could link in with the Masterplan proposals for new walking and cycling routes providing people with improved linkages between areas. There is however the potential, particularly in the short term, that the construction phase could lead to increased traffic on the local roads. Considering this with the Masterplan developments, there could be adverse cumulative effects resulting from increased air pollution and noise emissions which indirectly can affect human health.</p> <p>The scheme proposes high quality design, public realm and open spaces in addition to the recognition of the high historic and architectural quality of the area and so it is not considered that cumulatively there will be a significant effect on the landscape and visual amenity.</p>	It is not envisaged that the Poolbeg scheme would be constructed during the same time period as the Masterplan developments and so there is not likely to be a need for mitigating any short-term impacts. Should construction schedules coincide, a co-ordinated approach to traffic management should be considered.
Proposed projects		
The Dublin Waste to Energy Facility	<p>The proposed Dublin Waste to Energy (DWtE) facility will be located on the Poolbeg Peninsula in Dublin. The majority of the Site is located south of Pigeon House Road, covering an area of approximately 5.5 hectares (13.6 acres).</p> <p>In addition, the DWTE facility requires the construction of a cooling water intake on the South Bank Quay in the location of the currently proposed bridge across the cooling water channel.</p> <p>This facility has indicated that it will not have an impact</p>	There should be a co-ordinated approach to addressing issues. The DWTE project has specified that when the plant is operational, waste deliveries will be via the M50 and the Dublin Port Tunnel, except for waste arising from the central area. Fixed routes have been introduced to limit the

Relevant Development	Implications	Further Mitigation
	<p>on the surrounding Natura 2000 designated sites.</p> <p>Should construction schedules for the DWTE facility and DPC developments coincide, there may be resultant cumulative effects particularly in relation to traffic movements. These would likely be in the short term during construction.</p> <p>A Lo-Lo facility is located to the west of the proposed DWTE project. Throughput is to be increased at this facility and, in conjunction with the DWTE facility traffic, could lead to cumulative traffic management issues in the longer term with potential cumulative effects to air quality and noise emissions. This is most significant for receptors in the vicinity of the developments including the Coastguard Cottages and Pigeon House Road residents. During operation, the cumulative effects of noise emissions resulting from traffic and from the facilities themselves could adversely affect these receptors.</p> <p>There may also be cumulative effects on water quality with secondary effects to aquatic ecology. Flood risk may also be an issue.</p> <p>Cumulative effects on local communities, particularly around Pigeon House Road, are considered possible due to the potential for congestion on the roads and indirect impacts on health if air pollution and noise emissions increase.</p> <p>Visual amenity is also an important consideration when considering the Masterplan developments alongside the DWTE facility. There is the potential for synergistic adverse effects on the landscape and visual amenity depending on the exact design of the facility and positioning in relation to the Masterplan developments. This is likely to be most significant for those residents along Pigeon House Road and at Coastguard Cottages. There could also be adverse cumulative effects in terms of the setting of cultural heritage features.</p>	<p>impact on residential areas in the vicinity and along access routes to the development.</p> <p>This should help to reduce cumulative effects. However, a co-ordinated approach to traffic management shall be considered to minimise impacts.</p> <p>DPC shall liaise with the DWTE project in the development of future Integrated Environmental Management Plan with regards to air quality and noise emissions.</p> <p>If individual DPC projects are being developed within the same timeframe of the DTWE project, these projects will ensure that any flood risk issues will be addressed.</p> <p>If individual DPC projects are being developed within the same timeframe as the DTWE projects, these projects will ensure that potential landscaping issues relevant to both are adequate.</p>
<p>Sutton to Sandycove S2S Project</p>	<p>The total length of the proposed promenade and cycleway will be approximately 22 kilometres in length from Sutton to Sandycove. The scheme proposes to upgrade and join up various existing sections of the promenade and cycleway to form a continuous route along the seafront of Dublin Bay.</p> <p>In conjunction with the improved walking and cycling routes proposed in the Masterplan there are likely to be cumulative benefits to the population in terms of additional transport opportunities and indirect benefits to health.</p>	<p>No further mitigation is required.</p>
<p>S2S - Dollymount Promenade and Flood Protection Project</p>	<p>The Dollymount Promenade and Flood Protection Project (DPFPP) is a dual purpose scheme:</p> <ol style="list-style-type: none"> 1. Provide promenade and cycleway connecting existing sections to complete 8 km promenade and cycleway in North Dublin Bay and contribute to the overall aim of providing 22 km in Dublin Bay. 2. Provide flood defence between the Wooden Bridge and Causeway Road for residences along Clontarf Road and James Larkin Road. <p>For part 1 of the scheme, in conjunction with the above and the Masterplan improved walking and cycling</p>	<p>No further mitigation is required.</p>

Relevant Development	Implications	Further Mitigation
	<p>routes there are anticipated to be cumulative benefits to the population (as above).</p> <p>With regards part 2, the developments within the Masterplan, as identified in Section 9, should have minimal impacts on flood risk, provided consideration is given to flood risk management and coastal erosion as a result of potential hydrometric changes of reclamation, in the delivery of individual projects or developments. Cumulatively, these flood prevention schemes should further reduce risks of flooding.</p>	
<p>North City Arterial Watermain and Clontarf Flood Defences</p>	<p>New Water Pipeline from Fairview Park to Sutton and construction of flood defences along Clontarf Promenade.</p> <p>Flood defence works will be carried out affecting the entire area of Clontarf Promenade, an area of public open space with path and cycleways, amenity grassland and ornamental tree and shrub planting. The existing sea wall and the rock-armoured shoreline to the west near Alfie Byrne Road are the boundaries with the area subject to conservation designations.</p> <p>As identified above, there should be minimal cumulative effects if consideration is given to flood risk management and coastal erosion as a result of potential hydrometric changes of reclamation, in the delivery of individual projects or developments. Cumulatively, these flood prevention schemes should further reduce risks of flooding.</p>	<p>No further mitigation is required.</p>
<p>Coastal Protection (Final Phase) Dodder Flood Alleviation Works</p>	<p>Flood alleviation works in relation to the Dodder. As previously identified, cumulative effects should be minimal as these flood prevention schemes should further reduce risks of flooding.</p>	<p>No further mitigation is required.</p>
<p>Outfall Discharge Pipe for the Ringsend Wastewater Treatment Plant</p>	<p>Dublin City Council has conducted a major marine site investigation works in Dublin Bay to provide a detailed understanding of the sub-seabed. The works will assist the Council in determining the feasibility of constructing a tunnel to extend the existing effluent outfall to a point approximately 10 kilometres eastwards in Dublin Bay.</p> <p>As detailed in Section 10, if the proposed mitigation is implemented successfully, then it is expected to remove significant risks to the surface water environment from Masterplan developments. It is thought that cumulatively, there should be minimal risks to water quality and so to aquatic ecology.</p>	<p>No further mitigation is required.</p>
<p>Dublin Eastern Bypass</p>	<p>This project relates to the consideration of a route corridor which will connect the Dublin Port area to the M50 at Sandyford.</p> <p>Cumulative benefits are achievable when considering the bypass in conjunction with the Masterplan as the bypass could alleviate traffic particularly on roads to the east and southeast of Dublin, reducing congestion. In addition, when considering the Masterplan developments alongside the bypass, there is the potential for increased economic benefits to industry and increased business competitiveness through reduced travel times etc.</p> <p>Some adverse cumulative effects could occur to ecology particularly the Natura 2000 sites around</p>	<p>If the Eastern Bypass proposals are approved, then it will be important to consider what the implications would be for Dublin Port. It would be useful to provide a co-ordinated approach to traffic management to ensure that maximum benefits can be achieved whilst ensuring that minimal cumulative adverse effects to ecological, cultural heritage</p>

Relevant Development	Implications	Further Mitigation
	Dublin Bay and there could also be additional visual and noise issues for local communities. It could also further affect the setting of cultural heritage features around the port.	and visual aspects occurs.

20 Summary of Mitigation and Monitoring Proposals

20.1 Mitigation

20.1.1 Tables 20.1-20.11 outline the proposed mitigation measures outlined by the SEA Environmental Report regarding the possible environmental impacts of the Masterplan.

Table 20.1: Biodiversity- Flora and Fauna Commitments (C: Construction Stage O: Operational Stage)

No.	Stage	Biodiversity- Flora and Fauna Commitments	SEA Environmental Report
1	C	DPC will implement a programme of good construction management practices including, but not limited to, sediment control, suitable storage of hazardous materials, minimising surface water runoff and flow from sites, bunded refuelling areas, general housekeeping, exposed soil management and dust control.	8.2.7
2	C	The potential effects of pollution, disturbance and habitat modification as a result of capital or any increase in maintenance dredging will be mitigated by the development of a Dredging Mitigation Strategy. This document will address the potential effects of an increase in ship movements, sediment re-suspension, contaminated sediments, and potential for changes to the hydrodynamic regime.	8.2.8
3	C	DPC will commence an audit of flora and fauna of Dublin Port. It is envisaged that this audit may assist in informing the future Appropriate Assessment process for individual developments/projects.	8.2.9
4	C	DPC has developed a Strategic Natura Impact Statement for the Masterplan which identifies the principles/measures which will be addressed by DPC at a later stage should individual developments/projects be implemented.	8.2.10
5	C	Proposed relocation of the mooring structures (Dolphins), on which the breeding Tern colonies are located has been incorporated into the Masterplan.	8.2.11
6	C/O	Where habitat feeding areas or other useful features of the SPA will be lost, appropriate measures will be required by project-level Natura Impact Statement (which cannot be agreed at this Masterplan level, due to the uncertain nature of which options will be developed in the future). The provision of potential future compensatory / replacement areas must be equivalent in quality or otherwise greater in area than the original lost, and must benefit the <i>Natura 2000</i> network in a way which benefits the same populations	8.2.12

No.	Stage	Biodiversity- Flora and Fauna Commitments	SEA Environmental Report
		as would be affected by the lost area.	
7	O	As part of the Strategic Natura Impact Statement requirements, it is expected that the provision of potential future compensatory habitat or feeding areas must be provided and adequately established in advance of the loss, such that no net loss occurs and no net harm comes to the qualifying species. This same principle should be applied to all significant habitat loss identified in the future.	8.2.13
8	C/O	Future project studies to consider the phasing of development to minimise the scale of any habitat or wildlife community impacts, such that there is enough time in between developments for habitat to re-establish / mature, where appropriate.	8.2.14
9	C/O	With regard to the proposed construction and operational phases of future developments, these activities will be undertaken to take account of aspects such as breeding seasons, salmonid spawning etc to ensure that operations at sensitive locations are appropriately mitigated to minimise disturbance.	8.2.15
10	C/O	DPC shall consider working with relevant statutory and non-statutory stakeholders to create an Integrated Environmental Management Plan for the port area and environs. The Flora and Fauna audit will be developed as an element of this plan.	8.2.16
11	C/O	DPC shall seek net enhancements on individual projects, using applicable guidance. Consideration shall be given to the incorporation of enhancements such as planting of native tree and shrub species into future landscape design, inclusion of a wider range of habitat creation and enhancement options such as nest boxes and maximising the physical complexity of marine structures to maximise use by specific species i.e. provision of cored holes in quay walls for use by guillemots	8.2.17
12	C/O	DPC will review the requirement for fish surveys in areas where information is not extensive at present with the Inland Fisheries Ireland.	8.2.18

Table 20.2: Flood Risk

No.	Stage	Flood Risk Commitments	SEA Environmental Report
1	C	A detailed Flood Risk Assessment has not been carried out at this stage for the purposes of the Masterplan. However, individual projects will be subject to a Flood Risk Assessment at the planning application stage. These assessments will be developed in accordance with The Planning System and Flood Risk Management Guidelines for Planning Authorities November 2009, DoEHLG.	9.2.7
2	C	During the delivery of FRA's for individual projects, with particular regard to the proposed Dublin Gateway project (in the event of any significant deviations in design), consideration shall be given to the flood protection schemes initiated by Dublin City Council in Clontarf, Sandymount and Dollymount and Flood Risk Management Plans (FRMP) being developed for the Dublin and surrounding region.	9.2.8
3	C	The sustainable urban drainage principles outlined in the Greater Dublin Strategic Drainage Study will be implemented as relevant in future projects or developments.	9.2.9

Table 20.3: Water – Surface Water

No.	Stage	Surface Water Commitments	SEA Environmental Report
1	C	DPC will continue to develop within the requirements of the Eastern River Basin District Management Plan programme of measures, and these measures will inform the future development stages of the Masterplan Options.	10.2.5
2	C	Employment of good construction management practices including, but not limited to: pollution prevention and control, sediment management, suitable storage of hazardous materials, minimising surface water runoff and flow from sites, bunded refuelling areas, general housekeeping, exposed soil management and dust control.	10.2.6
3	C	The potential effects of pollution, disturbance as a result of capital dredging, or any increase in maintenance dredging, will be mitigated by the development of a Dredging Mitigation Strategy. This document will address the potential effects of an increase in ship movements, sediment re-suspension, contaminated sediments, and potential for changes to the hydrodynamic regime.	10.2.7
4	O/C	The requirement for and extent of surface water quality and	10.2.8

No.	Stage	Surface Water Commitments	SEA Environmental Report
		also discharge monitoring will be commensurate with the likely risk of adverse impact from a specific development on surface water bodies. Monitoring requirements will be reviewed and implemented in consultation with the relevant authorities.	
5	O	DPC shall consider working with relevant statutory and non-statutory stakeholders to create an Integrated Environmental Management Plan for the port area and environs which shall give appropriate consideration to ensure the on going protection of water quality (with particular regard to the Natura 2000 habitats) and associated species including fisheries.	10.2.9

Table 20.4: Water- Groundwater

No.	Stage	Groundwater Commitments	SEA Environmental Report
1	C/O	Specific DPC environmental surveys have determined that the groundwater within areas of the port estate has been impacted by historical industrial activities. The presence of hydrocarbon films and free phase product has been recorded in defined areas of the port estate. An integrated approach is currently being implemented within the estate with regard to managing and monitoring the removal of free phase product from the groundwater within these areas. It is envisaged that this initiative will continue to be implemented and will assist in informing the future Masterplan options.	11.2.4
2	C/O	It will be a requirement to carry out good construction and operational site management practices which will include, but not be limited to: pollution prevention and control, sediment management, suitable storage of hazardous materials, minimising surface water runoff and flow from sites, bunded refuelling areas, general housekeeping, exposed soil management and dust control. These practices will be assessed at a project specific level during development of individual Masterplan developments and with all future DPC activities being undertaken in accordance with the requirements of the company's accredited EMS.	11.2.5
3	C	The identification of areas and sites historically contaminated with free phase product from records held in the DPC GIS system prior to construction works, to prevent further mobilisation and contamination.	11.2.6

No.	Stage	Groundwater Commitments	SEA Environmental Report
4	O	Consideration is to be given to an Integrated Environmental Management Plan for the port area.	11.2.7

Table 20.5: Noise and Vibration

No.	Stage	Noise and Vibration Commitments	SEA Environmental Report
1	O	DPC will continue to liaise with residents with regards to any future complaints regarding nighttime noise emissions. Combined with this, DPC should consider the development of an Integrated Environmental Management Plan for the port Area which will address the aspect of noise emissions, and which will specifically consider and address the implications of increased throughput and how these increases influence operations on individual sites.	12.2.7
2	O	Individual planning applications and associated environmental assessments for future port developments should consider the cumulative increase in noise generated in the vicinity of receptors, including the influence of traffic.	12.2.8
3	C/O	As part of the Integrated Environmental Management Plan, DPC will review these assessments to ensure future projects are being managed in an appropriate way.	12.2.9
4	C	Also as part of the above, the need for construction mitigation should be considered, including limiting working hours and temporary noise barriers, as appropriate to the activity and potential receptors.	12.2.10
5	C	The DPC ISO14001 EMS facilitates the recording and management of external communications such as complaints regarding noise emissions. Complaints issued to DPC are logged and communicated to relevant DPC personnel and/or tenants by the DPC Public Relations Department.	12.2.11

Table 20.6: Air Quality and Climate

No.	Stage	Air Quality and Climate Commitments	SEA Environmental Report
1	C	Dust suppression measures shall be employed during construction such as, but not limited to: <ul style="list-style-type: none"> ▪ Any Stockpiles of dusty materials damped down using water sprays during dry weather; 	13.2.7

No.	Stage	Air Quality and Climate Commitments	SEA Environmental Report
		<ul style="list-style-type: none"> ▪ Access to the site will be from a single location. Roads shall be kept free of dust and cleaned as far as practicable; ▪ Routes will be regularly damped down using water bowsers during periods of dry weather as necessary; ▪ Appropriate speed limits will be established as necessary and enforced over all unmade surfaces; ▪ Wheel washing facilities will be installed as necessary and heavy vehicles leaving the site will be required to use the installations as appropriate. 	
2	C	The development of the Masterplan options presents the opportunity to increase the levels of rail transport in the transportation and delivery of freight to and from the port and also in the introduction and usage of container handling equipment which is electrically powered.	13.2.8
3	C	Air quality impact assessments shall be made during the future planning and development stages of the Masterplan Options. The local air quality measurements of NO ₂ and SO ₂ undertaken by DPC within the Port Estate together with air quality data from publicly available reports such as the EPA reports, will be used to assist in determining the air quality conditions within Dublin Port,	13.2.9
4	O	Traffic growth and levels of traffic resulting from the Masterplan must be managed effectively.	13.2.10

Table 20.7: Cultural Heritage – Archaeology and Architectural Heritage

No.	Stage	Cultural Heritage – Archaeology and Architectural Heritage Commitments	SEA Environmental Report
1	C	For archaeological heritage assets there are two possible approaches to mitigation: <ul style="list-style-type: none"> ▪ <i>Preservation in situ; or</i> ▪ <i>Preservation by record.</i> 	14.2.10
2	C	Preservation <i>in situ</i> may be achieved through detailed design of future developments to avoid physical impacts on archaeological heritage assets, enabling preservation in their current form and condition.	14.2.11
3	C	Where preservation in situ is not feasible, preservation by record is recommended to mitigate identified impacts. This methodology is in accordance with the principles and recommendations outlined in the ' <i>Framework and Principles for the Protection of the Archaeological Heritage</i> ' (DAHGI 1999, 25). Preservation by record consists of fully recorded investigations in the field, followed by analyses, reporting and publication. The information gained will be widely disseminated by a series of printed and internet publications for the benefit of scholars and the general public.	14.2.12
4	C	These works would require a licence from the National Monuments Service of the Department of Arts Heritage and the Gaeltacht, following the provisions of the National Monuments Act. In applying for the appropriate Licences, detailed method statements for the proposed works would need to be approved by the National Monuments Service, the National Museum of Ireland and agreed with the Dublin City Archaeologist.	14.2.13
5	C/O	Physical impacts on architectural heritage assets may be avoided through detailed design, to enable the preservation of assets in their existing condition. Impacts on the setting of architectural heritage assets may also be reduced or removed by detailed design through careful consideration of the scale, massing or prominence of new structures, sensitive choice of building materials, or the use of landscape planting to help integrate new structures into their setting or reduce their visual impact.	14.2.14
6	C	Where impacts on the fabric or setting of an architectural heritage asset cannot be avoided, a photographic and / or drawn record may be created to provide a permanent record of the structure in its current condition and setting. The findings of recording works should be fully reported and the resulting archive submitted to an appropriate depositary for future public reference.	14.2.15

No.	Stage	Cultural Heritage – Archaeology and Architectural Heritage Commitments	SEA Environmental Report
7	C/O	Opportunities for interpretation of cultural heritage assets within the proposed Public Amenities Area are also recommended for consideration during the detailed design stage. This area was the site of Pigeon House Fort and retains considerable evidence of its history and development, as is reflected in its designation as a Conservation Area, and the presence of heritage assets including a Recorded Monument, a number of Protected Structures, and assets recorded in the Dublin Inventory of Industrial Heritage.	14.2.16

Table 20.8: Landscape

No.	Stage	Landscape Commitments	SEA Environmental Report
1	C	Where possible, identify and use routes required for the delivery of construction materials which avoid residential areas. Where this may not be possible, use routes which either already are heavily trafficked by HGVs or which are in least proximity to the fewest views by residents.	15.2.10
2	C	DPC will consider the development of a Port Wide Landscape Plan relevant to the port estate and the Masterplan. Appropriate landscaping and arboricultural input will be commissioned for future landscape enhancement proposals.	15.2.10
3	O	Investigate the potential for use of emerging new technologies such as 'green walls' which involve the use of plant climbing systems.	15.2.10
4	C	Develop measures to accommodate for any deterioration in the setting of the River Liffey, North Bull Island and Dublin Bay resulting from future developments. Good quality urban landscaping is required to provide a transitional zone between neighbouring uses and the port.	15.2.10

Table 20.9: Population, Human Health & Deprivation

No.	Stage	Population, Human Health & Deprivation Commitments	SEA Environmental Report
1	C	Mitigation proposed to address potential adverse effects and enhance others is detailed within Section 12 (Noise) and 13 (Air Quality) in addition to that which is set out	16.2.8

No.	Stage	Population, Human Health & Deprivation Commitments	SEA Environmental Report
		below.	
2	C	Where possible, identify and use routes required for the delivery of construction materials which avoid residential areas. Where this may not be possible, use routes which either already are trafficked by HGVs or which are in least proximity to the fewest views by residents.	16.2.8
3	C	Incorporate measures to protect and enhance the health and safety of staff working at the port and visitors when planning for new development.	16.2.8

Table 20.10: Transport

No.	Stage	Transport Commitments	SEA Environmental Report
1	O	Additional improvements could be made to create more sustainable transport options for movement of freight to and from the port.	17.2.6
2	O	DPC will develop a Transport Management Plan for the Port Estate in conjunction with the National Transport Authority and Dublin City Council	17.2.6
3	C	Additional improvements in the provision of public transport routes to and from the port.	17.2.6
4	O	Measures to encourage car sharing for people working within the port.	17.2.6
5	O	Each planning application for future projects at the port will have to consider traffic growth at the time of the application. Any mitigation necessary will be agreed with Dublin City Council.	17.2.6
6	O	Review the potential for installation of a Dublin Bike Scheme Station within or in the immediate vicinity of the port area with improved cycle and footway links to the city centre.	17.2.6
7	C	Proposals will be implemented to provide suitable cycle and pedestrian access to the port while ensuring that there will also be sufficient cycle routes and parking facilities	17.2.6
8	O	As part of the Dublin Port Travel Plan, DPC shall give consideration to the appointment of a travel plan co-ordinator and steering group for the port estate which will include representatives such as port tenants and public transport providers	17.2.6
9	C/O	In addition to land-based transport movements, DPC will	17.2.6

No.	Stage	Transport Commitments	SEA Environmental Report
		liaise with other users of the port, such as owners/users of leisure and fishing/trawling vessels, in respect of the management of marine-based movements and the integration by DPC of the needs of these users with DPC's specific port functions, including those such as dredging.	

Table 20.11: Waste Management

No.	Stage	Waste Management Commitments	SEA Environmental Report
1	C	Review the current waste management plan in place for the port in order to assess how best to accommodate additional predicted waste outputs from the new developments.	18.2.4
2	C	Construction waste management plans will be developed for future developments and projects to ensure that as much suitable material (such as soil, stone etc) can be reused in other areas of the port estate, reducing waste disposed off site.	18.2.4
3	C	The DPC waste management strategy and future plans, using records from the DPC GIS system, will give appropriate consideration to the potential to encounter contaminated soil arisings during the development of future projects. Details including proposed handling/management of the arisings, interim storage requirements, proposals for reuse on site and/or disposal off site will be provided in the plans.	18.2.4

20.2 Monitoring Programme

20.2.1 The SEA Directive requires significant environmental effects (both beneficial and adverse) resulting from the implementation of plans and programmes are monitored to identify at an early stage any unforeseen effects. Monitoring is based on the indicators of each SEA Objective/Environmental aspect. The monitoring proposals for the Masterplan are presented below in Table 20.12.

20.2.2 The environmental targets and indicators outlined in the monitoring programme will be reviewed in line with reviews of the Masterplan.

Table 20.12: Monitoring Programme

Environmental Aspect	SEA Objectives	Indicators	Targets	Proposal	When should Remedial Action be considered?	What remedial Action should be Taken?	By Whom
Population / Human Health and Deprivation	To improve the strength of the Irish and Dublin City economy, whilst positively attracting business and allowing for the retention and expansion of existing businesses.	Throughput of cargo and passengers at DPC, measured in million tonnes / annum and passengers / annum'	Increase the level of efficient land use to assist Dublin Port in maintaining its key economic importance on a national and international basis.	Monitoring and analysis of DPC throughput and trade data.	Decline in throughput of cargo and passengers at DPC.	Review failing aspects of the Plan and make amendments.	Dublin Port Company
	To improve the accessibility of community amenities and facilities to local residents.	Numbers of amenities provided which have benefits for the local communities	Increase in the number of amenities and facilities available to local residents.	Individual development planning applications and associated environmental impact assessments will consider additional amenities and facilities.	No new planning applications for new amenities and facilities in vicinity of port.	Review failing aspects of the Plan and make amendments.	Dublin Port Company

Environmental Aspect	SEA Objectives	Indicators	Targets	Proposal	When should Remedial Action be considered?	What remedial Action should be Taken?	By Whom
Biodiversity – Flora and Fauna	Protect and enhance the biodiversity levels in general with particular regard for the nationally and internationally protected sites in vicinity of the port.	Reported conservation status of the designated areas. Number of species / species population numbers present within the designated areas.	Assist in achieving the conservation objectives of the internationally and nationally designated conservation sites.	Flora and Fauna surveys to monitor any changes in current conditions. Monitoring in requirements as identified in Section 7.0 of the Strategic Natura Impact Statement in Appendix C.	Declining number of flora and fauna in the vicinity of the port, particularly those within the designated sites.	Review of plan and proposal of mitigation measures to reverse decline. Make amendments to plan where required.	Dublin Port Company NPWS, Inland Fisheries
Flood Risk and Coastal Management	To enhance the management of flood risk and coastal erosion, whilst taking account of other flood protection developments in the vicinity of the port.	Increase in the number of areas reporting flooding incidents.	Contribute to the management of flood risk within the port estate and in the vicinity.	Flood Risk Management Plans (FRMPs) which encompass Dublin. Flood protection schemes, including Clontarf Flood Defence project, Dollymount Promenade and Flood Protection Project and Sandymount Promenade and Flood Protection Project Flood Risk Assessment at the planning application and environmental impact assessment stage.	If increased reporting of flooding incidents occur.	Review of Flood Risk Assessments and the Masterplan and make amendments to any areas which are failing. Propose mitigation measures where required.	Dublin Port Company, OPW, DCC

Environmental Aspect	SEA Objectives	Indicators	Targets	Proposal	When should Remedial Action be considered?	What remedial Action should be Taken?	By Whom
Water Quality (Surface and Ground)	To improve water quality of the surface and ground water bodies and support the achievement of the WFD objectives.	Number of designated waterbodies which are reported to be at risk of not achieving the WFD objectives.	Contribute to achieving the WFD objectives detailed in the programme of measures in the ERBD Management Plan.	Monthly programme of surface water drainage monitoring as part of the DPC Environmental Management System Water quality monitoring surveys	If there is reduction in water quality over a sustained period as identified through the monthly monitoring programme and water quality surveys.	Review of aspects of the plan which may be failing and propose mitigation measures to improve quality.	Dublin Port Company Eastern River Basin Management Plan (ERBMP) under the WFD.
	To reduce the rate of water usage at the port per unit of freight and passenger throughput.	Increase in mains water usage detected.	Significant contribution to the reduction in mains waters consumption within Dublin.	Mains Water District Branch Monitoring	In the event of no reduction in mains waters consumption or where an increase occurs.	Re-assess aspects of the Plan which may be failing.	Dublin Port Company
Noise	To improve the management of noise impacts and avoid any new significant noise impacts on people or the environment.	Increase in number of complaints relating to noise emissions from port activities and operations.	No significant increase in the impacts resulting from port generated noise emissions on sensitive receptors.	Monitor noise complaints logged with the DPC Public Relations Department. Noise monitoring within the Port Estate Individual developments, planning applications and associated environmental assessments to consider noise levels.	If there is a sustained increase in the number of noise emission complaints from port activities and operations.	Proposal of mitigation measures to reduce noise levels and re-assess the plan and make amendments where required.	Dublin Port Company

Environmental Aspect	SEA Objectives	Indicators	Targets	Proposal	When should Remedial Action be considered?	What remedial Action should be Taken?	By Whom
Air Quality	To avoid any significant air quality impacts on people or the environment.	Increases in the number of reported non-compliances with legislated Air Quality Standards.	Contribute to achieving compliance with legislated Air Quality Standards.	Monitor air quality surveys undertaken in Dublin City Individual developments, planning applications and associated environmental assessments to consider air quality.	Increases in pollutants monitored.	Re-assess the Plan and establish if any mitigation measures would be required.	EPA DCC Dublin Port Company
Climate Change	To improve the carbon performance of DPC activities and operations within the port.	Increases in the carbon footprint relating to DPC activities and operations.	To contribute to the reduction of greenhouse gases (carbon emissions) in Ireland.	Ongoing development and maintenance of carbon calculator assessment for DPC activities.	When the carbon calculator assessment indicates a rise in carbon emissions for DPC activities.	Identify through the carbon calculator the failing areas and make amendments to the Plan if necessary.	Dublin Port Company
Waste Management	To increase the rate of reuse and recycling at the port, and the amount of reused and recycled materials in construction against industry averages	Increases in the level of waste being directed to landfills.	Contribute to the achievement of the DCC Waste Management Plan objectives - to prevent waste generation with the options of waste minimisation, reuse and recycling being practised where waste generation cannot be avoided.	Monitoring of waste and recycling rates through the DPC Environmental Management System.	Where the DPC Environmental Management System indicates a decline in recycling rates and a corresponding rising waste to landfill.	Identify areas of the Plan which are failing and make amendments where required.	Dublin Port Company

Environmental Aspect	SEA Objectives	Indicators	Targets	Proposal	When should Remedial Action be considered?	What remedial Action should be Taken?	By Whom
Archaeological and Architectural Heritage	To enhance the conservation of archaeological/architectural heritage, and improve our understanding of this heritage, with particular regards to local maritime and industrial heritage	Increase in the risk of damage to identified archaeological/architectural heritages sites within the port.	Enhance the physical context of the identified archaeological/architectural heritages sites within the port	Desk based assessment, detailed design and preservation in situ/preservation by record of heritage sites during individual developments planning applications and associated environmental assessments.	Lack of preservation or recording of heritage sites during individual developments planning applications and associated environmental assessments.	Review EIA level assessments and consider if the Masterplan can be amended to improve / enhance cultural heritage assets.	Dublin Port Company
Landscape	To avoid significant negative impacts of existing and future port development on the landscape character of the area, and achieve benefits where possible.	Decrease in the quality of amenity/recreational areas in the vicinity of the port estate.	Contribute to the enhancement of views into and from the port estate.	Environmental enhancements proposals. Individual development planning applications and associated impact assessments.	If no enhancement in views into and from the port estate is noted. Individual development planning applications and associated impact assessments not sufficiently including for landscape enhancements.	Re-assessment of planning applications and review of Masterplan to identify if any areas are failing. Propose mitigation measures where required.	Dublin Port Company
Transport	To avoid significant negative impacts in terms of traffic levels accessing and exiting the port estate.	Increase in the level of intermodal transport options within the port estate.	Enhance the provision of a sustainable and integrated transport network within Dublin City.	Travel and Traffic Surveys at individual planning application level.	Where travel and traffic surveys at individual planning application level identify increasing traffic levels within the	Review of the Masterplan and identify potential failing areas. Propose mitigation measures to help reduce traffic levels.	Dublin Port Company

Environmental Aspect	SEA Objectives	Indicators	Targets	Proposal	When should Remedial Action be considered?	What remedial Action should be Taken?	By Whom
					port estate.		

20.3 EIA-Level Assessment Summary

- 20.3.1 Several of the assessments have identified mitigation to be undertaken as part of the project specific Environmental Impact Assessment (EIA) process. Details of these EIA-level actions are set out below.

Biodiversity

- 20.3.2 The Strategic Natura Impact Statement for the Masterplan identifies the principles/measures which will be addressed by DPC at a later stage should individual developments/projects be implemented.
- 20.3.3 Future individual developments / projects will consider the phasing of development to minimise the scale of any habitat or wildlife community impacts, such that there is sufficient time in between developments for habitat to re-establish or mature, where appropriate, and for the effects of permitted development to be monitored.
- 20.3.4 Consideration shall be given to the incorporation of enhancements such as the planting of native tree and shrub species into future landscape design, inclusion of a wider range of habitat creation and enhancement options (such as nest boxes) and maximising the physical complexity of marine structures to maximise use by specific species (e.g. provision of cored holes in quay walls for use by guillemots).

Flood Risk

- 20.3.5 In terms of flood risk, individual projects will be subject to a Flood Risk Assessment (FRA) at the planning application stage. During the delivery of FRAs for individual projects, consideration shall be given to the flood protection schemes initiated by Dublin City Council in Clontarf, Sandymount and Dollymount and Flood Risk Management Plans (FRMP) being developed for Dublin.
- 20.3.6 The sustainable urban drainage principles outlined in the Greater Dublin Strategic Drainage Study will be implemented as relevant in future projects or developments.

Noise and Vibration

- 20.3.7 Port developments should consider the cumulative increase in noise generated in the vicinity of receptors, including the influence of traffic.

Cultural Heritage

- 20.3.8 Physical impacts on architectural heritage assets may be avoided through detailed design, to enable the preservation of assets in their existing condition. Impacts on the setting of architectural heritage assets may also be reduced or removed by detailed design through careful consideration of the

scale, massing or prominence of new structures, sensitive choice of building materials, or the use of landscape planting to help integrate new structures into their setting or reduce their visual impact.

- 20.3.9 Opportunities for interpretation of cultural heritage assets within the proposed Public Amenities Area are recommended for consideration during the detailed design stage.

Transport

- 20.3.10 Each planning application for future projects at the port will have to consider traffic growth at the time of the application. Any mitigation necessary will be agreed with Dublin City Council.

Waste Management

- 20.3.11 Construction waste management plans will be developed for future developments and projects to ensure that as much suitable material (such as soil, stone etc) can be reused in other areas of the port estate, reducing waste disposed off site.

20.4 Next Steps

- 20.4.1 Future development of the Masterplan will take cognisance of the SEA Environmental Report, the Strategic Natura Impact Statement and the SEA Post-Adoption Statement.
- 20.4.2 Details on the proposed next steps are outlined in the Masterplan, Section 11. Within the Masterplan, there will be periodic detailed reviews (no later than every ten years) to ensure that the course being followed by the Port does not deviate from requirements. Dublin Port Company will take account of changing circumstances (particularly the level of demand for port infrastructure) in determining the actual timing of these reviews. The greater the level of change from the demand levels postulated in this plan, the earlier the review will occur.
- 20.4.3 Dublin Port Company will also liaise with Dublin City Council as it periodically updates its Development Plan to ensure that the Port Masterplan remains aligned with the wider development aspirations of the City.
- 20.4.4 In carrying out each such review, Dublin Port Company will consult with external stakeholders to ensure that the Masterplan continues to represent the best solution for future development of the Port, the City and the Bay.
- 20.4.5 Such reviews will also be undertaken in accordance with the relevant legal requirements including the requirements of the SEA, Habitats, Floods and EIA Directives.

21 Conclusion

21.1 Summary of the Assessment

21.1.1 Table 21.1 below summaries the assessment of the potential residual effects of the Masterplan on each environmental aspect. Full details of the assessments are found in Sections 8 - 18. Where multiple effects are predicted for an environmental aspect, the least favourable effect is presented in the summary table below.

Table 21.1: Summary of Residual Effects

Aspect	Short Term	Medium/Long Term
Biodiversity- Flora and Fauna	0	+
Flood Risk	0	0
Water-Surface Water	0	0
Water- Groundwater	0	0
Noise and Vibration	0	-
Air Quality and Climate	0	0
Archaeological Heritage	n/a	--
Architectural Heritage	-	-
Landscape	-	0
Population, Human Health & Deprivation	-	+
Transport	-	0
Waste Management	0	0

21.1.2 Short-term negligible effects are currently predicted for biodiversity, flood risk, surface water, groundwater, noise and vibration, air quality and climate and waste management. Minor adverse effects are predicted in the short term for architectural heritage, landscape, population, human health and deprivation and transport due primarily to construction activities. No short-term effects are anticipated for archaeological heritage.

21.1.3 In the medium to long term, negligible effects are predicted in relation to flood risk, surface water, groundwater, air quality and climate, landscape, transport and waste management. Moderate adverse effects are predicted for archaeology relating to the potential for partial or complete removal of unknown archaeological heritage remains due to dredging within the harbour or other construction activities.

21.1.4 Minor beneficial effects are expected in the medium to long term for biodiversity, due to boundary planting with native species and habitat enhancements. Minor beneficial effects are also expected for population, human health and deprivation as a result of improving accessibility of community facilities and facilities to local residents. The increased trade through the growth of the port and encouragement of tourism along with the potential for employment, educational and training opportunities is predicted to result in moderate beneficial effects.

21.2 Key Findings of the Strategic Natura Impact Statement

21.2.1 The Strategic Natura Impact Statement is presented as a strategic assessment of the potential adverse effects resulting from the engineering options within the Masterplan. The assessment provides the requirements that individual projects will need to meet to demonstrate beyond reasonable scientific doubt that they do not have implications for the integrity of the Natura 2000 sites or qualifying features in terms of their conservation objectives.

21.2.2 In line with AA guidance (DEHLG, 2011), all Natura 2000 sites within 15 km of the Masterplan area were identified initially. Eighteen such sites were identified, eight SACs and 10 SPAs, with an overlap of designations in some locations.

21.2.3 Initial screening eliminated 14 sites from further assessment. The remaining four Natura 2000 sites were:

- North Dublin Bay SAC;
- South Dublin Bay SAC;
- North Bull Island SPA; and
- South Dublin Bay & Tolka Estuary SPA.

21.2.4 Masterplan options have the potential to result in direct loss of habitat for designated bird species within the South Dublin Bay & Tolka Estuary SPA. This includes the loss of a mooring dolphin (used by breeding terns) and loss of intertidal habitat. No other direct habitat loss impacts were identified.

21.2.5 Potential impacts resulting from habitat modification, pollution or disturbance were identified.

21.2.6 Direct habitat loss and habitat modification were likely to occur as a result of two of the ten options. Nine options potentially resulted in pollution and/or disturbance impacts. None of the engineering options could be screened out as not having a potential significant effect.

21.2.7 An approach to mitigation for impacts resulting from the Masterplan has been laid out.

- 21.2.8 In general, disturbance and pollution impacts can be mitigated through best practice techniques and guidelines. However, additional information will be required to ensure that such practices and guidelines will be sufficient.
- 21.2.9 A Dredging Mitigation Strategy will be developed to address the impacts of the re-suspension of sediments, the presence of contaminated material, and the potential for habitat modification from capital and any increase in maintenance dredging. This will ensure that impacts on Natura 2000 sites are mitigated.
- 21.2.10 There is the potential for in-combination effects with other projects and plans. However, based on current information, for the majority of projects and plans assessed, there would be no significant in-combination effects with the Masterplan proposals.

21.3 Summary of Mitigation and Monitoring Recommendations

- 21.3.1 The SEA Draft Environmental Report proposed mitigation measures and monitoring requirements are outlined in Table 21.2.

Table 21.2: Summary of Mitigation and Monitoring Recommendations

Period	Aspect	Mitigation Recommendations	Monitoring Proposals
Construction and Operational Periods	Biodiversity	<ol style="list-style-type: none"> 1. Employment of good construction management practises. 2. Audit of flora and fauna in port area by DPC. 3. sNIS for the Masterplan which outlines the principles and measures to be addressed at a later stage and in the event of future projects progressing to the development stage. 4. Proposed mitigation to relocate the dolphins on which the breeding Tern colonies are located is incorporated into the Masterplan. 5. Development of project specific sNIS in the event of future individual project development. 6. Provision of potential future compensatory habitat or feeding areas must be provided and established in advance of any loss. 7. Future project studies to consider phasing of development to minimise impact on habitat or wildlife communities. 8. Consideration will be given to the development of an Integrated Environmental Management Plan with relevant stakeholders. 9. Where feasible, seek net enhancements on individual projects – native tree and shrub planting, nest boxes etc 10. DPC to review the requirement for fish surveys. 	<ol style="list-style-type: none"> 1. Flora and fauna surveys to monitor any changes in current conditions. 2. Monitoring requirements as identified in Section 7.0 of the sNIS in Appendix C.
	Flood Risk	<ol style="list-style-type: none"> 1. Individual projects will be subject to a Flood Risk Assessment (FRAs) at the planning application stage. 2. Consider DCC flood protection schemes during the delivery of any FRAs for individual projects. 3. The principles from sustainable urban drainage principles will be implemented as relevant in the future projects. 4. During the development of future projects, appropriate consideration will be given to flood protection schemes and Flood Risk Management Plans being developed in the area. 	<ol style="list-style-type: none"> 1. Monitored through FRA's and development of Flood Risk Management Plans.
	Water - Surface Water	<ol style="list-style-type: none"> 1. DPC will continue to operate within the requirements of the Eastern River Basin District Plan programme of measures and these measures will inform the future development stages of the Masterplan. 2. Employment of good construction management practises. 	<ol style="list-style-type: none"> 1. Programmes of surface water drainage monitoring by DPC. 2. Mains water district branch monitoring. 3. Water quality monitoring surveys as

Period	Aspect	Mitigation Recommendations	Monitoring Proposals
		3. Water quality monitoring during construction periods. 4. Consideration will be given to the development of an Integrated Environmental Management Plan.	part of the WFD by the ERBD
	Water - Ground Water	1. Employment of good construction management practises. 2. The identification of areas and sites historically contaminated with free phase product from records held in the DPC GIS system. 3. Consideration will be given to the development of an Integrated Environmental Management Plan.	
	Noise and Vibrations	1. DPC will continue to liaise with residents with regard to noise issues. 2. Consideration will be given to the development of an Integrated Environmental Management Plan. 3. Appropriate assessments of noise emissions and potential for cumulative impacts will be undertaken for individual planning applications. 4. Appropriate construction mitigation will be implemented.	1. Monitor and record noise complaints logged with DPC PR Department 2. Noise monitoring within the port estate 3. Environmental assessment for individual planning applications will consider noise emissions.
	Air Quality + Climate	1. Employment of good construction management practises. 2. Actively assess the potential for Increasing the levels of transportation of freight by rail. 3. Appropriate air quality impact assessments will be undertaken for relevant individual planning applications.	Ongoing development of the carbon calculator assessment for DPC activities.
	Cultural Heritage	1. Avoidance of impacts where possible in the detailed design phase of individual projects. 2. Appropriate landscape planting to assist in reducing visual impacts 3. Where impacts cannot be avoided, appropriate mitigation including preservation in situ or by records for archaeological heritage assets will be undertaken. 4. Where impacts cannot be avoided on architectural heritage assets, a photographic record of assets in their existing condition may be required. 5. Opportunities for interpretation of cultural heritage assets within proposed Public Amenity Areas.	Detailed desk based assessments and preservation by record / in situ/ photographs where impacts cannot be avoided.
	Landscape	1. Implementation of environmental enhancements /	Environmental enhancement proposals

Period	Aspect	Mitigation Recommendations	Monitoring Proposals
		boundary softening proposals as part of the Masterplan 2. Employment of good construction management practises to minimise visual impacts 3. Appropriate landscaping + arboricultural schemes will be implemented for future projects.	/ boundary softening
	Populations/ Human Health + Deprivation	1. Employment of good construction management practises to minimise impacts on local populations/communities.	1. Monitoring and analysis of DPC throughput and trade data 2. Individual planning applications and associated environmental impact assessments will consider amenities and facilities.
	Transport	1. Creation of more sustainable transport options for movement of freight to and from the port. 2. Improvements to public transport routes to and from the port. 3. Measures to encourage car sharing for people working within the port. 4. Future developments will give appropriate consideration to potential for traffic growth and implement mitigation as required and agreed with DCC. 5. Improved pedestrian and cycle access and facilities 6. Consideration will be given to the appointment of a Travel Plan Co-ordinator and Steering Group.	Travel and traffic surveys as relevant at individual project planning application level.
	Waste Management	1. Review current waste management strategy to identify how future waste management needs will be accommodated. 2. Development of construction waste management plans for future projects. 3. The DPC waste management strategy and future plans, using records from the DPC GIS system, will give appropriate consideration to the potential to encounter contaminated soil arisings during the development of future projects. Details including proposed handling/management of the arisings, interim storage requirements, proposals for reuse on site and/or disposal off site will be provided in the plans.	Monitoring of waste levels and recycling rates by DPC within the port estate.

Appendix A Review of Relevant Plans and Programmes - Tables

Table A: Outline review of relevant Plans and Programmes – International and Extending Beyond Europe

Aspect	International Plan /Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implication for the Masterplan
All	The Johannesburg Declaration of Sustainable Development	The principles of international commitment to sustainable development were reaffirmed, including to advance and strengthen the interdependent and mutually reinforcing pillars of sustainable development — economic development, social development and environmental protection — at the local, national, regional and global levels	The development of the SEA in conjunction with the Masterplan demonstrates how environmental protection and sustainable development decisions are being integrated into the Masterplan.
Marine Pollution	Marpol 73/78 : International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978	Marpol 73/78 is an international marine environmental convention which related to the minimisation of the pollution of seas. The convention aims to protect the marine environment through the elimination of pollution. The convention contains 6 annexes relating to the prevention of pollution from ships Ireland is a signatory to the Marpol convention.	The development of the SEA in conjunction with the Masterplan will identify measures which will avoid or minimise impacts on the marine environment where relevant to the Marpol Convention.
Biodiversity	Convention on Biological Diversity (CBD)	The Convention has three main goals: conservation of biological diversity; sustainable use of its components; and fair and equitable sharing of benefits arising from genetic resources.	The Appropriate Assessment (AA) process will inform the SEA and Masterplan processes. The AA will identify measures which could be implemented to benefit nature conservation and biodiversity levels in the area of the port estate.
	Ramsar Convention	This Convention is an intergovernmental agreement where the member countries have committed to maintaining the ecological character of their Wetlands of International Importance and to ensure sustainable use, of all of the wetlands in their territories.	The North Bull Island is a designated RAMSAR site. The AA identifies the potential for significant adverse impacts of Masterplan proposals on this designated site, and will inform the SEA and Masterplan/ accordingly. The Masterplan and SEA shall include a policy on the protection of biodiversity with particular recognition for The North Bull Island.
Climate Change	Kyoto Protocol	This intergovernmental agreement aims to reduce the emissions of 6 of the main greenhouse gases - carbon dioxide, methane, nitrous oxide, hydro fluorocarbons, per fluorocarbons, sulphur hexafluoride.	The SEA will the review potential options for reducing the level of greenhouse gas emissions and other air pollutants that may result from the future development of the Masterplan.
	UN Framework Convention on	Under this intergovernmental framework, governments aim to launch national strategies to reduce GHG's and also aim to gather and share	

Aspect	International Plan /Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implication for the Masterplan
	Climate Change	information on GHG emissions.	
Air Quality	World Health Organisation – Air Quality Guidelines + Guidelines for Europe	These guidelines relate to four of the main air pollutants (particulate matter, ozone, nitrogen dioxide and sulphur dioxide) and outline guidelines for the reduction of impact from air pollution on human health.	The SEA will review how the Masterplan can avoid or minimise potential impacts on air quality resulting from both the construction and operational phases of the Masterplan Options.
Noise Emissions	World Health Organisation – Guidelines on Community Noise	These guidelines outline objectives with regard to guideline values of noise emissions (environmental noise) in specific environments.	The SEA will give consideration to areas such as infrastructure development, equipment installation and transport with regard to minimising the emissions of noise resulting from the future development of the Masterplan.

Table B: Outline review of relevant Plans, Programmes and Legislation – European and Irish

Please note that related Irish legislation which transposes the European legislation is outlined in Italics where relevant in this table.

Aspect	European Plan / Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implications for the Masterplan
Port Related Environmental Policies	European Sea Ports Organisation (ESPO): Ecoports Environmental Review, 2009	This report is a periodic review produced by ESPO which relates to the environmental benchmark performance of member ports. Included in this report are details on a number of environmental initiatives which relate to the main environmental priorities (noise, air quality, biodiversity etc.) for the European Port Sector.	DPC operations are currently Ecoports P. Environmental Review System (PERS) and ISO14001:2004 accredited. The Masterplan and SEA will review the recommendations of this environmental review and will identify appropriate provisions in order to maintain the DPC Ecoports PERS certification in the event of the future development of the Masterplan.
	ESPO: Environmental Code of Practise, 2003-2004. (Note: Revised publication expected in 2011)	This Code aims to reiterate the port sector's commitment to contributing to sustainable development in terms of social, economic and environmental aspects. Included in this report are 10 objectives which the European port sector should aim to achieve. Guidelines are also included for the implementation of European legislation.	The Ecoports PERS system is designed to assist in the implementation of this Code of Practise. The Masterplan and SEA will review the recommendations of this Code of Practise and will identify provisions in order to maintain the DPC Ecoports PERS certification in the event of the future development of the Masterplan.
	ESPO: Code of Practise on the Birds and Habitats Directive, 2007	This document provides guidelines and recommendations regarding the implementation and management of the Birds and Habitats Directives. The document details recommendations with regard to the implementation of conservation measures and management of designated sites.	The Masterplan includes the development of a Natura Impact Statement (NIS) as part of the AA process. Appropriate consideration will be given to the guidance and recommendations in this document in the implementation of the AA process with particular consideration for proposed developments which may

Aspect	European Plan / Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implications for the Masterplan
		Recommendations with regard to the implementation and management of the Appropriate Assessment process are also included.	be located within conservation designated areas.
	ESPO: Code of Practise on Societal Integration of Ports, 2010	This report relates to recommendations regarding the societal integration of port and the public. The document outlines a number of societal integration practices which European port should aim to achieve/implement.	The Masterplan and SEA aim to increase the level of interface between Dublin Port and Dublin City. The DPC Masterplan will seek to address the recommendations in this report to assist in increasing the level of integration with the city and the public.
	Maritime Spatial Planning in the EU – Achievements and Future Development, December 2010	This paper identifies that MSP is commonly defined as “a process of public authorities of analysing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic and social objectives.” The paper highlights that the implementation in all Member States would enhance sustainable growth in the maritime sectors. The MSP process will assist in legal certainty + transparency for investors and operators. The paper makes reference to the need for planning “from land to sea” and states that terrestrial and marine plans/ strategies require coherence.	The details communicated in this paper will be taken into consideration where relevant.
	European Commission – Commission Staff Working Document – Integrating Biodiversity and Nature Protection into Port Development	This paper is addressed to stakeholders involved in port development. The paper highlights that capacity issues in ports should be planned “well ahead in time”. The paper makes reference to the 2011 EU Guidance on the Implementation of the Birds and Habitats Directive in Estuaries and Coastal Zones (2011). Additionally, the importance of sea ports is noted and the “need to integrate environmental concerns in their planning”.	The details communicated in this paper will be taken into consideration where relevant.
	OSPAR Convention	OSPAR “is the mechanism by which fifteen Governments of the western coasts and catchments of Europe, together with the European Community, cooperate to protect the marine environment of the North-East Atlantic.” The current convention results from the unification and updating in 1992, of the 1972 with the Oslo Convention against dumping at sea and the 1974 Paris Convention which covered land-based sources and the offshore industry. A new annex on biodiversity and ecosystems was also adopted in 1998 to cover non-polluting human activities that can adversely affect the sea.	The Masterplan and SEA will seek not to adversely impact the quality of the Celtic Sea waters (Region III). The SEA will take into consideration the strategic objectives of the OSPAR convention and will recommend mitigation which may be required as a result of potential adverse environmental impacts.

Aspect	European Plan / Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implications for the Masterplan
		OSPAR has a number of strategy objectives with regard to areas including biodiversity and ecosystems and the use of hazardous substances.	
	OSPAR: Quality Status Report 2010	<p>The OSPAR Convention has identified threats to the marine environment and has organised, across its maritime area, programmes and measures to ensure effective national action to combat them</p> <p>Ireland is classified in this report as Region III (Celtic Seas). In the Quality Status Report 2010, ongoing concerns for the Celtic Seas are identified. The report refers to elements such as seabed habitats, hazardous substances, fish stocks, biodiversity and marine spatial planning. The report outlines recommendations as to what should be done to improve the quality of the Celtic Seas.</p>	<p>The actions of this Quality Status Report will be taken into consideration where relevant.</p> <p>The Masterplan will seek not to adversely impact the quality of the Celtic Sea waters (Region III).</p>
Water (Surface and Ground)	<p>The Marine Strategy Framework Directive</p> <p>This Directive was due to be transposed into Irish legislation in December 2010 but has not occurred to date.</p>	<p>The objective of the EU's Marine Strategy Framework Directive (2008/56/EC) which was adopted in June 2008, is to protect more effectively the marine environment across Europe. The Directive aims to achieve good environmental status of the EU's marine waters by 2020. The Marine Strategy Framework Directive establishes European Marine Regions and each Member State are required to develop strategies for their marine waters.</p> <p>The goal of the Marine Strategy Framework Directive is in line with the objectives of the Water Framework Directive 2000.</p>	<p>The Masterplan and SEA will consider the potential impacts on marine waters resulting from the development of future engineering options.</p> <p>Appropriate mitigation will be identified and implemented as required in the event of any adverse impacts.</p>
	<p>EU Water Framework Directive (2000/60/EC)</p> <p>Water Framework Directive Regulations + Environmental Objectives (Surface Water) Regulations 2009</p>	<p>Overall the Directive and associated regulations aims to improve and maintain the quality of all surface waters and that all waterbodies achieve an overall good status by 2015.</p> <p>A programme of measures relating to achieving the required overall good status for waterbodies relevant to the port has been identified in the Eastern River Basin Management Plan (ERBMP) within whose region the Dublin Port estate is located. It is noted that this Plan outlines that the overall good status cannot be achieved in the ERBD waterbodies until 2027 due to the technical feasibility of implementing upstream measures such as upstream diffuse agricultural practices, septic tanks and urban diffuse pollution, future flood defences and upstream point source discharges.</p>	<p>DPC operations are currently undertaken in accordance with WFD requirements.</p> <p>All future development and associated works related to the Masterplan will also be developed to ensure compliance with WFD requirements. Appropriate mitigation will be identified and implemented as required in the event of any adverse impacts on surface/ground water quality.</p>
	Directive on the Assessment and Management of Flood	The aim of the Floods Directive is to reduce the adverse consequences of flooding on human health, the environment, cultural heritage and economic activity.	The Masterplan will undertake appropriate consultation with the required bodies with regard to the development of the FRMP for the Eastern River Basin

Aspect	European Plan / Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implications for the Masterplan
	Risks (Floods Directive) (2007/60/EC)	In accordance with the requirements of the EU Floods Directive (2007/60/EC), the Office of Public Works (OPW) is responsible for the development of Flood Risk Management Plans (FRMPs) across Ireland. Work on the FRMPs for the Eastern RBD is scheduled to commence in the Autumn/Winter of 2011. The objective of the FRMP is to identify and map the existing and potential future flood hazards and risks and to identify viable structural and non-structural flood risk management options and measures. In addition, each FRMP will be subject to the Strategic Environmental Assessment and Appropriate Assessment processes.	District and how the requirements of this plan may impact on future developments within the port estate.
	EU Protection of Groundwater against pollution and deterioration (2006/118/EC)+ Groundwater Directive (1980/68/EC) Environmental Objectives (Groundwater) Regulations 2010	The aim of the directive and associated regulations is to prevent and combat groundwater pollution. The provisions of the Directive include but is not limited to the following: Criteria for assessing the chemical status of groundwater; and Preventing and limiting indirect discharges (after percolation through soil or subsoil) of pollutants into groundwater. Groundwater quality standards relating to the protection of groundwater bodies against pollution and deterioration are outlined.	The SEA will address the requirement to protect local groundwater resources from potential adverse impacts resulting from the future development of the Masterplan.
	Bathing Water Directive (2006/7/EC) Bathing Water Regulations 2008	The main aim of this Directive and associated regulations is to preserve and protect bathing water quality and to protect human health.	In accordance with current DPC port operations, the SEA will identify measures being implemented to protect and to prevent any impact on bathing water quality resulting from port operations.
	The EU Shellfish Directive (79/923/EEC)	The aim of this Directive is to protect and improve shellfish waters in order to support shellfish life and growth. It is designed to protect and maintain the aquatic habitats of Shellfish including oysters, mussels, cockles, scallops and clams.	The SEA and shall identify any provisions required to minimise adverse impacts on water quality and shellfish life and growth.
	Directive on environmental quality standards in the field of water policy (2008/105/EC)	This Directive sets out environmental quality standards concerning the presence in surface water of particular pollutants and substances or groups of substances identified as priority as a result of the risk they pose to or via the aquatic environment.	The SEA will address the requirement and identify measures to protect surface water quality from future Masterplan developments.

Aspect	European Plan / Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implications for the Masterplan
	Dangerous Substances Directive (2006/11/EC – Codified Version) Dangerous Substance Regulations	This Directive aims to control discharges that are liable to contain dangerous substances and that are discharged to inland, coastal and territorial surface waters.	The SEA will address the requirement to identify measures to protect surface water from the discharge of dangerous substances resulting from the future Masterplan developments.
Waste Management	The Planning System + Flood Risk Management – Guidelines for Planning Authorities, 2009 Directive of the European Parliament and of the Council on Waste (2008/98/EC) and repealing certain directives Waste Management Acts 1990+2001 inc. relevant regulations	The purpose of this guidance is to assist in providing sufficient information to determine whether particular actions (such as zoning of land for development, approving application for a proposed development, the construction of flood protection scheme etc) are appropriate in terms of the potential for flood risk. The objectives of this Directive and national legislation are to protect the environment and human health through the prevention of the harmful effects of waste generation and waste management. The legislation provides for areas such licensing and permitting requirements, target waste reduction levels etc	The SEA and Masterplan will take these guidelines into consideration as relevant with particular regard in the SEA Draft Environmental Report and in the assessment of flood risk. The SEA and Masterplan will reflect the aim of these requirements with the primary objective to prevent the production of waste resulting from the construction and operation of future Masterplan developments.
Biodiversity	Action Plan for Biodiversity	This plan aims to conserve biodiversity and prevent biodiversity loss within the EU and internationally. In addition to the designation of the Natura 2000 sites, the Action Plan identifies other methods in which biodiversity and ecosystems can be conserved and with regards also to the EU marine environment.	The AA process will inform the SEA and Masterplan processes, and address potential impacts on European-level nature conservation sites. The SEA will consider any other potential biodiversity impacts, and make recommendations to avoid, reduce and compensate for any significant impacts identified. The NIS will identify measures which could be implemented to benefit nature conservation and biodiversity levels.

Aspect	European Plan / Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implications for the Masterplan
	<p>Directive on the conservation of natural habitats and of wild fauna and flora (92/43/EEC) – Habitats Directive</p> <p>Wildlife Act 1976 and Amendment Act 2000 inc. relevant regulations</p>	<p>The objectives of this Directive are to conserve designated natural habitats and species.</p> <p>The legislation relates to provisions for the protection and conservation of wild flora and fauna and outlines controls for certain activities with the potential to impact on wildlife.</p> <p>The Natural Habitat Regulations provide statutory protection for the designated conservation areas – NHAs, SPAs and SACs.</p>	<p>The AA process including the development of the NIS will address the likely impacts of the Masterplan on the Natura 2000 designated areas in the vicinity of the port.</p> <p>The NIS will include recommendations for mitigation to avoid impacts where possible and then minimise the potential for adverse impact on habitats and biodiversity levels where impacts cannot be avoided.</p> <p>The AA process will inform the SEA and the engineering options being considered as part of the Masterplan.</p>
	<p>Directive on the Conservation of Wild Birds – Birds Directive (2009/147/EC)</p>	<p>The objectives of this Directive are to “preserve, maintain or re-establish the biotopes and habitats of birds”.</p> <p>This Directive facilitates the designation of Special Protection Area (SPA’s) for endangered or migratory bird species.</p>	
	<p>Directive on Ambient Air Quality and Cleaner Air for Europe (2008/50/EC)</p> <p>Air Pollution Act 1987 inc. relevant regulations and amendments</p>	<p>The Directive and relevant national legislation resulted in the establishment of objectives with regard to air quality with the overall aim of reducing harmful effects on the environment and human health.</p>	
Air Quality and Climate	<p>Decision on the effort of Member States to reduce their greenhouse gas emissions. (Decision 406/2009/EC)</p>	<p>The EU committed to reduce its greenhouse gas emissions by 20% by 2020 in relation to their 1990 levels. Each Member State has an annual emissions quota. This Decision outlines that from 2013 and 2020, Member States’ emissions must be lower than their annual emissions quota.</p>	<p>The SEA will review potential options for reducing the level of greenhouse gas emissions and other air pollutants that may result from the development of future Masterplan Options.</p> <p>The requirement to comply with legislative requirements and associated air quality objectives will be taken into consideration during the development of the SEA and Masterplan.</p> <p>This will be addressed in areas such as the installation of energy-efficient equipment, provision of intermodal transport options into the port and energy-efficient infrastructural development (etc.).</p>
	<p>Council Decision of the of the Kyoto Protocol to the United Nations Framework Convention on Climate Change. (Decision 2008/358/EC)</p>	<p>This Decision relates to objectives that the EU committed to in reducing the levels emitted of the following greenhouse gases: carbon dioxide, methane, nitrous oxide, hydro fluorocarbons, per fluorocarbons, sulphur hexafluoride.</p>	
Noise Pollution	<p>Directive relating to the assessment and management of environmental noise (2002/49/EC)</p>	<p>The objective of this Directive is to control “noise perceived by people in built-up areas, in public parks or other quiet areas in an agglomeration, in quiet areas in open country, near schools, hospitals and other noise-sensitive buildings and areas”</p>	<p>The SEA will compare proposals against current levels of noise experienced, identify and recommend mitigation for any new significant impacts (as SEA applies to the Masterplan proposals specifically), and give careful consideration to the provision of</p>

Aspect	European Plan / Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implications for the Masterplan
	Directive relating to the noise emission in the environment by equipment for use outdoors (2000/14/EC)	This Directive aims to reduce the noise produced by equipment outdoors. The Directive aims to gather data on noise emission and to harmonise the noise emission standards.	infrastructure and equipment that will minimise the emissions of noise resulting from the development of the options being considered as part of the Masterplan.
Environmental Liability	Directive on environmental liability with regard to the prevention and remedying of environmental damage (2004/35/EC) – Environmental Liability Directive Environmental Liability Regulations 2008	The key objective of this Directive is the “polluter pays” principle and sets out a framework of liability to prevent and also remedy damage to the environment. Environmental liability relates to “environmental damage and imminent threat of damage resulting from occupational activities, where it is possible to establish a causal link between the damage and the activity in question”. Damage is that which occurs to the aquatic environment, natural habitats, species and the contamination of land.	A key aim of the development of the SEA will be to assist in the prevention of potential damage to the environment resulting from the implementation of the future development of the Masterplan.
Transport	EU Transport Strategy 2050	The European Commission has adopted a roadmap of 40 concrete initiatives for the next decade to build a competitive transport system that will increase mobility, remove major barriers in key areas and fuel growth and employment. At the same time, the proposals will dramatically reduce Europe's dependence on imported oil and cut carbon emissions in transport by 60% by 2050. By 2050, key goals will include: <ul style="list-style-type: none"> • No more conventionally-fuelled cars in cities. • 40% use of sustainable low carbon fuels in aviation; at least 40% cut in shipping emissions. • A 50% shift of medium distance intercity passenger and freight journeys from road to rail and waterborne transport. All of which will contribute to a 60% cut in transport emissions by the middle of the century.	The Masterplan will need to look at ways in which these key goals can be addressed going forward to 2050. In particular, the goal relating to at least a 40% cut in shipping emissions will require consideration. The SEA will give consideration to ways in which the Masterplan attempts to address these key goals.

Table C: Outline review of relevant Plans, Programmes and Legislation - National

Aspect	National / Regional / Local Plan / Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implications for the Masterplan
Planning Development	Planning and Development Act 2000 – inc. relevant Amendments and Regulations	The provisions of this Act and related regulations relate to the implementation of proper and sustainable planning.	This legislation will guide all future planning submissions resulting from the Masterplan.
	Environmental Impact Assessment Regulations 1989 inc subsequent Amendment Regulations	These relate to the transposing of The Environmental Impact Assessment Directive (85/337/EEC). These regulations identify requirements with regard to the requirements for EIA development for particular activities/projects.	This environmental impact assessment legislation will guide all future planning submissions resulting from the Masterplan.
	S.I. No. 200/2011 European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011	The purpose of these Regulations is to amend the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. No. 435 of 2004) and further transpose into Irish law the provisions of Directive 2001/42/EC of 27 June 2001 (O.J. No. L 197, 21 July 2001) on the assessment of the effects of certain plans and programmes on the environment — commonly known as the Strategic Environmental Assessment (SEA) Directive — insofar as the Directive relates to land use planning.	The SEA should be conducted in conjunction with these regulations whilst the Masterplan should adequately consider the findings of the SEA process for incorporation into the plan.
	S.I. No. 201/2011 — Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations 2011	The purpose of these Regulations is to amend the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. No. 436 of 2004) and further transpose into Irish law the provisions of Directive 2001/42/EC of 27 June 2001 (O.J. No. L 197, 21 July 2001) on the assessment of the effects of certain plans and programmes on the environment — commonly known as the Strategic Environmental Assessment (SEA) Directive — insofar as the Directive relates to land use planning. These amending regulations introduce changes for SEA relating to consideration of the likely significant effects on the environment of a development plan, a variation of a development plan, a local area plan (or an amendment thereto), regional planning guidelines or a planning scheme in respect of a Strategic Development Zone.	
	Regional Planning Guidelines for the	The Guidelines identify the need for an increase in capacity of port facilities at Dublin Port and that this requires to be achieved through	
		The Masterplan is reviewing the future enhanced development of DPC to assist in the future	

Aspect	National / Regional / Local Plan / Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implications for the Masterplan
	Greater Dublin Area 2010-2022	<p>either relocation or another equivalent option. This development will assist in the “future competitiveness of Irish Ports”.</p> <p>The Guidelines support the examination of the “expansion of Dublin Port and/or a new port facility”. All examinations are required to be undertaken in accordance with planning and environmental processes including the Appropriate Assessment process.</p> <p>The Guidelines also make reference to the requirement for examination of the future growth of Dublin Port in its strategic recommendation (PIR8).</p> <p>The Guidelines identify that areas for consideration during any potential port extension, will be the potential impact from the development on the Natura 2000 sites within Dublin Bay.</p>	<p>competitiveness of Irish Ports.</p> <p>All planning and environmental requirements including the Habitats Directive Appropriate Assessment process will be applied appropriately.</p>
	National Spatial Strategy 2002-2020	<p>This is a 20-year planning strategy for Ireland. The Strategy aims to progress growth and development in a balanced manner in Ireland.</p> <p>Of relevance to the Masterplan is that this Strategy does indicate that with regard to Dublin City, a key consideration of this Strategy will be to facilitate the national roles of Dublin Port and also to improve European and international competitiveness by providing good international access through Dublin Port.</p> <p>The strategy refers to the shortage of capacity at Dublin Port and indicates that to facilitate that extra capacity, alternative locations for future Dublin Port activities may need to be considered.</p>	<p>The Masterplan currently relates to facilitating extra capacity at Dublin Port.</p> <p>It is considered that the Masterplan will identify engineering options which will ensure that Dublin Port can continue to provide and also improve access to European and international markets.</p>
	National Development Plan 2007-2013	<p>The NDP aims for protection of the environment, sustainable growth and the integration of strategic development frameworks for both regional and rural development in Ireland. The Plan outlines proposed investments for the Dublin region in a number of areas including transport infrastructure, tourism facilities, environmental services, social and amenity facilities and also to undertake a study of the role of Dublin Port in terms of overall ports policy in Ireland.</p> <p>The NDP identifies that the countries seaports are “vital transport arteries” in terms of facilitating international access to Ireland.</p>	<p>The Masterplan will identify proposed engineering options which will enhance continued development of the port estate and improve continued international access into the Dublin Region.</p> <p>The Masterplan will aim to seek opportunities to develop sectors such as tourism and social and amenity facilities where relevant to the port estate and port operations.</p>
	Dublin City Development Plan 2011-2017	<p>The development plan is drafted in accordance with the requirements of the Planning and Development Act. The Plan outlines a framework and strategies for sustainable development which aims to improve the quality of life for people in Dublin.</p> <p>The Plan recognises the “important national and regional role of</p>	<p>The Masterplan will identify and develop options which will seek to compliment the DCC Development Plan objectives for the port.</p>

Aspect	National / Regional / Local Plan / Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implications for the Masterplan
		<p>Dublin Port in the economic life of the city and the region”</p> <p>The Plan identifies that Dublin Port will have a:</p> <p>significant role to play in the future development and growth of the city and it is considered prudent to plan the structure of this part of the city, including the proposed public transport network, to fully integrate with the developing new city structure and character, while having regard to the Dublin City Council Study, “Dublin Bay, An Integrated Economic Cultural and Social Vision for Sustainable Development (2007)”.</p> <p>The Plan outlines a number of objectives which directly and indirectly relate to port activities. Among those included are the following:</p> <p>SI19: With regard to the proposed Eastern Bypass, the DCC objective is to support the provision of a link between North Dublin Port and Southern Cross/ South Eastern Motorway; and</p> <p>REO16: To examine the feasibility of a cruise terminal in the Poolbeg Area and Dublin Port.</p> <p>The Plan also has included the port estate under the land use zoning objective Z7, “which relates to the protection and creation of industrial uses and facilitate opportunities for employment creation”.</p>	
	East Wall Local Area Plan	The Local Area Plan for the East Wall area aims to co-ordinate/identify projects/programmes which aim to improve the quality of life for the local communities.	The Masterplan and SEA recognise the importance of minimising any impacts on surrounding communities.
	The South Bank – Strategic Development Framework 2002	<p>The key aim of this plan was to identify a development framework and objectives for the South Bank Road Environs.</p> <p>The Framework outlined a number of development objectives for the South Bank Area which ranged from the development of a major wildlife and nature resource within the area to the development of mixed use and residential units to provide a primary employment function but also with amenity areas.</p> <p>An emphasis is placed on implementing appropriate urban design and sustainable development principles during future development of the South Bank area.</p>	With regard to the South Bank area, the principles of sustainable development will be considered within the Masterplan and SEA.
	Draft Poolbeg Planning Scheme - 2008	The Scheme identifies four zones within the South Bank area which would combine residential and commercial uses. The Scheme outlines provision for the development of existing buildings such as the Pigeon House Power Station into areas for heritage, arts and	The SEA and Masterplan will aim to integrate Masterplan proposals with those of the evolving Poolbeg Scheme where feasible and sustainable. The SEA and Masterplan will need to keep abreast of any

Aspect	National / Regional / Local Plan / Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implications for the Masterplan
		<p>cultural development points.</p> <p>Included in the vision for the Poolbeg Scheme is to “provide for commercial, residential, cultural and amenity uses, whilst balancing the essential industrial and infrastructural requirements of the area.”</p>	<p>changes to the Scheme as it develops.</p>
	<p>Dublin Docklands Area Masterplan 2008</p>	<p>The South Bank Area of the port estate lies within the boundaries of the Dublin Dockland Development Authority (DDDA).</p> <p>The Masterplan identifies a number of policies in areas such as land use, transport, economic development and urban design. Included in the Plan are Policies ED7 and ED31-37 which refer to the continued relationship and collaboration between the DDDA and DPC with regard to the development of the port and docklands area.</p> <p>The Masterplan also identifies the potential for priority cycle routes and priority pedestrian networks located within the South Bank Area of the port.</p>	<p>The Masterplan and SEA will aim to develop their document policies to compliment those outlined by the DDDA, where relevant to port development and activities.</p>
	<p>Dublin Bay – An Integrated, Economic and Cultural and Social Vision for Sustainable Development – Dublin City Council - 2007</p>	<p>This report is the first stage in the development of a strategic framework for the development of the Dublin Bay and Dublin Port area.</p> <p>With regard to Dublin Port, one of the drivers for this study was to ensure the continued development of the port, which was a recognised resource in terms of the national and regional economy.</p> <p>This report reviewed a number of options including relocation of the port from its location and continued development of the port in conjunction with the city development.</p>	<p>The Masterplan and SEA relate to the continued and enhanced development of the port estate in its current location.</p> <p>The Masterplan and SEA will incorporate sustainable development decisions and environmental considerations into their future development proposals.</p>
	<p>The North Lotts Planning Scheme, 2002</p>	<p>The Dublin Dockland Development Authority developed a planning scheme for the North Lotts area which was approved in 1992.</p> <p>The Docklands North Lotts area comprises the area bounded by the Campshires on North Wall Quay and Guild Street and extends to the city centre line of the River Liffey.</p>	<p>The Masterplan and SEA will give consideration to the proposals outlined in the North Lotts Planning Scheme.</p>
	<p>The Grand Canal Dock Planning Scheme</p>	<p>The Dublin Dockland Development Authority developed a planning scheme for the Grand Canal Dock in 2000</p> <p>The aim of the scheme was to establish the nature and extent of development appropriate to the area.</p>	<p>The Masterplan and SEA will give consideration to the proposals outlined in the Grand Canal Dock Planning Scheme.</p>

Aspect	National / Regional / Local Plan / Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implications for the Masterplan
General	Environmental Protection Agency Act 1992	The objectives of this Act relate to the control of polluting substances through monitoring and licensing.	The development of the SEA will inform the Masterplan in terms of potential licensing and monitoring requirements for the future options being considered.
	Protection of the Environment Act 2003	This Act transposes the Integrated Pollution Prevention and Control European Directive.	
	Ports Policy Statement – 2005- Department of Communications, Marine and Natural Resources	<p>This policy document was developed by the Department of Communications, Marine and Natural Resources. The document identifies that the port sector is required to provide suitable onward connections from sea to either or rail or road connections.</p> <p>The report outlines that a shortfall of 12.2 million tonnes in seaport capacity is expected over the next 10 years from 2005 when the report was developed. The report states that a policy framework is required to identify, fund and progress any new capacity additions as soon as possible.</p>	The Masterplan seeks to enhance and improve the capacity of the port facilities so as to facilitate future economic growth and address the potential shortfall in capacity within the port estate.
	Dublin Port National Development Plan Study – Department of Transport July 2009	<p>The scope of this study was to review the role of Dublin Port and its future.</p> <p>Included in the study was a review of the costs and benefits a number of the scenarios outlined below:</p> <ol style="list-style-type: none"> 1. Relocating all or part of Dublin Port’s existing activities to an alternative location(s); 2. Existing port activities continuing to expand with demand; and 3. Port activities continuing at current levels with growth being catered for at alternative location(s). <p>The report identifies a number of conclusions and among them are the following:</p> <p>There is potential to improve the capacity utilisation of ports in Ireland and this should be pursued as a priority;</p> <p>Both Dublin Ports’ proposed 21h development and the development of new port capacity such as the proposed Bremore Port would have positive net present values;</p> <p>Nothing should be done at a policy level to block either the proposed expansion of Dublin Port or the proposed development of Bremore at</p>	The Masterplan is reviewing options relating to the continued development of the Dublin Port in its current location. The Masterplan seeks to enhance and improve the capacity of the port facilities so as to facilitate future economic growth.

Aspect	National / Regional / Local Plan / Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implications for the Masterplan
		this stage	
Water – Surface and Groundwater	Water Pollution Acts 1997+1990 inc. relevant regulations	There is a general objective that a “person shall not cause or permit any polluting matter to enter waters”. This legislation also outlines requirements with regard to areas such the licensing of trade and sewage effluents by the relevant Local Authority and the notification of accidental discharges etc.	In accordance with current DPC operations, the Masterplan and SEA will also implement measures which will protect waters and prevent polluting matter to enter waters. The SEA will also inform the Masterplan in terms of potential requirements for licensing of trade and sewage effluents by the Local Authority.
	Water Services Act 2007 inc. relevant regulations –	The objectives of this legislation generally relate to appropriate planning and delivery of water services on both a national and local level. Some of the main provision relate to requirements with regard to metering, installation of connections and infrastructure.	The Masterplan will address the issue of delivery of water services to the proposed developments in accordance with Local Authority requirements.
	The Fisheries Act 1959-1997	This legislation identifies responsibility for fisheries and also identifies provisions for the development and protection of fisheries.	The SEA process will identify any potential significant impacts on fisheries resources, and identify measures to minimise any significant adverse impacts. These assessments will inform the Masterplan process.
	Marine Dumping at Sea Act 1996-2006	The objectives of this legislation relate to the protection of the marine environment with regard to proposed dumping at sea activities. There are restrictions with regards dumping at sea activities which includes dredged materials and outlines licensing/permitting requirements with regard to these activities.	It is envisaged that capital and maintenance dredging will be required as part of the Masterplan future development. All dredging and any subsequent dumping at sea requirements resulting from the Masterplan development will be undertaken in accordance with license/permitting requirements.
	Foreshore Acts 1933-1998 + Inland Fisheries Act 2010 inc. regulations	The primary requirement of this legislation is the requirement for a Foreshore Licences to be in place (which is granted by the Department of Environment Heritage and Local Government) prior to commencing any works on the foreshore. The term foreshore is defined as “the bed and shore, below the line of high water of ordinary or medium tides, of the sea and of every tidal river and tidal estuary and of every channel, creek, and bay of the sea or of any such river or estuary”.	The SEA will inform the Masterplan in terms of the potential requirements to obtain a Foreshore Licence prior to commencement of future development works. Any licensing requirements will be adhered too.
	Eastern River Basin District (ERBD) Plan	This report relates to the Water Framework Directive and documents programmes of measures detailing how the WFD objectives will be achieved. Among the objectives of the WFD is the requirement that all water bodies achieve overall good status by 2015.	DPC operations are currently undertaken in accordance with WFD requirements. All future development and associated works related to the Masterplan will be developed in accordance with

Aspect	National / Regional / Local Plan / Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implications for the Masterplan
		However, this Plan outlines that the overall good status cannot be achieved in the ERBD waterbodies until 2027 due to the technical feasibility of implementing measures for upstream diffuse agricultural practices, septic tanks and urban diffuse pollution, future flood defences and upstream point source discharges.	ERBD programme of measures. Appropriate mitigation will be identified and implemented as required in the event of any potential adverse impacts on surface water quality.
	Catchment Flood Risk Management Plans – Eastern Catchment	The Flood Risk Management Plan (FRMP) for the Eastern Catchment has commenced since June 2011. The aim of these catchment studies is to identify and map the existing and potential future flood hazard and risk areas within the relevant catchment and identify measures in relation to managing flood risk.	The Masterplan will undertake consultation with the required bodies with regard to the development of the FRMP for the Eastern River Basin District and how the requirements of this plan may impact on future developments within the port estate.
	Dublin Flood Resilient City - Ongoing	The Dublin Flood Resilient City Project currently underway by Dublin City Council (in partnership with other EU cities). DCC, as part of their Dublin Flood Initiative are developing a Flood Risk Management Strategy. This strategy will include the development of new Codes of Practice with regards spatial planning and corrective/adaptive flood measures.	The Masterplan will undertake appropriate consultation with regard to the Flood Risk Management Strategy and review how the requirements of this Strategy may impact on future developments within the port estate.
	River Dodder Flood Risk Assessment and Management	The objective of this plan is to produce a number of flood hazard and risk maps for the River Dodder. Based on these options for potential flood management will be identified taking into account current and future land development plans.	The Masterplan will undertake appropriate consultation with regard to the River Dodder Flood Risk Assessment and review how the requirements of this Assessment may impact on future developments within the port estate
	FEMFRAMS: Fingal East Meath Flood Risk Assessment and Management	The FEMFRAMS project is a flood risk assessment and management study in Fingal and East Meath areas. The study is reviewing areas where historical flooding has occurred and areas which may be susceptible to flood events. The aim of the study is to identify a programme of works/actions to assist in the appropriate management of these flood risks.	The Masterplan will undertake appropriate consultation with regard to the FEMFRAMS study and review how the requirements of this assessment may impact on future developments within the port estate
	The Greater Dublin Strategic Drainage Study	This document outlines policies with regard to the provision and management of drainage services in the Greater Dublin Area. This study also aims at supporting the Sustainable Drainage Systems (SuDS) requirements for drainage systems.	The Masterplan shall give appropriate consideration to the implementation of the policies of this study where relevant. The requirements will relate to procedures for drainage aspects of future developments and also requirements with regard to the materials and construction methods employed in installing the drainage systems. This will assist in minimising any adverse impact in the quality of surface, ground, estuarine and coastal waters.

Aspect	National / Regional / Local Plan / Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implications for the Masterplan
Waste Management	Dublin City Council Waste Management Plan 2005-2010	This waste management plan has been developed jointly by the four Dublin Local Authorities. The main aim of the strategy is to prevent waste generation and if this is not possible, the emphasis is placed on minimisation, reuse, recycling and recovery of energy. The plan aims for waste recycling levels of up to 59% for the Dublin Region.	The objectives of the Waste Management Plan will be taken into account during the development of the Masterplan with particular regard for the prevention of waste generation where possible.
Biodiversity	Dublin City Biodiversity Plan 2008-2012 – Dublin City Council	This Plan outlines a range of strategic actions and responsible bodies with regard to the protection and improvement of biodiversity in Dublin. The Plan refers to the development of Management Plans for the Dublin Bay area and the Irishtown Nature Park. In addition, specific actions are identified with regard to the management and enhancement of designated areas and flora and faunal species identified in the vicinity of the port estate.	The Masterplan shall include a policy on the protection of biodiversity and appropriate enhancement measures. The Masterplan and SEA will aim to minimise any potential adverse impacts on biodiversity resulting from future developments. The SEA will examine the potential for implementing measures to benefit and enhance biodiversity under the Masterplan.
	A Management Plan for North Bull Island, 2009, Dublin City Council	A number of recommendations with regard to the management of the North Bull Island were developed as part of this Plan. These are related to the continued and additional management controls, consultation and research.	The Masterplan and SEA shall include an objective on the protection of biodiversity with particular recognition of the internationally recognised site, North Bull Island.
	Ireland's National Biodiversity Plan	Ireland's National Biodiversity Plan outlines approximately 90 actions which are aimed at "halting the continuing loss of plant species as well as the vegetation and habitats they compose" by 2010. (This plan is currently being revised and updated.)	The Masterplan and SEA will aim to minimise any potential adverse impacts on biodiversity resulting from future developments. The SEA will examine the potential for implementing measures to benefit and enhance biodiversity under the Masterplan.
Cultural Heritage	National Monuments Act 1930 to 2004	This legislation is the framework for protection of nationally protected monuments through the designation of a preservation order, ownership by the Government or Local Authority and/ or identification in the Register of Historic Monuments and/ or Records of Monuments and Places.	The Masterplan will aim to minimise potential impacts on any nationally protected monuments. The SEA shall include an objective to reflect this. Any works required in relation to protected monuments will be undertaken in accordance with legal requirements.
Sustainable Development / Energy	Sustainable Development- A Strategy for Ireland	The document proposes the implementation of a more systematic framework to ensure the future sustainable development in Ireland.	The SEA will consider the potential for significant adverse impacts in the areas addressed by this Strategy.

Aspect	National / Regional / Local Plan / Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implications for the Masterplan
	1997 / Making Ireland Development Sustainable 2002	This strategy makes reference to a number of the legal frameworks which are relevant to the marine sector. Objectives are identified in terms of environmental protection and relating to areas such as marine biodiversity, water quality, coastal zone management and waste management.	The SEA will also identify suitable measures to minimise any potential impacts resulting from the future development of the Masterplan.
	Dublin City Sustainable Energy Action Plan 2010-2020	This plan reviews Dublin City's current energy use and carbon dioxide emissions and identifies means by which the city can reduce its overall energy consumption. The report reviews the future introduction of carbon neutral, low-energy consumption buildings and low-carbon public transport options.	The SEA will address sustainable energy usage options during the development of the Masterplan. The Masterplan and SEA will implement measures which will minimise energy consumption resulting from future port developments.
	EC (Energy Performance of Buildings) Regulations 2005-2006	This legislation contains objectives/requirements with regard to the energy performance of buildings.	The requirements of this legislation will be taken into account in the development of future buildings related to the Masterplan.
	Offshore Renewable Energy Development Plan OREDP (Department of Energy, Communications and Natural Resources)	This Plan and SEA address the plan for the development of offshore renewable energy off the coast of Ireland. An EU legally binding target of achieving a 20% of renewable energy sources for energy consumption in Ireland is set for the year 2020. This OREDP plan will review the potential for implementation of offshore renewable energy sources up to 2020. Areas such as technology, geographical scope, required infrastructure and economic requirements are addressed in the Plan.	The Masterplan will recognise the potential role of Dublin Port in facilitating the development and operation of potential future offshore development projects.
Transport	HGV Management Strategy	The Dublin City Council HGV Management Strategy was introduced on the 19 February 2007. The HGV Strategy provides for a ban on 5+ axle vehicles during the hours of 07.00-19.00 seven days a week from a designated cordon area and provides a limited permit scheme for 5+ axle vehicles that need to load/unload within the city centre area. In addition, as the HGV cordon is a closed cordon around the port area, Dublin City Council operates an Eastlink Rebate Scheme for affected vehicles.	The Masterplan needs to recognise the ban on 5+ axle vehicles during the hours of 07.00 and 19.00 seven days a week when considering new developments within the port. The SEA should seek to identify where there is the potential for increased HGV traffic and provide mitigation where required.
	Greater Dublin Area draft Transport Strategy 2030	The Strategy objectives can be grouped into economic, social and environmental categories. The Strategy aims to meet: <u>Economic objectives:</u> by reducing delays and improving journey time reliability, particularly for business travel and the movement of goods,	The objectives of the draft Transport Strategy need to be considered in the Masterplan. Growth of the port is likely to result in increased traffic in and around the port estate. In particular, the Masterplan should consider the freight policies within the Strategy during its

Aspect	National / Regional / Local Plan / Programme	Summary of Objectives and Requirements relevant to the Masterplan	Implications for the Masterplan
		<p>and by improving access to and within town centres;</p> <p><u>Social objectives:</u> by improving safety, reducing travel related stress and reducing the adverse impacts of traffic on neighbourhoods and centres whilst enabling all sectors of society to travel to the destinations they need to reach; and</p> <p><u>Environmental objectives:</u> by giving priority to those means of travel that are less damaging to our natural and built environment.</p>	<p>development. The SEA needs to assess if the Masterplan adequately considers ways in which to address the anticipated rise in traffic levels in and around the port.</p>

Table D: Outline review of relevant project developments in the vicinity of the port estate.

Proposed Project	Overview of Project	Implications for the Masterplan
The Dublin Waste to Energy Facility	<p>The EPA has issued a licence to DCC to operate a non hazardous waste to energy facility.</p> <p>The proposed Dublin Waste to Energy (DWtE) facility will be located on the Poolbeg Peninsula in Dublin. The majority of the Site is located south of Pigeon House Road and is rectangular in shape measuring circa 160 m x 340 m, covering an area of approximately 5.5 hectares (13.6 acres).</p> <p>In addition, the DWTE facility requires the construction of a cooling water intake on the South Bank Quay in the location of the currently proposed bridge across the cooling water channel (Refer to Drawing 321010900/MP1/2 Rev1). The cooling water Intake consists of an inlet pipe taking in water from the River Liffey. The inlet pipe will feed into a Cooling Water Pumphouse which would be located adjacent to the current Ecochem site access road. The Pumphouse will deliver the cooling water to the DWtE facility via an aboveground pipe which would be bridged over the Pigeon House Road via a gantry.</p>	<p>The construction of the DWTE facility has not commenced to date.</p> <p>This facility has indicated that it will not have an impact on the surrounding Natura 2000 designated sites.</p> <p>Should construction schedules for the DWTE facility and DPC developments coincide, this may result in implications in terms of the management of environmental issues with particular regard for potential traffic management issues, surface water quality management at the cooling water channel area etc.</p> <p>The potential cumulative impacts of developing this project in combination with Masterplan proposals will be considered in the SEA Draft Environmental Report.</p>
Sutton to Sandycove S2S Project	<p>The total length of the proposed promenade and cycleway will be approximately 22 kilometres in length from Sutton to Sandycove. The scheme proposes to upgrade and join up various existing sections of the promenade and cycleway to form a continuous route along the seafront of Dublin Bay.</p>	<p>The SEA and Masterplan will give appropriate consideration to these works proposals to confirm if they have any likely impacts on the implementation of the Masterplan.</p> <p>Any potential for cumulative impacts will be assessed in the SEA Draft Environmental Report. Cumulative impacts will consider but will not be limited to aspects such as potential impacts on the Natura 2000 designated sites, surface water quality etc.</p>
S2S - Dollymount Promenade and Flood Protection Project	<p>The Dollymount Promenade and Flood Protection Project (DPFPP) is a dual purpose scheme:</p>	<p>The Masterplan proposals will identify suitable measures to ensure that the proposed flood defence measures of this project are not adversely impacted by the Masterplan engineering</p>

Proposed Project	Overview of Project	Implications for the Masterplan
	<p>1. Provide promenade and cycleway connecting existing sections to complete 8 km promenade and cycleway in North Dublin Bay and contribute to the overall aim of providing 22 km in Dublin Bay.</p> <p>2. Provide flood defence between the Wooden Bridge and Causeway Road for residences along Clontarf Road and James Larkin Road.</p>	<p>options.</p> <p>Any potential for cumulative impacts will be considered in the SEA Draft Environmental Report.</p>
<p>North City Arterial Watermain and Clontarf Flood Defences</p>	<p>The New Water Pipeline from Fairview Park to Sutton and construction of flood defences along Clontarf Promenade, Dublin 3 was approved with conditions in 2008. Construction is due to commence in 2011.</p> <p>Flood defence works will be carried out affecting the entire area of Clontarf Promenade, an area of public open space with path and cycleways, amenity grassland and ornamental tree and shrub planting. The existing sea wall and the rock-armoured shoreline to the west near Alfie Byrne Road are the boundaries with the area subject to conservation designations.</p>	<p>The SEA and Masterplan will give appropriate consideration to these works proposals to confirm if they have any likely impacts on the implementation of the Masterplan.</p> <p>Any potential for cumulative impacts will be assessed in the SEA Draft Environmental Report. Cumulative impacts will consider but will not be limited to aspects such as potential impacts on the Natura 2000 designated sites, surface water quality etc.</p>
<p>Coastal Protection (Final Phase) Dodder Flood Alleviation Works</p>	<p>Flood alleviation works in relation to the Dodder</p>	<p>The SEA and Masterplan will give appropriate consideration to these works proposals to confirm if they have any likely impacts on the future development of the Masterplan.</p> <p>Any potential for cumulative impacts will be assessed in the SEA Draft Environmental Report. Cumulative impacts will consider but will not be limited to aspects such as potential impacts on the Natura 2000 designated sites, surface water quality etc.</p>
<p>Outfall Discharge Pipe for the Ringsend Wastewater Treatment Plant</p>	<p>Dublin City Council has conducted a major marine site investigation works in Dublin Bay to provide a detailed understanding of the sub-seabed. The works will assist the Council in determining the feasibility of constructing a tunnel to extend the existing effluent outfall to a point approximately 10 kilometres eastwards in Dublin Bay.</p>	<p>The SEA and Masterplan will give appropriate consideration to these works proposals to confirm if they have any likely impacts on the future development of the Masterplan.</p> <p>Any potential for cumulative impacts will be assessed in the SEA Draft Environmental Report. Cumulative impacts will consider but will not be limited to aspects such as potential impacts on the Natura 2000 designated sites, surface water quality etc.</p>
<p>Dublin Eastern Bypass</p>	<p>This project relates to the consideration of a route corridor which will connect the Dublin Port area to the M50 at Sandyford.</p>	<p>The SEA and Masterplan will give appropriate consideration to these works proposals to confirm if they have any likely impacts on the future development of the Masterplan.</p>

Appendix B Assessment Tables

8. Biodiversity - Flora and Fauna

<p>Feature or Performance Indicator / Area: Sandymount Strand / Tolka Estuary SPA (Site Ref. 0004024) and Dolphins Dublin Docks pNHA (Site Ref. 000201)</p>	
<p>Potential Issues:</p> <p>Direct Impacts</p> <ul style="list-style-type: none"> - loss in area or of features - damage or harm to habitat or other features - disturbance of, or direct harm to, wildlife <p>Indirect Impacts</p> <ul style="list-style-type: none"> - erosion of habitat by altering the sea / estuary currents - water pollution risk - recreational pressure (e.g. fishing) - other forms of wildlife disturbance 	<p>Feature Importance or Indicator Sensitivity: Very High</p> <p>Rationale for Categorisation:</p> <p>SPA is internationally designated under the EU Birds Directive (79/409/EEC) for presence of lightbellied brent goose, knot, sanderling, bar-tailed godwit, redshank, roseate tern, common tern and arctic tern.</p> <p>Part of the pNHA is within the SPA.</p>
<p>Mitigation Already Incorporated Into Master Plan:</p>	<p>DPC has developed a Strategic Natura Impact Statement (sNIS) for the Masterplan which identifies the principles/measures which will be addressed by DPC at a later stage should individual developments/projects be developed.</p> <p>Consultation was undertaken during the Masterplan/SEA Environmental Scoping Report process with the relevant statutory and non statutory bodies such as:</p> <ul style="list-style-type: none"> - National Parks and Wildlife Service (NPWS) - Bird Watch Ireland
<p>Short-term effects before mitigation:</p>	<p>Construction-based impacts from:</p> <ul style="list-style-type: none"> - Pollution of estuary and/or bay through leakage or accidental spillage of fuels or chemicals used, which could lead to immediate harm to qualifying species or more indirect harm through bio-accumulation within the food chain. - Runoff of loose sediment into water body, causing various water quality impacts which can impact on habitats and species. - Construction-based noise and vibration can lead to species mortality through such effects as abandonment of nests or difficulty foraging.
<p>Medium- to long-term effects before mitigation:</p>	<ol style="list-style-type: none"> 1. Direct and indirect loss of parts of designated sites, including habitat and feeding resource for qualifying species, as a result of: <ul style="list-style-type: none"> - the proposed Dublin Gateway, and - the proposed multi-usage and bulk solid areas to the south of the channel. 2. Noise and/or vibration disturbance of designated species by increased port activity (e.g. ships or recreational use / dog-walking) which can result in species mortality through such effects as abandonment of nests or difficulty foraging. 3. Capital and maintenance dredging resulting in: <ul style="list-style-type: none"> - Disturbance of sediment (increased suspended solids or mobilisation of contaminants); and/or - disturbance of benthic flora and fauna (as feeding resource for designated species). 4. Greater port activity leading to increased risk and thus incidence of spills / accidents which cause water pollution.
<p>Key assumptions within assessment:</p>	<ol style="list-style-type: none"> 1. Delivery of individual projects or development will include the development of project specific Natura Impact Statements which will ensure the delivery of the Masterplan Appropriate Assessment process and sNIS is carried forward. All planning and licensing requirements for subsequent developments associated with the Masterplan will be addressed in accordance with the legal requirements and in consultation with the relevant authorities. 2. Updated hydrodynamic modelling of the proposed Dublin Gateway will be undertaken in support of a future planning application. 3. Potential future projects will only be developed in the event that DPC can commit to the implementation of all required mitigation on a technical and economic basis. It is assumed also that such AA's will be done on a thorough and reliable basis, and ensure the relevant bird populations are identified and any impacts mitigated appropriately.

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<p>Mitigation Recommended:</p>	<p>1. The Masterplan will be implemented in accordance with the mitigation requirements outlined in the sNIS in Appendix C of this report. If any habitat, feeding areas or other useful features of sites will be lost (including as a result of any changing currents which may cause erosion), appropriate measures will be required by project-level AA process (which cannot be agreed at this Masterplan level, due to the uncertain nature of which options will be developed in the future). The provision of potential future compensatory / replacement areas will be equivalent in quality or otherwise greater in area than the original lost, and will be established to benefit the Natura 2000 network in a way which benefits the same populations as were to be affected by the lost area.</p> <p>2. The potential effects of pollution, disturbance and habitat modification as a result of capital or any increase in maintenance dredging will be mitigated by the development of a Dredging Mitigation Strategy. This document will address the potential effects of an increase in ship movements, sediment re-suspension, contaminated sediments, and potential for changes to the hydrodynamic regime.</p> <p>3. The provision of compensatory habitat or feeding areas will be provided and adequately established in advance of the loss, such that no net loss occurs and no net harm comes to the qualifying species.</p> <p>4. The removal of the mooring structures (dolphins) will not be undertaken until tern colonies are established at the alternative site/dolphin location. This requirement is stated within the Masterplan</p> <p>5. Employment of good construction management practices including, but not limited to sediment control, suitable storage of hazardous materials, minimising surface water runoff and flow from sites, bunded refuelling areas, general housekeeping, exposed soil management and dust control.</p> <p>6. DPC shall consider working with relevant statutory and non-statutory stakeholders to create an Integrated Environmental Management Plan for the port area and environs. The Flora and Fauna audit will be developed as an element of the plan.</p> <p>7. With regard to the proposed construction and operational phases of future developments, these activities will be undertaken to take account of aspects such as breeding seasons, salmonid spawning etc to ensure that operations at sensitive locations are appropriately mitigated to minimise disturbance.</p>	
<p>Short-term residual effects:</p>	<p>The above mitigation, if implemented successfully is expected to remove significant risks to the SPA and pNHA. At this strategic level, any negative impacts would be expected to be negligible provided further project-specific design and construction planning considerations are implemented at the project stage.</p>	<p>0</p>
<p>Medium- to long-term residual effects:</p>	<p>The above mitigation, if implemented successfully is expected to remove significant risks to the SPA and pNHA. At this strategic level, any negative impacts would be expected to be negligible provided further project-specific design and construction planning considerations are implemented at the project stage.</p>	<p>0</p>

	Feature or Performance Indicator / Area:	North Bull Island SPA (00406) North Dublin Bay cSAC/pNHA (000206) South Dublin Bay cSAC/pNHA (000210) Grand Canal pNHA (002104) Royal Canal pNHA (002103)
	Potential Issues: Direct Impacts - None Indirect Impacts - erosion of habitat by altering the sea / estuary currents - water pollution risk - other forms of wildlife disturbance - recreational pressure (e.g. fishing)	Feature Importance or Indicator Sensitivity: Very High Rationale for Categorisation: SPAs are internationally designated under the EU Birds Directive (79/409/EEC) SACs are internationally designated under the EU Habitats Directive (92/42/EEC) pNHAs are nationally designated, however these sites have strong linkages with the internationally designated sites nearby.
Mitigation Already Incorporated Into Masterplan:	<p>DPC has developed a Strategic Natura Impact Statement (sNIS) for the Masterplan which identifies the principles/measures which will be addressed by DPC at a later stage should individual developments/projects be developed.</p> <p>Consultation was undertaken during the Masterplan/SEA Scoping process with the relevant statutory and non statutory bodies such as:</p> <ul style="list-style-type: none"> - National Parks and Wildlife Service (NPWS) - Bird Watch Ireland 	
Short-term effects before mitigation:	Construction-based impacts from: - Pollution of estuary and/or bay through leakage or accidental spillage of fuels or chemicals used, which could lead to immediate harm to qualifying species or more indirect harm through bio-accumulation within the food chain. - Runoff of loose sediment into water body, causing various water quality impacts which can impact on habitats and species. - Construction-based noise and vibration can lead to species mortality through such effects as abandonment of nests or difficulty foraging.	---
Medium- to long-term effects before mitigation:	<ol style="list-style-type: none"> 1. Noise and/or vibration disturbance of designated species by increased port activity (e.g. ships or recreational use / dog-walking) which can result in species mortality through such effects as abandonment of nests or difficulty foraging. 2. Capital and maintenance dredging resulting in: <ul style="list-style-type: none"> - Disturbance of sediment (increased suspended solids or mobilisation of contaminants); and/or - disturbance of benthic flora and fauna (as feeding resource for designated species). 3. Greater port activity leading to increased risk and thus incidence of spills / accidents which cause water pollution. 	---
Key assumptions within assessment:	<ol style="list-style-type: none"> 1. Delivery of individual projects or development will include the development of project specific Natura Impact Statements which will ensure the delivery of the Masterplan Appropriate Assessment process and sNIS is carried forward. All planning and licensing requirements for subsequent developments associated with the Masterplan will be addressed in accordance with the legal requirements and in consultation with the relevant authorities. 2. Updated hydrodynamic modelling of the proposed Dublin Gateway will be undertaken in support of a future planning application. 3. Potential future projects will only be developed in the event that DPC can commit to the implementation of all required mitigation on a technical and economic basis. It is assumed also that such AA's will be done on a thorough and reliable basis, and ensure the relevant bird populations are identified and any impacts mitigated appropriately. 	
Mitigation	<ol style="list-style-type: none"> 1. The Masterplan will be implemented in accordance with the mitigation requirements outlined in the sNIS in Appendix C of this report. If any habitat, feeding areas or other useful features of sites will be lost (including as a result of any changing currents which may cause erosion), appropriate measures will be required by project-level AA process (which cannot be agreed at this Masterplan level, due to the uncertain nature of which options will be developed in the future). The provision of potential future compensatory / replacement areas will be equivalent in quality or otherwise greater in area than the original lost, and will be established to benefit the Natura 2000 network in a way which benefits the same populations as were to be affected by the lost area 2. The potential effects of pollution, disturbance and habitat modification as a result of capital or any increase in maintenance dredging will be mitigated by the development of a Dredging Mitigation Strategy. This document will address the potential effects of an increase in ship movements, sediment re-suspension, contaminated sediments, and potential for changes to the hydrodynamic regime. 3. The provision of compensatory habitat or feeding areas will be provided and adequately established in advance of the loss, such that no net loss occurs and no net harm comes to the qualifying species. 	

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<p>Recommended:</p>	<p>4. The removal of the tern dolphins will not be undertaken until tern colonies are established at the alternative site/dolphin location. This requirement is stated within the Masterplan</p> <p>5. Employment of good construction management practices including, but not limited to sediment control, suitable storage of hazardous materials, minimising surface water runoff and flow from sites, bunded refuelling areas, general housekeeping, exposed soil management and dust control.</p> <p>6. DPC shall consider working with relevant statutory and non-statutory stakeholders to create an Integrated Environmental Management Plan for the port area and environs. The Flora and Fauna audit will be developed as an element of the plan.</p> <p>7. With regard to the proposed construction and operational phases of future developments, these activities will be undertaken to take account of aspects such as breeding seasons, salmonid spawning etc to ensure that operations at sensitive locations are appropriately mitigated to minimise disturbance.</p>	
<p>Short-term residual effects:</p>	<p>The above mitigation, if implemented successfully is expected to remove significant risks to the SAC environment. At a strategic level, any negative impacts would be expected to be negligible provided further project specific design and construction planning considerations are implemented at the project stage.</p>	<p>0</p>
<p>Medium- to long-term residual effects:</p>		<p>0</p>

	Feature or Performance Indicator / Area:	Aquatic ecology and fisheries
Potential Issues:	<p>Direct Impacts -Fisheries habitat loss or creation (foreshore and open channel) from land reclamation and work on berth upgrades. -Construction based impacts - ground preparatory works, dredging, infilling activities and in stream works (construction of quay walls etc) may result in the release and re-suspension of sediment and possible contaminants into the surrounding watercourses. Also, presence of construction fuel and chemicals could be a risk of a pollution incident. - Disturbance of fishery species as a result of noise and vibration associated with the construction and operation of developments</p> <p>Indirect Impacts -Loss of feeding resources for fishery species</p>	<p>Feature Importance or Indicator Sensitivity:</p> <p>Atlantic Salmon is listed under Annex II and V of the Habitats Directive and is therefore afforded conservation protection.</p> <p>Rationale for Categorisation:</p> <p>Dublin Port is located within the catchments of the Rivers Liffey, Dodder and Tolka. The River Tolka is a Salmonid system with both the Liffey and Dodder representing some of the foremost Salmonid systems in the region.</p> <p>Presence of migratory species such as lamprey, sea trout and eel.</p>
Mitigation Already Incorporated into Masterplan:	Consultation has been undertaken with Inland Fisheries Ireland with regard to the engineering options proposed by the Masterplan. IFI's subsequent submission has been taken into consideration in the development of the SEA Draft Environmental Report and Masterplan documents.	
Short-term effects before mitigation:	Construction-based impacts: adverse effects on water quality such as from greater incidence of spills / leakages and thus pollution, disturbance resulting from noise and vibration, onset of habitat loss from development, and possible greater loss for temporary working areas	---
Medium- to long-term effects before mitigation:	<ol style="list-style-type: none"> 1. Various works around the port, including berth upgrades and land reclamation could lead to fisheries habitat loss (foreshore and open channel). 2. Certain port developments could lead to a loss of feeding resources for fishery species (precise locations unknown) 3. Disturbance of fishery species during operational stage of future developments (possible greater ship traffic, and possible other vibration impact) 4. Greater port activity leading to increased risk and thus incidence of spills / accidents which cause water pollution. Also, sediment pollution from maintenance and capital dredging requirements during the operational phase of any developments 	---
Key assumptions within assessment:	<p>All planning and licensing requirements for subsequent developments associated with the Masterplan will be addressed in accordance with legal requirements and in consultation with the relevant authorities.</p> <p>Hydrodynamic modelling of the proposed Dublin Gateway will be undertaken in support of a future planning application.</p>	

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<p>Mitigation Recommended:</p>	<ol style="list-style-type: none"> 1. Employment of good construction management practices including, but not limited to: sediment control, suitable storage of hazardous materials, minimising surface water runoff and flow from sites, bunded refuelling areas, general housekeeping, exposed soil management and dust control. 2. The potential effects of pollution, disturbance and habitat modification as a result of capital or any increase in maintenance dredging will be mitigated by the development of a Dredging Mitigation Strategy. This document will address the potential effects of an increase in ship movements, sediment re-suspension, contaminated sediments, and potential for changes to the hydrodynamic regime. 3. The requirement for and extent of surface water quality and also discharge monitoring will be commensurate with the likely risk of adverse impact from a specific development on surface water bodies. Monitoring requirements will be reviewed and implemented in consultation with the relevant authorities. 4. Future project studies to consider the phasing of development to minimise the scale of any habitat or wildlife community impacts, such that there is enough time in between developments for habitat to re-establish / mature, where appropriate. 5.DPC shall seek net enhancements on individual projects, using applicable guidance. Consideration shall be given to the incorporation of enhancements such as planting of native tree and shrub species into future landscape design, inclusion of a wider range of habitat creation and enhancement options such as nest boxes and maximising the physical complexity of marine structures to maximise use by specific species i.e. provision of cored holes in quay walls for use by guillemots. 6. DPC will review the requirement for fish surveys in areas where information is not extensive at present with the Inland Fisheries Ireland. 7 . DPC operations and activities are managed in accordance with the requirements of the companys certified ISO:14001 EMS. Although tenants are responsible for confirming compliance with legal/licensing requirements, the tenants sites are audited by DPC to assist in monitoring environmental management practises and compliance with environmental legislative requirements. 8.DPC shall consider working with relevant statutory and non-statutory stakeholders to create an Integrated Environmental Management Plan for the port area and environs. The Flora and Fauna audit will be developed as an element of the plan. 9. With regard to the proposed construction and operational phases of future developments, these activities will be undertaken to take account of aspects such as breeding seasons, salmonid spawning etc to ensure that operations at sensitive locations are appropriately mitigated to minimise disturbance. 	
<p>Short-term residual effects:</p>	<p>The above mitigation, if implemented successfully is expected to remove significant risks to the non-designated fisheries environment. At a strategic level, any negative impacts would be expected to be negligible provided further project specific design and construction planning considerations are implemented at the project stage.</p>	0
<p>Medium- to long-term residual effects:</p>		0

	<p>Feature or Performance Indicator / Area:</p>	<p>Non-designated terrestrial flora and fauna within and outside of designated areas Protected species outside of designated areas</p>
	<p>Potential Issues Addressed:</p> <p>Direct Impacts - Habitat loss or degradation, or creation of habitat - Disturbance of wildlife through noise, vibration, emissions or recreational pressure (e.g. dog-walkers)</p> <p>Indirect Impacts - Indirect habitat degradation as a result of changes such as increased road traffic / emissions - Improved habitat as a result of landscape planting / amenity areas - Disturbance to habitats and species due to vessel usage in area</p>	<p>Feature Importance or Indicator Sensitivity:</p> <p>Rationale for Categorisation:</p> <p>Not designated, but of from local to regional biodiversity / ecological value. May include protected species present outside of designated areas.</p> <p style="text-align: center;">Medium</p>
<p>Mitigation Already Incorporated Into Master Plan:</p>	<p>Consultation was undertaken during the Masterplan/SEA Scoping process with the relevant statutory and non statutory bodies such as: - National Parks and Wildlife Service (NPWS) - Bird Watch Ireland</p> <p>Responses received were incorporated into this SEA Draft Environmental Report.</p>	
<p>Short-term effects before mitigation:</p>	<p>Construction-based impacts from:</p> <ol style="list-style-type: none"> 1. Clearance of any sites, causing potential removal of habitat (e.g. refuge for bats or nesting area for breeding birds) 2. Construction-based noise and vibration can lead to species mortality through such effects as abandonment of nests or difficulty foraging. 3. Degradation of terrestrial habitats (e.g. by new pollution incident from a construction site). 	-
<p>Medium- to long-term effects before mitigation:</p>	<ol style="list-style-type: none"> 1. Loss of habitat or feeding resource for terrestrial species. 2. Increased activity at the port causing greater noise and other types of disturbance, leading to a reduction in species usage of area. 	-
<p>Key assumptions within assessment:</p>	<p>All planning and licensing requirements including Environmental Impact Assessment where applicable, for subsequent developments associated with the Masterplan will be addressed in accordance with the legal requirements and in consultation with the relevant authorities.</p>	
<p>Mitigation Recommended:</p>	<ol style="list-style-type: none"> 1. Employment of good construction management practices including, but not limited to: sediment control, suitable storage of hazardous materials, minimising surface water runoff and flow from sites, bunded refuelling areas, general housekeeping, exposed soil management and dust control. 2. The potential effects of pollution, disturbance and habitat modification as a result of capital or any increase in maintenance dredging will be mitigated by the development of a Dredging Mitigation Strategy. This document will address the potential effects of an increase in ship movements, sediment re-suspension, contaminated sediments, and potential for changes to the hydrodynamic regime. 3. DPC will commence an audit of flora and fauna of Dublin Port. It is envisaged that this audit may assist in informing the future Appropriate Assessment process for individual developments/projects. 4. Habitat quality will be closely monitored during construction-based works for proposed developments. Water quality monitoring will be implemented on surface water discharges resulting from the proposed developments. Monitoring requirements will be reviewed with the relevant authorities. 5. DPC operations and activities are managed in accordance with the requirements of the company's certified ISO:14001 EMS. Although tenants are responsible for confirming compliance with legal/licensing requirements, the tenants sites are audited by DPC to assist in monitoring environmental management practices and compliance with environmental legislative requirements. 6. DPC shall consider working with relevant statutory and non-statutory stakeholders to create an Integrated Environmental Management Plan for the port area. A Flora and Fauna Audit of the port estate will be developed as an element of this plan. 7. DPC shall seek net enhancements on individual projects, using applicable guidance. Consideration shall be given to the incorporation of enhancements such as planting of native tree and shrub species into future landscape design, inclusion of a wider range of habitat creation and enhancement options such as nest boxes and maximising the physical complexity of marine structures to maximise use by specific species i.e. provision of cored holes in quay walls for use by guillemots. 8. With regard to the proposed construction and operational phases of future developments, these activities will be undertaken to take account of aspects such as breeding seasons, salmonid spawning etc to ensure that operations at sensitive locations are appropriately mitigated to minimise disturbance. 	
<p>Short-term residual effects:</p>	<p>The above mitigation, if implemented successfully is expected to remove significant risks to the non-designated terrestrial flora and fauna. At a strategic level, any negative impacts would be expected to be negligible provided further project-specific design and construction planning.</p>	0

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	Medium- to long-term residual effects:	If the above recommended enhancements incorporated, it is possible to achieve net benefits to non-designated (as well as certain protected) terrestrial ecology within Dublin.	+
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2. Flood Risk		
Feature or Performance Indicator / Area:		Dublin Port Estate
Potential Issues:	Need to account for potentially placing new facilities or greater human activity within flood or coastal erosion risk areas at the Dublin Port Estate	Feature Importance or Indicator Sensitivity: Medium Rationale for Categorisation: Location of the Port within 'Zone A' flood zone (OPW, 2009) indicating the "probability of flooding from rivers and the sea is highest". However no historical flood events within the Port Estate recorded.
Mitigation Already Incorporated Into Masterplan:	Commitment to give appropriate consideration to flood risk management in the delivery of individual projects or developments associated with the Masterplan.	
Short-term effects before mitigation:	Construction works may temporarily alter the ground levels, such as during excavation or reclamation within the Port Estate, potentially making areas more susceptible to flooding. The presence of construction compounds and plant, should a flood event occur may result in damage to the construction site/compounds, with resultant costs in terms of recovery from the flood (including potential environmental damage).	-
Medium- to long-term effects before mitigation:	Risk that sea level rise due to climate change will increase the risk of flooding in the Port estate. It is considered that there would be a negligible effect in the medium to long term due to the current proposed Flood Risk Management Plans (FRMPs) being developed which encompass Dublin, such as; • FEMFRAMS: Fingal East Meath Flood Risk and Management Study – commenced; • River Dodder Flood Risk Assessment and Management – commenced; and • Eastern Flood Risk Management Plans – commenced in June 2011. Each FRMP will identify and map the existing and potential future flood hazards and risks, identify viable structural and non-structural flood risk management options and measures. In addition, each FRMP will be subject to the Strategic Environmental Assessment and Appropriate Assessment processes.	0
Key assumptions within assessment:	1. The risk of flooding continues to increase in Ireland due to the climate change effects of changes in rainfall and increasing seawater levels. 2. Hydrodynamic modelling undertaken previously for the Ro-Ro development reclamation showed that the impact of this development and associated dredging had a very small effect on water levels inside the River Liffey. (Dublin Gateway EIS)	
Mitigation Recommended:	A detailed Flood Risk Assessment has not been carried out at this stage for the purposes of the Masterplan. However, individual projects will be subject to a Flood Risk Assessment at the planning application stage. This will be developed in accordance with The Planning System and Flood Risk Management Guidelines for Planning Authorities November 2009, DoEHLG. During the delivery of FRA's for individual projects, with particular regard to the proposed Dublin Gateway project (in the event of any significant deviations in design), consideration shall be given to the flood protection schemes initiated by Dublin City Council in Clontarf, Sandymount and Dollymount and Flood Risk Management Plans (FRMP) being developed for Dublin. The sustainable urban drainage principles outlined in the Greater Dublin Strategic Drainage Study will be implemented as relevant in future projects or developments. Project-specific considerations shall include consideration of the flood protection schemes initiated by Dublin City Council in Clontarf, Sandymount and Dollymount and Flood Risk Management Plans (FRMP) being developed for the Dublin and surrounding region.	
Short-term residual effects:	Climate change is expected to increase the frequency and severity of flood events regardless of development. At a strategic level, any negative impacts arising from construction/development of the Masterplan would be expected to be negligible provided consideration is given to flood risk management in the delivery of individual projects or developments.	0
Medium- to long-term residual effects:		0

Feature or Performance Indicator / Area:		Clontarf and Sandymount Coastal Shoreline	
Potential Issues:	Need to consider whether changes at the port could have indirect effects on coastal erosion elsewhere	Feature Importance or Indicator Sensitivity:	Medium
		Rationale for Categorisation:	Evidence of Historical Flooding in Clontarf and Sandymount Residential Areas from intensive rainfall and tidal flood events
Mitigation Already Incorporated Into Masterplan:	Commitment to give appropriate consideration to flood risk management and coastal erosion as a result of reclamation in the delivery of individual projects or developments associated with the Masterplan.		
Short-term effects before mitigation:	n/a		0
Medium- to long-term effects before mitigation:	Potential hydrodynamic changes as a result of the development reclamation leading to increased coastal erosion of Clontarf and Sandymount shorelines.		-
Key assumptions within assessment:	<p>1. The risk of flooding continues to increase in Ireland due to climate change impacts such as changes in rainfall and increasing seawater levels.</p> <p>2. Hydrodynamic modelling undertaken previously for the Ro-Ro development reclamation showed that the impact of this development and associated dredging had a very small effect on water levels inside the River Liffey. (Dublin Gateway EIS)</p> <p>3. Recent flood protection schemes are being initiated by Dublin City Council (DCC) including:</p> <ul style="list-style-type: none"> • Clontarf Flood Defence project (due to commence construction in 2012); • Dollymount Promenade and Flood Protection project (going through environmental assessment stage); and • Sandymount Promenade and Flood Protection project (going through environmental assessment stage). 		
Mitigation Recommended:	<p>The sustainable urban drainage principles outlined in the Greater Dublin Strategic Drainage Study will be implemented as relevant in future projects or developments.</p> <p>A detailed Flood Risk Assessment has not been carried out at this stage for the purposes of the Masterplan. However, individual projects will be subject to a Flood Risk Assessment at the planning application stage. This will be developed in accordance with The Planning System and Flood Risk Management Guidelines for Planning Authorities November 2009, DoEHLG.</p> <p>During the delivery of FRA's for individual projects, with particular regard to the proposed Dublin Gateway project (in the event of any significant deviations in design), consideration shall be given to the flood protection schemes initiated by Dublin City Council in Clontarf, Sandymount and Dollymount and Flood Risk Management Plans (FRMP) being developed for Dublin</p> <p>The sustainable urban drainage principles outlined in the Greater Dublin Strategic Drainage Study will be implemented as relevant in future projects or developments.</p> <p>Project-specific considerations shall include consideration of the flood protection schemes initiated by Dublin City Council in Clontarf, Sandymount and Dollymount and Flood Risk Management Plans (FRMP) being developed for the Dublin and surrounding region.</p>		
Short-term residual effects:			0
Medium- to long-term residual effects:	Climate change is expected to increase the frequency and severity of flood events regardless of development. At a strategic level, any negative impacts arising from construction/development of the Masterplan would be expected to be negligible provided consideration is given to flood risk management and coastal erosion as a result of potential hydrometric changes of reclamation, in the delivery of individual projects or developments.		0

2B

3. Water - Surface Water

	<p>Feature or Performance Indicator / Area:</p>	<p>Liffey Lower Estuary (Estuarine Water Body)</p>
<p>Potential Issues:</p>	<p>Direct Impacts -Extension of the modified riverbank (Liffey) due to the proposed Ro-Ro and Common Usage reclamation and development -Capital and Maintenance Dredging increasing suspended solids</p> <p>Indirect Impacts -Deterioration of water quality during construction and operation of all developments of the Masterplan.</p>	<p>Feature Importance or Indicator Sensitivity:</p> <p>Very High</p> <p>Rationale for Categorisation:</p> <p>Characterised as Heavily Modified Water Bodies (HMWB) in the Eastern River Basin Management Plan (ERBMP). HMWB are water bodies that have been modified by operations such as for navigation, water supply and power generation.</p> <p>Designated Areas within the water body:</p> <ul style="list-style-type: none"> • Liffey Estuary (Nutrient Sensitive Area) • North Dublin Bay (NHA, SAC) • Sandymount Strand/Tolka Estuary (SPA) • North Bull Island (SPA) <p>(Impacts on these designated areas discussed in Biodiversity - Flora and Fauna)</p>
<p>Mitigation Already Incorporated Into Masterplan:</p>	<p>1.DPC currently implement a monthly programme of surface water drainage monitoring as part of the DPC EMS. Eleven surface water interceptors are monitored monthly to determine the surface water discharge conditions from the Dublin Port drainage system and to minimise any potential impact on the Liffey Lower Estuary. In accordance with the DPC EMS, if the analysis shows levels above agreed standards, the interceptors are inspected and servicing undertaken as required to improve and maintain interceptor efficiency.</p> <p>This monitoring programme will be continued throughout the Masterplan Development.</p> <p>2.The dredging (Capital and Maintenance) operator operates in accordance with Standard Operating Procedure requirements under the Dublin Port EMS and also in accordance with relevant licensing conditions.</p> <p>3. DPC operations and activities are managed under the DPC ISO14001 Environmental Management System. DPC tenants are responsible for operating in accordance with legislative requirements and any site specific licensing and/or planning conditions. Additionally, a programme of environmental audits at tenants sites to monitor environmental compliance and management is undertaken by DPC.</p>	
<p>Short-term effects before mitigation:</p>	<p>Construction activities which would be proposed by the Masterplan Options such as dredging, berth deepening, quay wall construction, reclamation, soil remediation and stabilisation have the potential to impact on the surface water environment through:</p> <ul style="list-style-type: none"> -Disturbance of Sediment (increased suspended solids or mobilization of contaminants); -Accidental release of hydrocarbons/chemicals/silt into the water body <p>Dredging (Capital and Maintenance) activities may result in localised sediment plumes arising from the dredging activities which may introduce sediments into the surrounding marine water column. These sediment plumes could result in a variety of effects to the marine water quality in the vicinity of these dredging activities namely:</p> <ul style="list-style-type: none"> -Increased turbidity - this increased turbidity results in a decrease in the depth that light is able to penetrate the water column; -Chemical changes occurring if the sediment plume can change the physiological conditions by reducing dissolved oxygen (DO) levels in the water; and -The introduction of low levels of contaminated sediment into the marine environment, particularly relevant during dredging activities within areas of known historic contamination. 	<p style="text-align: center;">---</p>
<p>Medium- to long-term effects before mitigation:</p>	<p>Deterioration of surface water body water quality. The potential growth in operational activities may increase the likelihood of accidental pollution incidents impacting the Lower Liffey Estuary such as:</p> <ul style="list-style-type: none"> -Spills from loading/unloading vessels such as oil products, molasses, bitumen, oil, chemicals -Release of contaminants from site activities to the DPC surface water drainage system <p>Dredging (as above)</p>	<p style="text-align: center;">---</p>

3A

<p>Key assumptions within assessment:</p>	<p>DPC will continue to develop within the requirements of the Eastern River Basin District Management Plan programme of measures, and these measures will inform the future development stages of the Masterplan Options.</p> <p>All planning and licensing requirements including Environmental Impact Assessment, Foreshore, IPPC, Discharge, Dredging and Dumping at Sea, Waste licensing where applicable, for subsequent developments associated with the Masterplan will be addressed in accordance with the legal requirements and consultation with the relevant authorities.</p>	
<p>Mitigation Recommended:</p>	<ol style="list-style-type: none"> 1. DPC will continue to develop within the requirements of the Eastern River Basin District Management Plan programme of measures, and these measures will inform the future development stages of the Masterplan Options. 2. Employment of good construction and operational site management practices including, but not limited to: pollution prevention and control, sediment management, suitable storage of hazardous materials, minimising surface water runoff and flow from sites, bunded refuelling areas, general housekeeping, exposed soil management and dust control. 3. The requirement for and extent of surface water quality and also discharge monitoring will be commensurate with the likely risk of adverse impact from a specific development on surface water bodies. Monitoring requirements will be reviewed and implemented in consultation with the relevant authorities. 4. DPC shall consider working with relevant statutory and non-statutory stakeholders to create an Integrated Environmental Management Plan for the port area and environs which shall give appropriate consideration to ensure the on going protection of water quality (with particular regard to the Natura 2000 habitats) and associated species including fisheries. 5. The potential effects of pollution, disturbance as a result of capital or any increase in maintenance dredging will be mitigated by the development of a Dredging Mitigation Strategy. This document will address the potential effects of an increase in ship movements, sediment re-suspension, contaminated sediments, and potential for changes to the hydrodynamic regime. 	
<p>Short-term residual effects:</p>	<p>Although increased area and activity at the port will increase the amount of potentially polluting materials handled at the port, this increase is synergistic with existing pollution prevention and control measures.</p>	<p>0</p>
<p>Medium- to long-term residual effects:</p>	<p>The technique currently employed in maintenance dredging releases a minimum of sediment and the disposal mechanism and capping ensures that 97% of the material is settled within sixteen minutes of the disposal. The tidal regime within Dublin Bay leads to a north to south current being generated therefore any remaining suspended sediment in the vicinity of the current Burford Bank dump site will be transported away from the SACs. Therefore, there are unlikely to be any significant effects on any of the qualifying features of the SACs given the dynamic environment of the Bay, the duration and position of the operations in relation to the Sites the quantities of potential sediment released and the types of intertidal biota potentially affected which have developed to withstand the Bay's environment.</p> <p>Additionally, the footprint and dredging requirements of the currently proposed Dublin Gateway is much reduced as it is not proposed to develop Ro-Ro berths on the eastern face and therefore the dredging requirements are likely to be much reduced.</p> <p>The above mitigation, if implemented successfully is expected to remove significant risks to the surface water environment. At a strategic level, any negative impacts would be expected to be negligible provided further project specific design and construction planning considerations are implemented at the project stage.</p>	

	<p>Feature or Performance Indicator / Area:</p> <p>Potential Issues:</p> <p>Direct Impacts -Loss of surface water body area due to proposed Ro-Ro development and reclamation.</p> <p>Indirect Impacts -Deterioration of Water Quality during construction and operation of all developments of the Masterplan.</p>	<p>Tolka Estuary (Estuarine Water Body)</p> <p>Feature Importance or Indicator Sensitivity:</p> <p>Rationale for Categorisation:</p>	<p>Very High</p> <p>Characterised as Heavily Modified Water Bodies (HMWB) in the Eastern River Basin Management Plan (ERBMP). HMWB are water bodies that have been modified by operations such as for navigation, water supply and power generation.</p> <p>Designated Areas within the water body:</p> <ul style="list-style-type: none"> • North Dublin Bay (NHA, SAC) • Sandymount Strand/Tolka Estuary (SPA) • North Bull Island (SPA) <p>(Impacts on these designated areas discussed in Biodiversity - Flora and Fauna)</p>
<p>Mitigation Already Incorporated Into Masterplan:</p>	<p>1.DPC currently implement a monthly programme of surface water drainage monitoring as part of the DPC EMS. Eleven surface water interceptors are monitored monthly to determine the surface water discharge conditions from the Dublin Port drainage system and to minimise any potential impact on the Liffey Lower Estuary. In accordance with the DPC EMS, if the analysis shows levels above agreed standards, the interceptors are inspected and servicing undertaken as required to improve and maintain interceptor efficiency.</p> <p>This monitoring programme will be continued throughout the Masterplan Development.</p> <p>2.The dredging (Capital and Maintenance) operator operates in accordance with Standard Operating Procedure requirements under the Dublin Port EMS and also in accordance with relevant licensing conditions.</p> <p>3. DPC operations and activities are managed under the DPC ISO14001 Environmental Management System. DPC tenants are responsible for operating in accordance with legislative requirements and any site specific licensing and/or planning conditions. Additionally, a programme of environmental audits at tenants sites to monitor environmental compliance and management is undertaken by DPC.</p>		
<p>Short-term effects before mitigation:</p>	<p>Construction activities which would be proposed by the Masterplan Options such as dredging, berth deepening, quay wall construction, reclamation, soil remediation and stabilisation have the potential to impact on the surface water environment through:</p> <ul style="list-style-type: none"> -Disturbance of Sediment (increased suspended solids or mobilization of contaminants); -Accidental release of Hydrocarbons/chemicals/silt into the water body <p>Dredging (Capital and Maintenance) activities may result in localised sediment plumes arising from the dredging activities which may introduce sediments into the surrounding marine water column. These sediment plumes could result in a variety of effects to the marine water quality in the vicinity of these dredging activities namely:</p> <ul style="list-style-type: none"> -Increased turbidity - this increased turbidity results in a decrease in the depth that light is able to penetrate the water column; -Chemical changes occurring if the sediment plume can change the physiological conditions by reducing dissolved oxygen (DO) levels in the water; and -The introduction of low levels of contaminated sediment into the marine environment, particularly relevant during dredging activities within areas of known historic contamination. 	<p style="text-align: center;">---</p>	
<p>Medium- to long-term effects before mitigation:</p>	<p>Deterioration of surface water body water quality. The potential growth in operational activities may increase the likelihood of accidental pollution incidents impacting the Lower Liffey Estuary such as:</p> <ul style="list-style-type: none"> -Spills from loading/unloading vessels such as oil products, molasses, bitumen, oil, chemicals -Release of contaminants from site activities to the DPC surface water drainage system <p>Dredging (as above)</p>	<p style="text-align: center;">---</p>	
<p>Key assumptions within assessment:</p>	<p>DPC will continue to develop within the requirements of the Eastern River Basin District Management Plan programme of measures, and these measures will inform the future development stages of the Masterplan Options.</p> <p>All planning and licensing requirements including Environmental Impact Assessment, Foreshore, IPPC, Discharge, Dredging and Dumping at Sea, Waste where applicable, for subsequent developments associated with the Masterplan will be addressed in accordance with the legal requirements and consultation with the relevant authorities.</p>		

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	<p>Mitigation Recommended:</p>	<p>1. DPC will continue to develop within the requirements of the Eastern River Basin District Management Plan programme of measures, and these measures will inform the future development stages of the Masterplan Options.</p> <p>2. Employment of good construction and operational site management practices including, but not limited to: pollution prevention and control, sediment management, suitable storage of hazardous materials, minimising surface water runoff and flow from sites, bunded refuelling areas, general housekeeping, exposed soil management and dust control.</p> <p>3. The requirement for and extent of surface water quality and also discharge monitoring will be commensurate with the likely risk of adverse impact from a specific development on surface water bodies. Monitoring requirements will be reviewed and implemented in consultation with the relevant authorities.</p> <p>4. DPC shall consider working with relevant statutory and non-statutory stakeholders to create an Integrated Environmental Management Plan for the port area and environs which shall give appropriate consideration to ensure the on going protection of water quality (with particular regard to the Natura 2000 habitats) and associated species including fisheries.</p> <p>5. The potential effects of pollution, disturbance as a result of capital or any increase in maintenance dredging will be mitigated by the development of a Dredging Mitigation Strategy. This document will address the potential effects of an increase in ship movements, sediment re-suspension, contaminated sediments, and potential for changes to the hydrodynamic regime.</p>	
	<p>Short-term residual effects:</p>	<p>Although increased area and activity at the port will increase the amount of potentially polluting materials handled at the port, this increase is synergistic with existing pollution prevention and control measures.</p> <p>The technique currently employed in maintenance dredging releases a minimum of sediment and the disposal mechanism and capping will ensure that 97% of the material is settled within sixteen minutes of the disposal. The tidal regime within Dublin Bay leads to a north to south current being generated therefore any remaining suspended sediment in the vicinity of the current Burford Bank dump site will be transported away from the SACs. Therefore, there are unlikely to be any significant effects on any of the qualifying features of the SACs given the dynamic environment of the Bay, the duration and position of the operations in relation to the Sites the quantities of potential sediment released and the types of intertidal biota potentially affected which have developed to withstand the Bay's environment.</p>	<p>0</p>
	<p>Medium- to long-term residual effects:</p>	<p>Additionally, the footprint and dredging requirements of the currently proposed Dublin Gateway is much reduced as it is not proposed to develop Ro-Ro berths on the eastern face and therefore the dredging requirements are much reduced.</p> <p>The above mitigation, if implemented successfully is expected to remove significant risks to the surface water environment. At a strategic level, any negative impacts would be expected to be negligible provided further project specific design and construction planning considerations are implemented at the project stage.</p>	<p>0</p>

Feature or Performance Indicator / Area:		Dublin Bay (Coastal Water body)	
Potential Issues:	Indirect Impacts -Deterioration of Water Quality during construction and operation of all developments of the Masterplan.	Feature Importance or Indicator Sensitivity:	Very High
		Rationale for Categorisation:	<p>Characterised as Heavily Modified Water Bodies (HMWB) in the Eastern River Basin Management Plan (ERBMP). HMWB are water bodies that have been modified by operations such as for navigation, water supply and power generation.</p> <p>Designated Areas within the water body:</p> <ul style="list-style-type: none"> • North Dublin Bay (NHA, SAC) • South Dublin Bay (NHA, SAC) • North Bull Island (SPA) • Sandymount Strand/Tolka Estuary (SPA) • Sandymount Strand (Bathing Waters) • Merrion Strand (Bathing Waters) • Seapoint (Bathing Waters) <p>(Impacts on these designated areas discussed in Biodiversity - Flora and Fauna)</p>
Mitigation Already Incorporated into Masterplan:	<p>1.DPC currently implement a monthly programme of surface water drainage monitoring as part of the DPC EMS. Eleven surface water interceptors are monitored monthly to determine the surface water discharge conditions from the Dublin Port drainage system and to minimise any potential impact on the Liffey Lower Estuary. In accordance with the DPC EMS, if the analysis shows levels above agreed standards, the interceptors are inspected and servicing undertaken as required to improve and maintain interceptor efficiency.</p> <p>This monitoring programme will be continued throughout the Masterplan Development.</p> <p>2.The dredging (Capital and Maintenance) operator operates in accordance with Standard Operating Procedure requirements under the Dublin Port EMS and also in accordance with relevant licensing conditions.</p> <p>3. DPC operations and activities are managed under the DPC ISO14001 Environmental Management System. DPC tenants are responsible for operating in accordance with legislative requirements and any site specific licensing and/or planning conditions. Additionally, a programme of environmental audits at tenants sites to monitor environmental compliance and management is undertaken by DPC.</p>		
Short-term effects before mitigation:	<p>Construction activities which would be proposed by the Masterplan Options such as dredging, berth deepening, quay wall construction, reclamation, soil remediation and stabilisation have the potential to impact on the surface water environment through:</p> <ul style="list-style-type: none"> -Disturbance of Sediment (increased suspended solids or mobilization of contaminants); -Accidental release of Hydrocarbons/chemicals/silt into the water body <p>Dredging (Capital and Maintenance) activities may result in localised sediment plumes arising from the dredging activities which may introduce sediments into the surrounding marine water column. These sediment plumes could result in a variety of effects to the marine water quality in the vicinity of these dredging activities, namely:</p> <ul style="list-style-type: none"> -Increased turbidity - this increased turbidity results in a decrease in the depth that light is able to penetrate the water column; -Chemical changes occurring if the sediment plume can change the physiological conditions by reducing dissolved oxygen (DO) levels in the water; and -The introduction low levels of contaminated sediment into the marine environment, particularly relevant during dredging activities within areas of known historic contamination. 	---	
Medium- to long-term effects before mitigation:	<p>Deterioration of surface water body water quality. The potential growth in operational activities may increase the likelihood of accidental pollution incidents impacting the Lower Liffey Estuary such as:</p> <ul style="list-style-type: none"> -Spills from loading/unloading vessels such as oil products, molasses, bitumen, oil, chemicals -Release of contaminants from site activities to the DPC surface water drainage system <p>Dredging (as above)</p>	---	
Key assumptions within assessment:	<p>DPC will continue to develop within the requirements of the Eastern River Basin District Management Plan programme of measures, and these measures will inform the future development stages of the Masterplan Options.</p> <p>All planning and licensing requirements including Environmental Impact Assessment, Foreshore, IPPC, Discharge, Dredging and Dumping at Sea, Waste where applicable, for subsequent developments associated with the Masterplan will be addressed in accordance with the legal requirements and consultation with the relevant authorities.</p>		

3C

	<p>Mitigation Recommended:</p>	<p>1. DPC will continue to develop within the requirements of the Eastern River Basin District Management Plan programme of measures, and these measures will inform the future development stages of the Masterplan Options.</p> <p>2. Employment of good construction and operational site management practices including, but not limited to: pollution prevention and control, sediment management, suitable storage of hazardous materials, minimising surface water runoff and flow from sites, bunded refuelling areas, general housekeeping, exposed soil management and dust control.</p> <p>3. The requirement for and extent of surface water quality and also discharge monitoring will be commensurate with the likely risk of adverse impact from a specific development on surface water bodies. Monitoring requirements will be reviewed and implemented in consultation with the relevant authorities.</p> <p>4. DPC shall consider working with relevant statutory and non-statutory stakeholders to create an Integrated Environmental Management Plan for the port area and environs which shall give appropriate consideration to ensure the on going protection of water quality (with particular regard to the Natura 2000 habitats) and associated species including fisheries.</p> <p>5. The potential effects of pollution, disturbance as a result of capital or any increase in maintenance dredging will be mitigated by the development of a Dredging Mitigation Strategy. This document will address the potential effects of an increase in ship movements, sediment re-suspension, contaminated sediments, and potential for changes to the hydrodynamic regime.</p>
	<p>Short-term residual effects:</p>	<p>0</p>
	<p>Medium- to long-term residual effects:</p>	<p>Although increased area and activity at the port will increase the amount of potentially polluting materials handled at the port, this increase is synergistic with existing pollution prevention and control measures.</p> <p>The technique currently employed in maintenance dredging releases a minimum of sediment and the disposal mechanism and capping will ensure that 97% of the material is settled within sixteen minutes of the disposal. The tidal regime within Dublin Bay leads to a north to south current being generated therefore any remaining suspended sediment in the vicinity of the current Burford Bank dump site will be transported away from the SACs. Therefore, there are unlikely to be any significant effects on any of the qualifying features of the SACs given the dynamic environment of the Bay, the duration and position of the operations in relation to the Sites the quantities of potential sediment released and the types of intertidal biota potentially affected which have developed to withstand the Bay's environment.</p> <p>Additionally, the footprint and dredging requirements of the currently proposed Dublin Gateway is much reduced as it is not proposed to develop Ro-Ro berths on the eastern face and therefore the dredging requirements are much reduced.</p> <p>The above mitigation, if implemented successfully is expected to remove significant risks to the surface water environment. At a strategic level, any negative impacts would be expected to be negligible provided further project specific design and construction planning considerations are implemented at the project stage.</p>

4. Water - Groundwater			
	Feature or Performance Indicator / Area:	Dublin Urban Groundwater Body	
	Potential Issues:	Feature Importance or Indicator Sensitivity: Rationale for Categorisation:	Medium The Eastern River Basin District Management Plan currently classifies this groundwater body as being of 'good' status. The groundwater body is currently characterized as being 'not at risk' under the Water Framework Directive Groundwater within areas of the Port Estate is known to be impacted by historical industrial activities.
	Mitigation Already Incorporated Into Masterplan:	DPC operations and activities are managed under the DPC ISO14001 EMS. DPC tenants are responsible for operating in accordance with legislative requirements and any site specific licensing and/or planning conditions. Additionally DPC operate a programme of environmental audits at tenants site to monitor environmental compliance and management.	
	Short-term effects before mitigation:	Construction based impacts; 1. Contamination of groundwater body through leakage or accidental spillage of hydrocarbons, chemicals, concrete on site. 2. Contamination of groundwater through cut and fill, piling and excavations causing mobilisation of soil contaminants.	-
4A	Medium- to long-term effects before mitigation:	Inadequate site practises during operation leading to: 1. Leakage from bulk storage of oils/fuels/chemicals and tank farm operations. 2. Deterioration of WFD 'Good' status. 3. Contamination of groundwater body through leakage or accidental spillage of operational pollutants such as hydrocarbons (diesel, petrol, fuel oil, hydraulic oil, green diesel) and chemicals. 4. Contamination of groundwater through excavations causing mobilisation of soil contaminants	-
	Key assumptions within assessment:	All planning and licensing requirements including Environmental Impact Assessment where applicable, for subsequent developments associated with the Masterplan will be addressed in accordance with the legal requirements and consultation with the relevant authorities.	
	Mitigation Recommended:	1. Specific DPC environmental surveys have determined that the groundwater within areas of the port estate has been impacted by historical industrial activities. The presence of hydrocarbon films and free phase product has been recorded in defined areas of the port estate. An integrated approach is currently being implemented within the estate with regard to managing and monitoring the removal of free phase product from the groundwater within these areas of the port estate. It is envisaged that this initiative will continue to be implemented and will assist in informing the future Masterplan options. 2. It will be a requirement to carry out good construction and operational site management practices which will include, but not be limited to: pollution prevention and control, sediment management, suitable storage of hazardous materials, minimising surface water runoff and flow from sites, bunded refuelling areas, general housekeeping, exposed soil management and dust control. These practices will be assessed at a project specific level during development of individual Masterplan developments and with all future DPC activities being undertaken in accordance with the requirements of 3. Identification of areas and sites contaminated with free phase product from records held in the DPC GIS system prior to construction works. 4. Consideration should be given by DPC to the development of an Integrated Environmental Management Plan for the port area.	
	Short-term residual effects:		0
	Medium- to long-term residual effects:	The above mitigation, if implemented successfully is expected to remove significant risks to the groundwater environment. At a strategic level, any negative impacts would be expected to be negligible provided further project specific design and construction planning considerations are implemented at the project stage.	0

5. Noise

<p>Feature or Performance Indicator / Area:</p>	<p>Residents in the immediate vicinity such as Coastguard Cottages (Pigeon House Road), and Clontarf Road and also sensitive receptors in the near vicinity.</p>	
<p>Potential Issues:</p> <p>Certain projects which enable greater freight and passenger throughput at the port can be seen to facilitate a potential increase in the duration of noisy activities and the amount of traffic noise generated. However, it is noted that DPC tenants are responsible for undertaking their site operations and activities in accordance with any planning, licensing and legal requirements.</p> <p>The introduction of the Dublin Port Tunnel has relieved congestion in the city and diverted traffic away from residential areas.</p> <p>Infill and expansion of the port surface area will result in the introduction of new noise sources to the environment.</p>	<p>Feature Importance or Indicator Sensitivity:</p> <p>High</p>	<p>Rationale for Categorisation:</p> <p>Residents of the Coastguard Cottages have issued proceedings alleging noise related nuisance issues.</p> <p>Traffic on Sean Moore Road and the R131 between Sean Moore Road and the East Link Toll Booth is the dominant noise source in the area.</p> <p>Currently, noise sources within Dublin Port include but are not limited to Ro-Ro and Lo-Lo terminals and berths, container storage terminals, road traffic and various industrial/ commercial premises.</p> <p>Current Daytime Noise level range approximately 60-70dBA in the immediate vicinity of Port (Dublin Agglomeration Action Plan Relating to the Assessment and Management of Environmental Noise,2008)</p> <p>Current Nighttime noise range approximately 50-60dBA in the immediate vicinity of the Port (Dublin Agglomeration Action Plan Relating to the Assessment and Management of Environmental Noise,2008)</p> <p>Models show that road traffic alone would generate noise at or beyond the above levels, and they are designated by Dublin City Council as being 'undesirable'. They are also significantly above noise limits established by the combination of the IPPC regulatory framework and EPA guidelines.</p>
<p>Mitigation Already Incorporated Into Masterplan:</p>	<p>Maximisation of public transport potential and walking / cycling access can help to reduce road traffic within and around the port, and thus the noise associated with traffic.</p> <p>General maintenance of current distribution of port uses - no sensitive receptors in the immediate vicinity are expected to be brought into closer proximity to potential sources of noise at the port.</p>	
<p>Short-term effects before mitigation:</p>	<p>Most construction activities would not be in the immediate vicinity of receptors, however construction activities associated with the Masterplan developments may include dredging, berth deepening, quay wall construction, reclamation, and piling. These activities may increase noise levels in the vicinity of the construction area, and somewhat beyond depending upon the local noise environment and atmospheric conditions.</p> <p>Traffic noise emissions associated with construction plant, deliveries of materials and construction workers movements to and from site may increase noise levels in the vicinity of the development and roads leading in and out of the area. As identified above, the introduction of the Dublin Port Tunnel has resulted in HGV traffic being diverted away from the city centre and residential areas.</p>	<p>--</p>
<p>Medium- to long-term effects before mitigation:</p>	<p>There is minimal potential for increasing noise impacts at these receptors as a result of the Masterplan, however given their high sensitivity from pre-existing noise, any increase in noise from traffic or additional throughput at the port may lead to a significant adverse impact. This will require further investigation and mitigation at the project level - see below recommendations.</p> <p>Operational nighttime noise is more likely to be a relevant issue than daytime noise. It needs to be considered whether accommodating larger ships resulting from the development of future Masterplan options could allow for an increasing duration of Ro-Ro/Lo-Lo activity at night.</p>	<p>--</p>

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<p>Key assumptions within assessment:</p>	<p>Assumes a 'worst case' that larger ships lead to noticeably longer nighttime port activity, and also that traffic noise is noticeably increased.</p> <p>All planning and licensing requirements including Environmental Impact Assessment, IPPC and Foreshore Licensing etc. where applicable, for subsequent developments associated with the Masterplan, will be addressed in accordance with the legal requirements and consultation with the relevant authorities.</p> <p>Noise modelling data collected by DPC will be used as baseline data to inform future noise monitoring / modelling assessments and assist in identifying appropriate mitigation measures on an individual development basis.</p>	
<p>Mitigation Recommended:</p>	<p>DPC will continue to liaise with residents with regards to any future complaints regarding nighttime noise emissions. Combined with this, DPC should consider the development of an Integrated Environmental Management Plan for the port area which will address the aspect of noise emissions, and will specifically consider and address the implications of increased throughput and how these increases influence operations on individual sites.</p> <p>Individual planning applications and associated environmental assessments, for port development should consider the cumulative increase in noise generated in the vicinity of receptors, including the influence of traffic. As part of the Intergrated Environmental Management Plan, DPC will review these assessments to ensure future projects are being managed in an appropriate way.</p> <p>Also as part of the above, the need for construction mitigation should be considered, including limiting working hours and temporary noise barriers, as appropriate to the activity and potential receptors.</p> <p>DPC will liaise, as required with DCC with regards to the future development and implementation of noise actions plans in accordance with the Environmental Noise Directive (2002/49/EC).</p> <p>The DPC ISO14001 EMS facilitates the recording and management of external communications such as complaints regarding noise emissions. Complaints issued to DPC are logged and communicated to relevant DPC personnel and/or tenants by the DPC Public Relations Department.</p>	
<p>Short-term residual effects:</p>	<p>With construction mitigation in place, it is envisaged that noise impacts would be negligible.</p>	<p>0</p>
<p>Medium- to long-term residual effects:</p>	<p>In the medium to long term it is considered that the increase throughput and developments associated with the Masterplan and additional noise sources will result in a minor adverse residual impact for the receptors immediately adjacent to Dublin Port.</p>	<p>–</p>

	<p>Feature or Performance Indicator / Area:</p>	<p>Residents in the near vicinity of the Port, and other sensitive receptors - Pigeon House Road, Schools in East Wall, Clontarf and Sandymount, Users of Ringsend Park, Irishtown Nature Park, Sean Moore Park</p>
	<p>Potential Issues:</p> <p>Certain projects which enable greater freight and passenger throughput at the port can be seen to facilitate a potential increase in the duration of noisy activities and the amount of traffic noise generated. However, DPC tenants are responsible for undertaking their site operations and activities in accordance with any planning, licensing and legal requirements.</p> <p>The introduction of the Dublin Port Tunnel has relieved congestion in the city and diverted traffic away from residential areas.</p> <p>Infill and expansion of the port surface area will result in the introduction of new noise sources to the environment</p>	<p>Feature Importance or Indicator Sensitivity:</p> <p style="text-align: center;">Medium</p> <p>Rationale for Categorisation:</p> <p>The immediate noise environment of Dublin Port is predominantly Industrial in Nature at present.</p> <p>Traffic within Dublin City (including Dublin Port) is a significant noise source.</p> <p>Currently, noise sources within Dublin Port include but are not limited to Ro-Ro and Lo-Lo terminals and berths, container storage terminals, road traffic and various industrial/ commercial premises.</p>
<p>Mitigation Already Incorporated Into Masterplan:</p>	<p>Maximisation of public transport potential and walking / cycling access can help to reduce road traffic within and around the port, and thus the noise associated with traffic.</p> <p>General maintenance of current distribution of port uses - no sensitive receptors in the immediate vicinity are expected to be brought into closer proximity to potential sources of noise at the port.</p>	
<p>Short-term effects before mitigation:</p>	<p>Most construction activities would not be in the immediate vicinity of receptors, however construction activities associated with the Masterplan developments may include dredging, berth deepening, quay wall construction, reclamation, and piling. These activities may increase noise levels in the vicinity of the construction area, and somewhat beyond depending upon the local noise environment and atmospheric conditions.</p> <p>Traffic noise emissions associated with construction plant, deliveries of materials and construction workers movements to and from site may increase noise levels in the vicinity of the development and roads leading in and out of the area.</p>	<p style="text-align: center;">-</p>
<p>Medium- to long-term effects before mitigation:</p>	<p>There is minimal potential for increasing noise impacts at these receptors as a result of the Masterplan, however given their sensitivity from pre-existing noise, any increase in noise from traffic or additional throughput at the port may lead to a significant adverse impact. This will require further investigation and mitigation at the project level - see below recommendations.</p> <p>Operational nighttime noise is more likely to be a relevant issue than daytime noise. It needs to be considered whether accommodating larger ships resulting from the development of future Masterplan options could allow for an increasing duration of Ro-Ro/Lo-Lo activity at night.</p>	<p style="text-align: center;">-</p>
<p>Key assumptions within assessment:</p>	<p>Assumes a 'worst case' that larger ships lead to noticeably longer nighttime port activity, and also that traffic noise is noticeably increased.</p> <p>All planning and licensing requirements including Environmental Impact Assessment, IPPC, Foreshore Licensing where applicable, for subsequent developments associated with the Masterplan, will be addressed in accordance with the legal requirements and consultation with the relevant authorities.</p> <p>Noise modelling data collected by DPC will be used as baseline data to inform future noise monitoring / modelling assessments and assist in identifying appropriate mitigation measures on an individual development basis.</p>	

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	<p>Mitigation Recommended:</p>	<p>DPC will continue to liaise with residents with regards to any future complaints regarding nighttime noise emissions. Combined with this, DPC should consider the development of an Integrated Environmental Management Plan for the port area which will address the aspect of noise emissions, and will specifically consider and address the implications of increased throughput and how these increases influence operations on individual sites.</p> <p>Individual developments planning applications and associated environmental assessments, for port development should consider the cumulative increase in noise generated in the vicinity of receptors, including the influence of traffic. As part of the Integrated Environmental Management Plan, DPC will review these assessments to ensure future projects are being managed in an appropriate way.</p> <p>Also as part of the above, the need for construction mitigation should be considered, including limiting working hours and temporary noise barriers, as appropriate to the activity and potential receptors.</p> <p>DPC will liaise, as required with DCC with regards to the future development and implementation of noise actions plans in accordance with the Environmental Noise Directive (2002/49/EC).</p> <p>The DPC ISO14001 EMS facilitates the recording and management of external communications such as complaints regarding noise emissions. Complaints issued to DPC are logged and communicated to relevant DPC personnel and/or tenants by the DPC Public Relations Department.</p>
	<p>Short-term residual effects:</p>	<p>With construction mitigation in place, it is envisaged that noise impacts would be negligible.</p> <p style="text-align: right;">0</p>
	<p>Medium- to long-term residual effects:</p>	<p>It is envisaged that the mitigation identified above, the current baseline conditions and the distance of the receptors from Dublin Port, additional noise caused by the Masterplan would be negligible increases relative to other background noise.</p> <p style="text-align: right;">0</p>

5A	Feature or Performance Indicator / Area:		Residential Receptors of Ringsend, Sandymount, Clontarf and East Wall - General	
	Potential Issues:	Feature Importance or Indicator Sensitivity:		
		Medium		
	<p>Certain projects which enable greater freight and passenger throughput at the port can be seen to facilitate a potential increase in the duration of noisy activities and the amount of traffic noise generated. However, DPC tenants are responsible for undertaking their site operations and activities in accordance with any planning, licensing and legal requirements.</p> <p>The introduction of the Dublin Port Tunnel has relieved congestion in the city and diverted traffic away from residential areas.</p> <p>Infill and expansion of the port surface area will result in the introduction of new noise sources to the environment</p>		<p>Rationale for Categorisation:</p> <p>The immediate noise environment of Dublin Port is predominantly Industrial in Nature at present.</p> <p>Traffic within Dublin City (including Dublin Port) is a significant noise source.</p> <p>Currently, noise sources within Dublin Port include but are not limited to Ro Ro and Lo-Lo terminals and berths, container storage terminals, road traffic and various industrial/ commercial premises.</p>	
	Mitigation Already Incorporated Into Master Plan:			Maximisation of public transport potential and walking / cycling access may help to reduce road traffic within and around the port, and thus the noise associated with traffic.
	Short-term effects before mitigation:		<p>Construction activities associated with the Masterplan developments may include dredging, berth deepening, quay wall construction, reclamation, and piling. These activities may increase noise levels in the vicinity of the construction area.</p> <p>Traffic noise emissions associated with construction plant, deliveries of materials and construction workers movements to and from site may increase noise levels in the vicinity of the development and roads leading in and out of the area.</p>	0
	Medium- to long-term effects before mitigation:		Aside from those receptors considered above, there is minimal potential for increasing noise impacts in the wider communities of Clontarf, Sandymount, Ringsend and East wall as a result of the Masterplan, due to the distance of the receptors from Port activities and the dominant traffic noise in many of these areas. This will require further investigation and clarification at a project level.	0
	Key assumptions within assessment:		<p>All planning and licensing requirements including Environmental Impact Assessment, IPPC and Foreshore Licensing where applicable, for subsequent developments associated with the Masterplan, will be addressed in accordance with the legal requirements and consultation with the relevant authorities.</p> <p>Noise monitoring data collected by DPC will be used in addition to project specific data to inform future noise monitoring/modelling assessments and assist in identifying appropriate mitigation measures on an individual development basis.</p>	
Mitigation Recommended:		Individual developments planning applications and associated environmental assessments, for port development should consider the cumulative increase in noise generated in the vicinity of receptors, including the influence of traffic. As part of the Intergrated Environmental Management Plan, DPC will review these assessments to ensure future projects are being managed in an appropriate way.		
Short-term residual effects:		With construction mitigation in place, it is envisaged that any negative impacts would be temporary in nature and are expected to be negligible.	0	
Medium- to long-term residual effects:		It is envisaged that the mitigation identified above, the current baseline conditions and the distance of the receptors from Dublin Port, additional noise caused by the Masterplan would be negligible increases relative to other background noise.	0	

6. Air

	<p>Feature or Performance Indicator / Area:</p>	<p>Residential /Sensitive Receptors in the immediate vicinity (Coastguard Cottages (Pigeon House Road) and Clontarf Road</p>
<p>Potential Issues:</p>	<p>Some Masterplan developments which will enable greater traffic throughput (vehicles and vessels) and greater freight handling throughput due to increased operational efficiencies may be seen to facilitate a potential increase in air emissions of Nitrogen Dioxide, Sulphur Dioxide and Particulate Matter in the Port and its environs.</p> <p>Nuisance dust emissions from construction activities and bulk handling activities in the vicinity of the sites.</p>	<p>Feature Importance or Indicator Sensitivity:</p> <p style="text-align: center;">Medium</p> <p>Rationale for Categorisation:</p> <p>The main sources of air pollutant emissions to the atmosphere at Dublin Port are road and sea traffic, and industrial processes and other port related businesses being operated within the Port estate.</p> <p>The area immediately surrounding Dublin Port is predominantly industrial in nature. However, sensitive receptors are located in close radius to the Port and in proximity to some roads outside the Port such as Pigeon House Road and Clontarf Road.</p> <p>Air quality in Dublin is regarded as being good (EPA).</p> <p>Concentrations of SO₂, PM_{2.5} and PM₁₀ in Dublin are reported below the maximum daily and annual legislated limit values.</p> <p>Concentrations of NO₂ in Dublin in 2009 were below the annual limit value, with the exception of one city centre location. It is noted that the NO₂ concentration in Dublin is close to the legislative limit values as a result of traffic levels in the city.</p>
<p>Mitigation Already Incorporated Into Masterplan:</p>	<p>Maximisation of public transport potential and walking / cycling access may help to reduce road traffic within and around the port, and thus air emissions associated with traffic.</p>	
<p>Short-term effects before mitigation:</p>	<p>Additional air emissions of NO₂, SO₂ and Particulate Matter due to emissions from deliveries of materials and construction workers movements to and from site will increase vehicle movements in the vicinity of the development and roads leading in and out of the area.</p> <p>Construction activities associated with the Masterplan developments may include stockpiling, excavation, quay wall construction, reclamation, and piling. These activities may give rise to nuisance dust emissions in the vicinity of the construction area.</p>	<p style="text-align: center;">-</p>
<p>Medium- to long-term effects before mitigation:</p>	<p>Future development and the increase in throughput resulting from greater operational efficiencies may give rise to an increase in air emissions of NO₂, SO₂ and PM due to:</p> <ul style="list-style-type: none"> -Increased throughput of Lo-Lo may give rise to additional air emissions from container handling and transport plant; -Increased throughput of Ro-Ro may give rise to additional air emissions from vehicles movements. -Increased throughput of Bulk handling activities may result in an increase in nuisance dust. 	<p style="text-align: center;">-</p>
<p>Key assumptions within assessment:</p>	<p>All planning and licensing requirements including Environmental Impact Assessment, IPPC and Foreshore Licensing where applicable, for subsequent developments associated with the Masterplan, will be addressed in accordance with the legal requirements and consultation with the relevant authorities.</p> <p>The 5 axle ban in place in Dublin City for 7am to 7pm which prevents 5 axle HGVs entering the residential areas of Clontarf, Sandymount, Ringsend and East Wall will remain operational. HGV related emissions will not be increased in these areas due to the Dublin Port Master Plan developments.</p>	

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	<p>Mitigation Recommended:</p>	<p>Dust suppression measures shall be employed during construction such as, but not limited to:</p> <ul style="list-style-type: none"> -Any Stockpiles of dusty materials dampened down using water sprays during dry weather; -Access to the site will be from a single location. Roads should be kept free of dust and cleaned as far as practicable; -Routes will be regularly damped down using water bowsers during periods of dry weather as necessary; -Appropriate speed limits will be established and enforced over all unmade surfaces; -Wheel washing facilities will be installed as necessary and heavy vehicles leaving the site will be required to use the installations as appropriate. <p>The development of the Masterplan options presents the opportunity to increase the levels of rail transport in the transportation and delivery of freight to and from the port and also in the introduction and usage of container handling equipment which is electrically powered.</p> <p>Air quality impact assessments shall be made during the future planning and development stages of the Masterplan Options. The local air quality measurements of NO2 and SO2 undertaken by DPC within the Port estate together with air quality data from publicly available reports such as the EPA reports will be used to assist in determining the air quality conditions within Dublin Port. Traffic growth and levels of traffic resulting from the Dublin Port Master Plan must be managed effectively.</p>	
	<p>Short-term residual effects:</p>	<p>Any negative impacts with regards of nuisance dust from construction activities would being temporary and localised in nature and are expected to be negligible due to the industrial nature of the Port and the relative distance to sensitive receptors .</p>	<p>0</p>
	<p>Medium- to long-term residual effects:</p>	<p>Levels of Sulphur Dioxide has improved significantly since the 1990s, and particulate matter levels have been decreasing in the Dublin area since 2003. It is considered that this trend will continue, or as a minimum, remain static in future years.</p> <p>In terms of Nitrogen Dioxide, the pollutant concentrations in zones across Ireland have been identified to be predominantly static since approximately 2002. However, the EPA have identified that some monitoring stations in Dublin being increasingly impacted by traffic levels. The EPA identifies that the continued increase in NO2 emissions in Dublin may lead to future breaches in the legislative limit. This will be taken into consideration for future Masterplan developments. However, overall, it is considered that the effects of the Masterplan will be negligible with respect to air quality.</p>	<p>0</p>

	Feature or Performance Indicator / Area: Residential/Sensitive Receptors of Ringsend, Sandymount, Clontarf and East Wall - General	
Potential Issues:	<p>Some Masterplan developments which will enable greater traffic throughput (vehicles and vessels) and greater freight handling throughput due to increased operational efficiencies may be seen to facilitate a potential increase in air emissions of Nitrogen Dioxide, Sulphur Dioxide and Particulate Matter in the Port and its environs.</p> <p>Nuisance dust emissions from construction activities and bulk handling activities in the vicinity of the sites.</p>	Feature Importance or Indicator Sensitivity: Low
Mitigation Already Incorporated Into Masterplan:	Maximisation of public transport potential and walking / cycling access may help to reduce road traffic within and around the port, and thus air emissions associated with traffic.	
Short-term effects before mitigation:	<p>Additional air emissions of NO₂, SO₂ and Particulate Matter due to emissions from deliveries of materials and construction workers movements to and from site will increase vehicle movements in the vicinity of the development and roads leading in and out of the area.</p> <p>Construction activities associated with the Masterplan developments may include stockpiling, excavation, quay wall construction, reclamation, and piling. These activities may give rise to nuisance dust emissions in the vicinity of the construction area.</p>	0
Medium- to long-term effects before mitigation:	<p>Future Development and the increase in throughput resulting from greater operational efficiencies may give rise to an increase in air emissions of NO₂, SO₂ and PM due to:</p> <ul style="list-style-type: none"> -Increased throughput of Lo-Lo may give rise to additional air emissions from container handling and transport plant; -Increased throughput of Ro-Ro may give rise to additional air emissions from vehicles movements. -Increased throughput of Bulk handling activities 	-
Key assumptions within assessment:	<p>All planning and licensing requirements including Environmental Impact Assessment, IPPC and Foreshore Licensing where applicable, for subsequent developments associated with the Masterplan, will be addressed in accordance with the legal requirements and consultation with the relevant authorities.</p> <p>The 5 axle ban in place in Dublin City for 7am to 7pm which prevents 5 axle HGVs entering the residential areas of Clontarf, Sandymount, Ringsend and East Wall will remain operational. HGV related emissions will not be increased in these areas due to the Dublin Port Masterplan developments.</p>	

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	<p>Mitigation Recommended:</p>	<p>Dust suppression measures shall be employed during construction such as, but not limited to:</p> <ul style="list-style-type: none"> -Any Stockpiles of dusty materials dampened down using water sprays during dry weather; -Access to the site will be from a single location. Roads should be kept free of dust and cleaned as far as practicable; -Routes will be regularly dampened down using water bowsers during periods of dry weather as necessary; -Appropriate speed limits will be established and enforced over all unmade surfaces; -Wheel washing facilities will be installed as necessary and heavy vehicles leaving the site will be required to use the installations as appropriate. <p>The development of the Masterplan options presents the opportunity to increase the levels of rail transport in the transportation and delivery of freight to and from the port and also in the introduction and usage of container handling equipment which is electrically powered</p> <p>Air quality impact assessments shall be made during the future planning and development stages of the Masterplan Options. The local air quality measurements of NO2 and SO2 undertaken by DPC within the Port estate will be used to assist in determining the air quality conditions within Dublin Port together with air quality data from publicly available reports such as the EPA reports. Traffic growth and levels of traffic resulting from the Masterplan must be managed effectively.</p>	
	<p>Short-term residual effects:</p>	<p>Any negative impacts with regards of nuisance dust from construction activities would being temporary localised in nature and are expected to be negligible due to the industrial nature of the Port and the relative distance to sensitive receptors .</p>	<p>0</p>
	<p>Medium- to long-term residual effects:</p>	<p>Levels of Sulphur Dioxide has improved significantly since the 1990s, and particulate matter levels have been decreasing in the Dublin area since 2003. It is considered that this trend will continue, or as a minimum, remain static in future years.</p> <p>In terms of Nitrogen Dioxide, the pollutant concentrations in zones across Ireland have been identified to be predominantly static since approximately 2002. However, the EPA have identified that some monitoring stations in Dublin being increasingly impacted by traffic levels. The EPA identifies that the continued increase in NO2 emissions in Dublin may lead to future breaches in the legislative limit. This will be taken into consideration for future Masterplan developments. However, overall, it is considered that the effects of the Masterplan will be negligible with respect to air quality.</p>	<p>0</p>

7. Cultural Heritage

	<p>Feature or Performance Indicator / Area:</p>	<p>Assets assessed by Dublin City Council's Inventory of Industrial Heritage to be of National merit (e.g. Pigeon House Power Station)</p>
	<p>Potential Issues Addressed:</p> <p>- Impacts on setting of Pigeon House Power Station due to increased port development and land reclamation to the north.</p>	<p>Feature Importance or Indicator Sensitivity:</p> <p>Rationale for Categorisation:</p>
<p>Mitigation Already incorporated into Masterplan:</p>	<p>- The Masterplan Includes a commitment to develop a Public Amenities Area around the Pigeon House Power Station (RPS reference 6796).</p>	
<p>Short-term effects before mitigation:</p>	<p>- Temporary visual and noise intrusion on the setting of the Power Station due to construction activities and the presence of construction machinery. However, using professional judgment and guided by the matrix, given the industrial nature of the setting of the powerstation the short-term effect is assessed as moderate adverse.</p>	<p>--</p>
<p>Medium- to long-term effects before mitigation:</p>	<p>- Impacts on the setting of the Power Station due to the presence and operation of new port facilities.</p>	<p>--</p>
<p>Key assumptions within assessment:</p>	<p>There will be no physical impacts on the Power Station as a result of the Masterplan. - Pigeon House Harbour will be maintained as a water space. - Landscape enhancement proposals in the Masterplan will be treated as firm commitments and thus delivered, helping to reduce potential impacts on the setting of the Power Station. - All planning requirements for subsequent developments associated with the Dublin Port Masterplan will be addressed in accordance with legal requirements and in consultation with Dublin City Conservation team and the Department of Arts, Heritage and the Gaeltacht.</p>	
<p>Mitigation Recommended:</p>	<p>- Measures to mitigate potential impacts on the setting of Pigeon House Power Station will be considered as an integral part of the detailed design of the Dublin Port Masterplan. - Development of appropriate landscaping proposals to reduce impacts on the setting of the Power Station within the Public Amenities Area. This should include possible public interpretation of the building's history.</p>	
<p>Short-term residual effects:</p>	<p>- Temporary visual and noise intrusion on the setting of the Power Station due to construction activities and the presence of construction machinery. However, using professional judgment and guided by the matrix, given the industrial nature of the setting of the powerstation the short-term effect is assessed as moderate adverse.</p>	<p>-</p>
<p>Medium- to long-term residual effects:</p>	<p>With the implementation of mitigation such as that detailed in Section 14.2.14 of the SEA Draft ER, the impact on architectural assets of high importance using professional judgment and guided by the matrix presented in Section 2, is assessed as Moderate to Slight Adverse</p>	<p>-</p>

7A

7A	Feature or Performance Indicator / Area:		- Protected Structures or non-designated assets which meet that designation criteria - assets assessed by the Dublin Inventory of Industrial Heritage to be of Regional merit (e.g. flour mill, North Wall Graving Dock)
	Potential Issues Addressed:	- assets of regional merit recorded in the Dublin Inventory of Industrial Heritage are present to the north and south of Dublin Harbour within Dublin Port. - A number of Protected Structures are present in the area of Pigeon House Road within and adjacent to Dublin Port. - The Masterplan may result in partial or total removal of historic fabric from assets identified on the Dublin Inventory of Industrial Heritage to be of Regional merit. - Impacts on setting may also result from increased port development.	Feature Importance or Indicator Sensitivity: Medium Rationale for Categorisation: Designated and protected under the Planning and Development Act 2000 or assessed by Dublin City Council as being of Regional merit.
	Mitigation Already Incorporated Into Masterplan:	- The Dublin Port Masterplan Includes a commitment to develop a Public Amenities Area around Pigeon House Fort and the Former Pigeon House Hotel (RPS references 6794 and 6795). - Environmental enhancements / boundary softening to north, south and west boundaries of the Port estate.	
	Short-term effects before mitigation:	- Temporary visual and noise intrusion on the setting of Architectural Heritage assets of Medium value due to construction activities and the presence of construction machinery.	-
	Medium- to long-term effects before mitigation:	- Partial or total removal of historic fabric from Architectural Heritage assets of Medium value. - Impacts on the setting of Architectural Heritage assets of Medium value due to the presence and operation of new port facilities.	--
	Key assumptions within assessment:	- There will be no physical impacts on Protected Structures as a result of the Dublin Port Masterplan. - Landscape enhancement proposals in the Masterplan will be treated as firm commitments and thus delivered, helping to reduce potential impacts on the setting of Protected Structures. - All planning requirements for subsequent developments associated with the Dublin Port Masterplan will be addressed in accordance with legal requirements and in consultation with Dublin City Conservation team and the Department of Arts, Heritage and the Gaeltacht.	
	Mitigation Recommended:	- Detailed design of individual developments of the Dublin Port Masterplan will be undertaken to avoid physical impacts on Architectural Heritage assets of Medium value and enable preservation in situ as far as possible. - Where preservation in situ is not possible, architectural heritage recording will be undertaken to provide a permanent record of the asset and its setting, and the findings appropriately disseminated. - Measures to reduce potential impacts on the setting of Architectural Heritage assets of Medium value will be developed as an integral part of the future environmental impact assessment and planning applications for individual developments of the Masterplan. - Development of landscaping proposals to improve the setting of Architectural Heritage assets of Medium value within the Public Amenities Area, possibly including public interpretation of the buildings' history.	
	Short-term residual effects:	- Temporary visual and noise intrusion on the setting of Architectural Heritage assets of Medium value due to construction activities and the presence of construction machinery.	-
Medium- to long-term residual effects:	It is considered that the draft Dublin Port Masterplan developed in conjunction with the requirements of the SEA Draft Environmental Report will have a Slight Adverse residual impact on Architectural Heritage Assets of Medium value in the Medium to long term.	-	

	Feature or Performance Indicator / Area:	<ul style="list-style-type: none"> - Architectural Heritage assets which, whilst not designated, meet some of the criteria for designation as Protected Structures. - Conservation Areas designated under the local development plan (e.g. Pigeon House Harbour and the Great South Wall)
	Potential Issues Addressed:	<p>Feature Importance or Indicator Sensitivity: Low</p> <p>Rationale for Categorisation:</p> <ul style="list-style-type: none"> - Potential for undesignated architectural heritage assets of Low value to be present within Dublin Port. - Development of the Masterplan may result in the partial or total removal of these assets, or impacts on setting due to increased port development. - Assets which hold some cultural heritage value and are important on a local scale. - Areas that have been identified by Dublin City Council Development Plan for their contribution to the heritage of the city.
	Mitigation Already Incorporated Into Masterplan:	<ul style="list-style-type: none"> - The Dublin Port Masterplan includes a commitment to develop a Public Amenities Area which includes the Pigeon House conservation area. - Environmental enhancements / boundary softening to north, south and west boundaries of the Port estate.
	Short-term effects before mitigation:	<ul style="list-style-type: none"> - Temporary visual and noise intrusion on the setting of Architectural Heritage assets of Low value due to construction activities and the presence of construction machinery. <p style="text-align: right; background-color: #FFB6C1; padding: 2px;">-</p>
	Medium- to long-term effects before mitigation:	<ul style="list-style-type: none"> - Partial or total removal of historic fabric from undesignated Architectural Heritage assets of Low value. - Impacts on the setting of Architectural Heritage assets of Low value due to the presence and operation of new port facilities. <p style="text-align: right; background-color: #FFA500; padding: 2px;">--</p>
7B	Key assumptions within assessment:	<ul style="list-style-type: none"> - Landscape enhancement proposals in the Masterplan will be treated as firm commitments and thus delivered, helping to reduce potential impacts on the setting of Architectural Heritage assets of Low value. - All planning requirements for subsequent developments associated with the Dublin Port Masterplan will be addressed in accordance with legal requirements and in consultation with Dublin City Conservation team and the Department of Arts, Heritage and the Gaeltacht.
	Mitigation Recommended:	<ul style="list-style-type: none"> - Detailed design of individual developments of the Dublin Port Masterplan to avoid physical impacts on Architectural Heritage assets of Low value and enable preservation in situ as far as possible. - Where preservation in situ is not possible, appropriate architectural heritage recording will be undertaken to provide a permanent record of the asset and the findings appropriately disseminated. - Measures to reduce potential impacts on the setting of Architectural Heritage assets of Low value will be developed as an integral part of the future environmental impact assessment and planning applications for individual developments of the Masterplan. - Development of appropriate landscaping proposals to improve the setting of Architectural Heritage assets of Low value within the Public Amenities Area, possibly including public interpretation of the area's history.
	Short-term residual effects:	<ul style="list-style-type: none"> - Temporary visual and noise intrusion on the setting of Architectural Heritage assets of Low value due to construction activities and the presence of construction machinery. <p style="text-align: right; background-color: #FFB6C1; padding: 2px;">-</p>
	Medium- to long-term residual effects:	<ul style="list-style-type: none"> - It is considered that the draft Dublin Port Masterplan developed in conjunction with the requirements of the SEA Environmental Report will have a Neutral residual impact on Architectural Heritage assets of Low value in the Medium to Long term. <p style="text-align: right; padding: 2px;">0</p>

7C	Feature or Performance Indicator / Area:	<ul style="list-style-type: none"> - Undesignated Archaeological assets the preservation of which is of National Importance. - Assets included in the Shipwreck Inventory of Ireland
	Potential Issues Addressed: <ul style="list-style-type: none"> - Accurate locations of wrecks recorded in the Shipwreck Inventory of Ireland are not known and there is potential for such wrecks to be located within the proposed development areas. - Although the port is located within a largely reclaimed area, there is potential for archaeological remains to be present within the development area, the preservation of which is of National importance. - Construction or dredging may partially or totally remove archaeological remains. 	Feature Importance or Indicator Sensitivity: High Rationale for Categorisation: <ul style="list-style-type: none"> - Archaeological assets which, although undesignated, are of National importance. - Known shipwrecks identified by the Shipwreck Inventory of Ireland
Mitigation Already Incorporated Into Masterplan:	No mitigation measures incorporated at this stage.	
Short-term effects before mitigation:	None identified	0
Medium- to long-term effects before mitigation:	- Partial or total removal of archaeological remains of High value by dredging or construction activities.	---
Key assumptions within assessment:	<ul style="list-style-type: none"> - Delivery of individual projects or developments will include archaeological heritage assessments to ensure potential archaeological issues are identified early in the development process and the incorporation of appropriate mitigation within the Dublin Port Masterplan. - All planning requirements for subsequent developments associated with the Dublin Port Masterplan will be addressed in accordance with legal requirements and in consultation with the City Archaeologist and the Department of Arts, Heritage and the Gaeltacht. - A licence will be required for the majority of archaeological works including geophysical survey, trial trenching and monitoring. 	
Mitigation Recommended:	<ul style="list-style-type: none"> - Detailed desk-based assessment will be undertaken prior to the delivery of individual developments of the Masterplan, to more closely identify potential for shipwrecks and archaeological assets of High value within the development / dredging areas. This may be supplemented by non-intrusive archaeological survey where necessary. - Development of detailed design of the individual developments of the Masterplan to avoid direct impacts on Archaeological assets of High value and enable preservation in situ where possible. - Where preservation in situ is not possible, preservation by record will be undertaken, comprising fully recorded field investigations followed by analyses, reporting and publication. The information gained will then be disseminated by a series of printed and internet publications for the benefit of scholars and the general public. 	
Short-term residual effects:	None identified	0
Medium- to long-term residual effects:	With the implementation of appropriate mitigation as detailed in Section 14.2.10 – 14.2.16 for archaeological assets of high importance (e.g shipwrecks), Using professional judgment, and guided by the matrix presented in Section 2, the impact is assessed as Moderate to Slight Adverse	---

7D	Feature or Performance Indicator / Area:	<ul style="list-style-type: none"> - Recorded Monuments including Zones of Archaeological Importance. - Rare, well-preserved, undesignated archaeological assets with identifiable group value, a high degree of vulnerability and high amenity value. 	
	Potential Issues Addressed: <ul style="list-style-type: none"> - Zones of Archaeological importance and Recorded Monuments are present to the south of Dublin Harbour. - There is potential for archaeological remains of Medium importance to be present within the development area. - Construction may partially or totally remove archaeological remains. 	Feature Importance or Indicator Sensitivity: Medium Rationale for Categorisation: <ul style="list-style-type: none"> - Zones protected under the Dublin City Development Plan 2011-2017 - Undesignated archaeological assets which can provide a high level of archaeological evidence to enable the understanding and interpretation of the past. - Additional protection to Recorded Monuments provided by Section 12 (3) of the 1994 National Monument Act. 	
	Mitigation Already Incorporated Into Master Plan:	No mitigation measures incorporated at this stage.	
	Short-term effects before mitigation:	None identified	0
	Medium- to long-term effects before mitigation:	- Partial or total removal of archaeological remains of Medium value by construction activities.	---
	Key assumptions within assessment:	<ul style="list-style-type: none"> - Delivery of individual projects or developments will include archaeological heritage assessments to ensure potential archaeological issues are identified early in the development process and the incorporation of appropriate mitigation within the environmental impact assessment/planning application for the development. - All planning requirements for subsequent developments associated with the Dublin Port Masterplan will be addressed in accordance with legal requirements and in consultation with the City Archaeologist and the Department of Arts, Heritage and the Gaeltacht. - A licence will be required for the majority of any required archaeological works. This may include a requirement to undertake works such as geophysical surveying, trial trenching and monitoring. 	
	Mitigation Recommended:	<ul style="list-style-type: none"> - Detailed desk-based assessment to more closely identify potential for archaeological assets of Medium value within the development areas. This may be supplemented by non-intrusive archaeological survey where necessary. - Development of detailed design to avoid direct impacts on Archaeological assets of Medium value and enable preservation in situ where possible. - Where preservation in situ is not possible, preservation by record will be undertaken, comprising fully recorded field investigations followed by analyses, reporting and publication. The information gained will then be disseminated by a series of printed and internet publications for the benefit of scholars and the general public. 	
Short-term residual effects:	None identified	0	
Medium- to long-term residual effects:	-It is considered that the draft Dublin Port Masterplan developed in conjunction with the requirements of the SEA Environmental Report will have a Slightly Adverse residual impact on the Archaeological assets of Medium value in the medium to long term.	-	

7F	Feature or Performance Indicator / Area:		- Averagely well-preserved, undesignated archaeological assets with limited group value, limited vulnerability and low amenity value.
	Potential Issues Addressed:	- There is potential for archaeological assets of Low importance to be present within the development area. - Construction may partially or totally remove such assets.	Feature Importance or Indicator Sensitivity: Low Rationale for Categorisation: - Undesignated archaeological assets which provide a moderate level of archaeological evidence to enable the understanding and interpretation of the past.
	Mitigation Already Incorporated Into Master Plan:	No mitigation measures incorporated at this stage.	
	Short-term effects before mitigation:	None identified	0
	Medium- to long-term effects before mitigation:	- Partial or total removal of archaeological remains of Low value by construction activities.	--
	Key assumptions within assessment:	- Delivery of individual projects or developments will include archaeological heritage assessments to ensure potential archaeological issues are identified early in the development process and the incorporation of appropriate mitigation within the Dublin Port Masterplan. - All planning requirements for subsequent developments associated with the Dublin Port Masterplan will be addressed in accordance with legal requirements and in consultation with the City Archaeologist and the Department of Arts, Heritage and the Gaeltacht. - A licence will be required for the majority of archaeological works including geophysical survey, trial trenching and monitoring.	
	Mitigation Recommended:	- Detailed desk-based assessment to more closely identify potential for archaeological assets of Low value within the development areas. This may be supplemented by non-intrusive archaeological survey where necessary. - Development of detailed design to avoid direct impacts on Archaeological assets of Low value and enable preservation in situ where possible. - Where preservation in situ is not possible, preservation by record will be undertaken, comprising fully recorded field investigations followed by analyses, reporting and publication. The information gained will then be disseminated by a series of printed and internet publications for the benefit of scholars and the general public.	
	Short-term residual effects:	None identified	0
Medium- to long-term residual effects:	It is considered that the draft Dublin Port Masterplan developed in conjunction with the requirements of the SEA Draft Environmental Report will have a Neutral residual impact on the Archaeological assets of Low value in the medium to long term.	0	

8. Landscape		
	<p>Feature or Performance Indicator / Area: Industrial Character of the Port.</p>	
	<p>Potential Issues Addressed:</p> <ul style="list-style-type: none"> - The port's influence on the wider landscape / landscape quality, and in turn its influence on visual impacts and nearby residents. - Reducing landscape quality may also affect the setting of the River Liffey and Dublin Bay. - Projects such as new quay walls for cruise ships, interconnector bridge + the bridge required to access the car storage facility may bring additional visual impacts to residential areas. 	<p>Feature Importance or Indicator Sensitivity: Low</p>
	<p>Rationale for Categorisation: Low aesthetic value due to industrial nature of port activities.</p>	
<p>Mitigation Already Incorporated into Masterplan:</p>	<p>- Includes:</p> <ol style="list-style-type: none"> 1. A commitment to landscaping on the East Wall Road of the Port. 2. Additional grassland areas to be provided on the north and south shore of the port estate. 3. Landscaping screen along northern perimeter of the site. 4. Additional footpaths around the site, particularly to the north, will increase the ability of residents and others to enjoy existing features of the landscape, including views over the north side of Dublin Bay to the Tolka Estuary, Clontarf and Bull Island. 5. The Port will be viewed as a location for the display of art and installations on the Port Estate, on the Port boundary and surrounding area. 6. DPC commits to becoming involved in the development of a Port Cultural Centre to harness and direct cultural initiatives related to the Port or adjoining communities. 	
<p>Short-term effects before mitigation:</p>	<p>Construction based Impacts from:</p> <ol style="list-style-type: none"> 1. Temporary presence of construction compounds, machinery and construction traffic. 	-
<p>Medium- to long-term effects before mitigation:</p>	<ol style="list-style-type: none"> 1. Reclamation of land and new buildings increasing the visual envelope of the port and expanding its overall influence on the landscape. It is felt that the following groups of people could be affected in particular - recreational users of North Bull Wall and the Great South Wall, nearby local residences and passers-by at Alifie Byrne Road and East Wall Road, North from Clontarf Road, South from York Road, Pigeonhouse Road and Great South Wall and East from Bull Wall Road and North Bull Island. <p>These impacts can reduce the influence that other features such as views of the Clontarf coastline and sailboats anchored north of the port have on the wider landscape.</p>	-
<p>Key assumptions within assessment:</p>	Landscape enhancement proposals in the Masterplan will be treated as firm commitments and thus delivered, helping to screen the port from residential areas.	
<p>Mitigation Recommended:</p>	<p>Where possible, identify and use routes required for the delivery of construction materials which avoid residential areas. Where this may not be possible, use routes which are either already heavily trafficked by HGVs or which are in least proximity to the fewest views by residents.</p> <p>Appropriate landscaping and arboricultural input will be commissioned for future landscape enhancement proposals.</p> <p>Investigate the potential for use of emerging new technologies such as 'green walls' which involve the use of plant climbing systems.</p> <p>DPC will develop a Port Wide Landscape Plan relevant to the port estate and the Masterplan</p> <p>Develop measures to accommodate for any deterioration in the setting of the River Liffey, North Bull Island and Dublin Bay resulting from future developments. Good quality urban landscaping is required to provide a transitional zone between neighbouring uses and the port.</p>	
<p>Short-term residual effects:</p>	<p>There is the potential for minor negative effects resulting from the Masterplan due to the required presence of construction compounds, vehicles and other plant. There is a risk that temporary impacts will occur which requires project-specific assessment and consideration in the future. It is not impossible to eliminate this risk at the Masterplan level.</p>	-
<p>Medium- to long-term residual effects:</p>	<p>There are anticipated to be some residual adverse effects resulting from the proposed extension of the port eastwards and other infill in the south, however there will be trade offs with the potential benefits of proposed landscape enhancements.</p>	0

8A

	<p>Feature or Performance Indicator / Area:</p> <p>The visual integration between the port and the city.</p> <p>Barriers between the Port and the immediate area outside of the port estate.</p> <p>The port has an impact on residential views and views of Bull Island.</p> <p>Visitors travelling to and from the port on cruise ships do not have a welcome view of the port.</p>	Views of both the north and south side of the port, and Bull Island.	<p>Feature Importance or Indicator Sensitivity:</p> <p>High</p> <p>Views are severe and unwelcoming, particularly along East Wall Road where there is a high wall topped with security fencing. North Bull Island is an area of national landscape importance, and the port forms part of its setting.</p> <p>Areas surrounding the port estate are zoned within the Dublin City Development Plan as:</p> <p>Zone Z1: protect, provide and improve residential amenities</p> <p>Zone Z9: preserve, provide and improve recreational amenity and open spaces and green networks.</p>
<p>Potential Issues Addressed:</p>	<p>Rationale for Categorisation:</p>		<p>Mitigation Already Incorporated Into Masterplan:</p> <ol style="list-style-type: none"> 1. Boundary softening works to break down the physical barrier which exists between the Port and the immediate area outside the Port Estate. This will involve the provision of boundary softening measures along East Wall Road. 2. Fencing around the port installations on the south side will be reviewed to see how a functional but more appealing boundary can be erected. 3. Landscaping on the northern fringe of the port will be undertaken to ensure that the visual impact of the Port (in particular the oil tank farms) is less intrusive from the vantage point of Clontarf, Raheny and Sutton. 4. Dedicated cruise ship berths at North Wall Quay will make berthing of cruise liners closer to the city and will provide a dramatic backdrop. 5. The Port will be viewed as a location for the display of art and installations on the Port Estate, on the Port boundary and surrounding area. 6. DPC commits to becoming involved in the development of a Port Cultural Centre to harness and direct cultural initiatives related to the Port or adjoining communities.
<p>Short-term effects before mitigation:</p>	<p>Construction based Impacts from:</p> <ol style="list-style-type: none"> 1. Temporary presence of construction compounds, machinery and construction traffic. 		-
<p>Medium- to long-term effects before mitigation:</p>	<ol style="list-style-type: none"> 1. Enhanced view of port from outside of port estate and from nearby residential areas. Particularly important to residents to the north in the Clontarf area and also to those on Alfie Byrne Road and East Wall Road in the West, York Road, Pigeonhouse Road and Great South Wall in the South and Bull Wall Road and North Bull Island in the east. 2. Due to the proposed Dublin Gateway, residents and others in Clontarf will have greater views of the port and more restricted views of the Great South Wall and beyond, however views of the entire port will be softened by landscaping. 3. New cruise ship berths at North Wall Quay will provide a more visually appealing setting for passengers arriving to and from Dublin. 		++
<p>Key assumptions within assessment:</p>	<p>All Planning and licensing requirements for subsequent developments associated with the Masterplan will be addressed in accordance with legal requirements and in consultation with the relevant authorities.</p>		
<p>Mitigation Recommended:</p>	<p>Where possible, identify and use routes required for the delivery of construction materials which avoid residential areas. Where this may not be possible, use routes which are either already heavily trafficked by HGVs or which are in least proximity to the fewest views by residents.</p> <p>Appropriate landscaping and arboricultural input will be commissioned for future landscape enhancement proposals.</p> <p>Investigate the potential for use of emerging new technologies such as 'green walls' which involve the use of plant climbing systems.</p> <p>DPC will consider the development of a Port Wide Landscape Plan relevant to the port estate and the Masterplan</p> <p>Good quality urban landscaping is required to provide a transitional zone between neighbouring uses and the port.</p>		

8B

Short-term residual effects:	There is the potential for minor negative effects resulting from the Draft Masterplan due to the required presence of construction compounds, vehicles and other plant. There is a risk that temporary impacts will occur which requires project-specific assessment and consideration in the future. It is not impossible to eliminate this risk at the Masterplan level.	-
Medium- to long-term residual effects:	It is considered that the DPC Draft Masterplan developed in conjunction with recommended mitigation in place will have a moderate beneficial medium to long term residual effect on visual amenity due to proposed landscape enhancements.	++

9. Population, Human Health and Deprivation

	<p>Feature or Performance Indicator / Area:</p>	<p>Levels of deprivation.</p>
	<p>Potential Issues Addressed:</p> <p>Provision of access to additional amenities for local communities.</p> <p>A number of recreational areas and open space surround the port.</p> <p>Possible increase in traffic congestion, particularly during construction.</p> <p>Potential for increasing tourism within the port area. A number of tourist attractions are located within the Docklands area.</p>	<p>Feature Importance or Indicator Sensitivity:</p> <p>Low</p> <p>Rationale for Categorisation:</p> <p>The areas surrounding the port do not suffer high levels of deprivation. As of 2006, most deprived area surrounding port was measured to be marginally above average with Pembroke East B, Clontarf East A and Clontarf East D being very affluent.</p>
<p>9A</p> <p>Mitigation Already Incorporated into Masterplan:</p>	<ol style="list-style-type: none"> 1. Includes a commitment to addressing traffic management issues. 2. A new public foot / cycle path along the length of the north shore of the port estate. 3. Consideration of granting access or use to local communities of surplus port lands strictly for community purposes. 4. DPC commits to becoming involved in the development of a Port Cultural Centre to harness and direct cultural initiatives related to the Port or adjoining communities. 5. The Port will develop initiatives on the promotion of leisure activities such as sailing, swimming and fishing, possibly working with the established clubs on ways to involve more people in marine based activity. This could include the hosting of sailing regattas and the development of angling and sea swimming facilities on the North and Great South Walls. 6. Two public amenity areas are proposed, one to the south of the power station and a second to the east of the multi usage berth. 	
<p>Short-term effects before mitigation:</p>	<p>Construction based impacts from:</p> <ol style="list-style-type: none"> 1. Temporary increase in traffic to and from the port during construction of new facilities. 	<p>-</p>
<p>Medium- to long-term effects before mitigation:</p>	<ol style="list-style-type: none"> 1. New sustainable transport opportunities leading to minor medium to long term benefits to local communities and visitors to Dublin. 2. Benefits resulting from increased trade encouraging business start up and enhancement. 	<p>+</p>
<p>Key assumptions within assessment:</p>	<p>Masterplan proposals will improve interaction with local residences and sporting communities, reducing any potential adverse effects.</p> <p>That the north port estate secures sufficient means of transport to provide access for passengers from the ferry terminals to the Luas terminal.</p>	
<p>Mitigation Recommended:</p>	<p>n/a</p>	
<p>Short-term residual effects:</p>	<p>There is the potential for minor temporary negative effects resulting from the Masterplan due to construction vehicles which could result in traffic congestion. There is a risk that temporary impacts will occur which requires project-specific assessment and consideration in the future. It is not impossible to eliminate this risk at the Masterplan level.</p>	<p>-</p>
<p>Medium- to long-term residual effects:</p>	<p>Medium to long term residual effects are anticipated to be beneficial through improving accessibility of community facilities and facilities to local residents.</p>	<p>+</p>

	<p>Feature or Performance Indicator / Area:</p> <p>Potential Issues Addressed:</p> <p>Facilities such as Lo-Lo terminals are sources of noise emissions (see chapter 12 for more information).</p> <p>Sources of air pollution include the road network, sea traffic and industrial processes undertaken within the port (see chapter 13 for more information).</p> <p>The port has an impact on visual amenity of people living nearby (see Ref 15a and 15b for more information).</p> <p>A number of open spaces and recreational areas in the vicinity of the port.</p> <p>The location of a number of SEVESO classified sites within the port estate may be identified as having the potential to impact on human health.</p> <p>Increasing population in many areas surrounding the port.</p>	<p>Feature Importance or Indicator Sensitivity:</p> <p>Rationale for Categorisation:</p>	<p>Local population.</p> <p>Low</p> <p>According to the 2011 census, population has increased from 2006 to 2011 in 9 of 12 electoral divisions surrounding the ports (with exception of Clontarf East D and Clontarf West C and D which have seen a decline).</p> <p>Life expectancy according to CSO reports has increased for both males and females and trend is likely to continue.</p> <p>The census indicated that towards the end of 2007, nearly 90% of adults perceived themselves in good to very good health.</p> <p>The physical and mental health of the communities of Clontarf, East Wall, Irish Town and Ringsend are generally good.</p>
9B	<p>Mitigation Already Incorporated Into Masterplan:</p>	<p>Mitigation as per Sections 12, 13 and 5 including:</p> <ol style="list-style-type: none"> 1. A programme of noise monitoring is undertaken at Dublin Port and future development including construction equipment and additional traffic throughput will be monitored against the baseline conditions. This will assist in identifying suitable mitigation measures which may be required as a result of future developments. 2. Includes a commitment to addressing traffic management issues. 3. The Port will develop initiatives on the promotion of leisure activities such as sailing, swimming and fishing, possibly working with the established clubs on ways to involve more people in marine based activity. This could include the hosting of sailing regattas and the development of angling and sea swimming facilities on the North and Great South Walls. 4. Two public amenity areas are proposed, one to the south of the power station and a second to the east of the multi usage berth. 	
	<p>Short-term effects before mitigation:</p>	<p>Construction based Impacts from:</p> <ol style="list-style-type: none"> 1. Temporary presence of machinery and construction traffic on noise and air emissions. 	-
	<p>Medium- to long-term effects before mitigation:</p>	<p>The Masterplan incorporates mitigation which aims to reduce impacts from development of the port on the population. This should ensure that in the medium to long term there are no significant impacts occurring.</p>	0
	<p>Key assumptions within assessment:</p>	<p>Current port initiatives and momentum in monitoring and addressing air quality and noise issues will continue. Action will continue to be taken where potential increases in noise and air emissions are recorded and identified as resulting from port activities.</p>	
	<p>Mitigation Recommended:</p>	<p>Mitigation as per Sections 12 (noise) and 13 (air quality) and where possible, identify and use routes required for the delivery of construction materials which avoid residential areas. Where this may not be possible, use routes which are either already heavily trafficked by HGVs or which are in least proximity to the fewest views by residents.</p> <p>Incorporate measures to protect and enhance the health and safety of staff working at the port and visitors when planning for new development.</p>	
	<p>Short-term residual effects:</p>	<p>Potential temporary impacts of construction on noise and air emissions. There is a risk that temporary impacts will occur which requires project-specific assessment and consideration in the future. It is not impossible to eliminate this risk at the Masterplan level.</p>	-
	<p>Medium- to long-term residual effects:</p>	<p>It is considered that the Masterplan developed in conjunction with recommended mitigation in place will have a neutral medium to long term residual effect on the population.</p>	0

9C	Feature or Performance Indicator / Area:	Unemployment levels in Dublin.		
	Potential Issues Addressed:	<p>There is a need for new job opportunities for local communities.</p> <p>The port provides trade to local businesses and industry and this is anticipated to increase in the future.</p> <p>Tourism is anticipated to rise although public transport access into the port requires to be improved.</p> <p>The skills of people living in local communities can be improved through programmes to meet the potential skill set required for people who wish to seek employment in the Port Estate. The port's existing programme for support of community education will be maintained.</p>	Feature Importance or Indicator Sensitivity:	High
	Rationale for Categorisation:	<p>The Quarterly National Household Survey illustrated an increase in unemployment over 2005-2011.</p> <p>The Port lacks formalised pedestrian areas, particularly in the north.</p>		
	Mitigation Already Incorporated into Masterplan:	<ol style="list-style-type: none"> 1. Ensure that public transport provision is provided to the passenger ferry terminals linking with the LUAS terminal at Point Depot. 2. Review the potential for increased public transport links through Poolbeg Peninsula right down to the Great South Wall. 3. Provision of access for visiting passengers and cruise liner crew to the city via the LUAS at the Point depot. 4. Programmes to meet the potential skill set required for people who wish to seek employment in the Port Estate will be addressed in conjunction with local education interests. 		
	Short-term effects before mitigation:	In the short term, there may be some temporary positions in the port during construction of new developments which could boost local job opportunities.	+	
	Medium- to long-term effects before mitigation:	<p>Contribution to a reduction in unemployment levels in Dublin.</p> <p>Increased trade for local businesses and industry, strengthening the Dublin City economy. In addition, possible rising tourism numbers can further boost the economy.</p>	++	
	Key assumptions within assessment:	Development of the port will increase trade and provide job opportunities for local communities.		
	Mitigation Recommended:	Further benefits can occur as a result of increased trade for local businesses and industry which can encourage start up and enhancement of businesses having further regional effects through strengthening the Dublin City economy (see Section 16.3 for further details). In addition, the potential rise in tourism numbers can further boost the economy. Any employment opportunities in the port will be available to the public once the new developments are in place, and programmes to meet the potential skill set required for people who wish to seek employment in the port estate, further benefiting the population.		
Short-term residual effects:	In the short term, there may be some temporary positions in the port during construction of new developments which could boost local job opportunities.	+		
Medium- to long-term residual effects:	Once port developments are complete, medium to long term benefits are anticipated to be achieved.	++		

10. Transport

10A	<p>Feature or Performance Indicator / Area:</p>	<p>Traffic levels on the surrounding road network within Dublin.</p>		
	<p>Potential Issues Addressed:</p> <p>Increased requirement to transport imports and export trade and also tourists into and out of the port estate will continue to increase which could put pressure on the road network.</p> <p>Increasing rail freight in and out of the port estate.</p> <p>Congestion issues on local roads.</p>	<p>Feature Importance or Indicator Sensitivity:</p>	<p>Medium</p>	
		<p>Rationale for Categorisation:</p> <p>Dublin Port is the main gateway into Dublin / Ireland both for tourists on ferries and imports and exports. The port has an excellent transport infrastructure and the Dublin Port Tunnel has relieved all congestion from within the port. In addition, the upgrading of the M50 has greatly reduced the time taken to transport goods to and from the port.</p> <p>At present, the port is poorly serviced by public transport links.</p> <p>Most of trade is container trade and transported from the port by the external road network. The majority (60%) use the Dublin Port Tunnel with the remaining traffic accessing the port from East Wall Road to the south.</p> <p>Some bulk goods (ore and other commodities) enter and leave the port via rail. Port is well connected to accommodate an increase in rail freight transportation.</p> <p>DCC introduced a ban on 5+ axle vehicles between the hours of 7am and 7pm within a designated cordon area. The ban prevents freight traffic from the port significantly affecting other road users west and south of the port. This has resulted in an 88-96% reduction in 5+ axes within the city centre with over 3,582 5+ axle vehicles utilising the Dublin Port Tunnel per day in 2009.</p>		
	<p>Mitigation Already Incorporated Into Masterplan:</p>	<ol style="list-style-type: none"> 1. New access route to the East end of the Port to be created by extending Promenade Road, following the north eastern perimeter of the port into a common entrance yard / check-in area. 2. Provision of a new north-south Port Interconnector bridge and access road to service the Southern development to enable efficient transfer of goods within the Port. 3. New foot / cycle path along the length of the north shore of the port estate. 		
	<p>Short-term effects before mitigation:</p>	<p>Construction based impacts from:</p> <ol style="list-style-type: none"> 1. Temporary increase in traffic to and from the port during construction of new facilities. 	<p>–</p>	
	<p>Medium- to long-term effects before mitigation:</p>	<p>It is felt likely that in the long term, if all Masterplan options were developed, there may be congestion issues with regards to transportation.</p>	<p>–</p>	
	<p>Key assumptions within assessment:</p>	<p>n/a</p>		
	<p>Mitigation Recommended:</p>	<p>Additional improvements could be made to create more sustainable transport options for movement of freight to and from the port.</p> <p>Each planning application for future projects at the port will have to consider traffic growth at the time of the application, and any mitigation necessary will be agreed with Dublin City Council.</p> <p>Development of a transport plan for the Port Estate in conjunction with the National Transport Authority and Dublin City Council</p>		
<p>Short-term residual effects:</p>	<p>There is the potential for minor negative effects resulting from the Masterplan due to the required presence of construction vehicles leading to temporary congestion on the roads around the port estate. There is a risk that temporary impacts will occur which requires project-specific assessment and consideration in the future. It is not impossible to eliminate this risk at the Masterplan level.</p>	<p>–</p>		
<p>Medium- to long-term residual effects:</p>	<p>The Masterplan is likely to have overall negligible effects. This is because the measures proposed will largely counteract the potential increase in traffic resulting from new port developments.</p>	<p>0</p>		

	Feature or Performance Indicator / Area:	Levels of usage of more sustainable transport modes.
	Potential Issues Addressed: <p>North port estate lacks sufficient public transport provision to the passenger ferry terminals.</p> <p>Lack of sufficient usable footpaths, cycle paths and accessibility within and around the port estate.</p> <p>The North and South Port Estate lacks public transport provision for workers access to their places of work</p>	Feature Importance or Indicator Sensitivity: <p style="text-align: right;">Very High</p> <p>At present, the port is poorly serviced by public transport links.</p> <p>The closest Dublin bike scheme is at Central Dock Station which is approximately 2.6km from port centre.</p> <p>Bus stops are located within the Northern Port on East Wall Road, East Road and Upper Sheriff Street.</p> <p>Lucas Red Line runs from Saggart via Dublin City Centre to the Point on East Wall Road.</p> <p>There is a lack of footpaths and accessibility within and around the port.</p>
Mitigation Already Incorporated Into Masterplan:	Rationale for Categorisation: <ol style="list-style-type: none"> 1. Additional footpaths around the site, particularly to the north, will increase the ability of pedestrians and others to travel around the port estate and beyond. 2. Ensure that public transport provision is provided to the passenger ferry terminals linking with the LUAS terminal at Point Depot. 3. Review the potential for increasing public transport links through Poolbeg Peninsula right down to the Great South Wall. 4. Provision of access for visiting passengers and cruise liner crew to the city via the LUAS at the Point depot. 5. DPC shall give consideration to the appointment of a travel plan co-ordinator and steering group for the port estate which will include representatives such as port tenants and public transport providers. 	
Short-term effects before mitigation:	Construction based impacts from: Temporary increase in traffic to and from the port during construction of new facilities. This could cause disruption to existing public transport provision. There is a risk that temporary impacts will occur which requires project-specific assessment and consideration in the future. It is not impossible to eliminate this risk at the Masterplan level.	-
Medium- to long-term effects before mitigation:	Medium to long term benefits are achievable through improved walking / cycling and bus facilities.	+
Key assumptions within assessment:	improvements to public transport services will be reviewed with the relevant service operators to serve the port area and link to Dublin City Centre.	
Mitigation Recommended:	<ol style="list-style-type: none"> 1. Additional improvements could be made to create more sustainable transport options for movement of freight to and from the port. 2. Additional improvements in the provision of public transport routes to and from the port. 3. Measures to encourage car sharing for people working within the port. 4. Each planning application for future projects at the port will have to consider traffic growth at the time of the application. Any mitigation necessary will be agreed with Dublin City Council. 5. Review the potential for installation of a Dublin Bike Scheme Station within or in the immediate vicinity of the port area with improved cycle and footway links to the city centre. 6. Proposals will be implemented to provide suitable cycle and pedestrian access to the port while ensuring that there will also be sufficient cycle routes and parking facilities. 7. As part of the Dublin Port Travel Plan, DPC shall give consideration to the appointment of a travel plan co-ordinator and steering group for the port estate which will include representatives such as port tenants and public transport providers. 8. Development of a Transport Plan for the Port Estate in conjunction with the National Transport Authority and Dublin City Council 	
Short-term residual effects:	Construction based impacts from: 1. Temporary increase in traffic to and from the port during construction of new facilities. This could cause disruption to existing public transport provision.	-

10B

	<p>Medium- to long-term residual effects:</p>	<p>In the event that the above mitigation is implemented, it is considered that the Masterplan may provide medium residual effect in the long term to improve active travel and public transport opportunities for passengers.</p>	<p>++</p>
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11. Waste Management			
11A	Feature or Performance Indicator / Area: Waste and recycling levels within the port estate.		
	Potential Issues Addressed: Growth of port activities and facilities are forecast to increase up to 2040. This is likely to result in an associated rise in waste levels.	Rationale for Categorisation: Currently waste recycling figures achieved by DPC during the 2010-2011 timeframe was 82-83%. DPC are developing guidelines in the reuse of suitable arisings derived from future development projects, operation / maintenance activities and arisings currently stockpiled within the port estate. These guidelines will assist in the appropriate segregation and stockpiling of arisings and, where appropriate, efficient reuse of arising within the port estate where suitable. In 2010 there was enhanced waste segregation in the terminals, offices and canteens and segregation of construction and demolition waste.	Feature Importance or Indicator Sensitivity: Medium
	Mitigation Already Incorporated Into Masterplan:	Waste management plans need consideration when providing new developments within the port estate.	
	Short-term effects before mitigation:	Construction based impacts from: 1. During the construction period, there is the potential for increasing waste to landfill both from construction and due to additional workers present in the port area. There is a risk that temporary impacts will occur which requires project-specific assessment and consideration in the future. It is not impossible to eliminate this risk at the Masterplan level.	-
	Medium- to long-term effects before mitigation:	Although it is specified within the Masterplan that waste management plans require consideration, without specific measures in place to address the increasing waste through the new port developments, there is the potential that waste and recycling targets are not met in the future. The absolute increase in port facilities and activity may lead to increasing volumes of waste being sent to landfill (see regional effects).	-
	Key assumptions within assessment:	DPC's current Waste Management Plan will continue to be implemented and reviewed on a regular basis.	
	Mitigation Recommended:	Review the current waste management plan in place for the port in order to assess how best to accommodate additional predicted waste outputs from the new developments. Construction waste management plans will be developed for future developments and projects to ensure that as much suitable material (such as soil, stone etc) can be reused in other areas of the port estate, reducing waste disposed off site. The DPC waste management strategy and future plans, using records from the DPC GIS system, will give appropriate consideration to the potential to encounter contaminated soil arisings during the development of future projects. Details including proposed handling/management of the arisings, interim storage requirements, proposals for reuse on site and/or disposal off site will be provided in the plans.	
	Short-term residual effects:	With mitigation in place, there are unlikely to be any significant short term effects on waste arising from construction.	0
Medium- to long-term residual effects:	In the medium to long term, a review of the waste management plan for the port should allow for the accommodation of additional waste thereby having negligible effects.	0	

Appendix C Strategic Natura Impact Statement



Dublin Port Masterplan 2011-2040


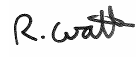






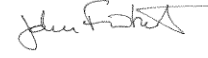



Strategic Natura Impact Statement (Appropriate Assessment)

February 2012

Dublin Port Company
Dublin Port Masterplan 2011 - 2040
 Strategic Natura Impact Statement (Appropriate Assessment)

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Figure 1 Masterplan Options

Figure 2 Natura 2000 sites within 15 km of the Masterplan area

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Non Technical Summary

This Non Technical Summary provides a summary of the Strategic Natura Impact Statement (sNIS) for the Dublin Port Masterplan 2011 – 2040 and has been prepared on behalf of the Dublin Port Company (DPC).

The principal activities of DPC are to facilitate the safe, efficient flow of goods and passengers through the port. DPC aims to enhance the development of the port facilities and services in a way that is sensitive to the local environment. DPC is currently developing its Masterplan in order to assist in achieving this aim.

The Masterplan has categorised the port into zones based on trade and associate operations. Currently, ten engineering options have been put forward for potential development. These will be phased, but the options and the phasing have not been finalised and may be amended as a result of a consultation process.

Eighteen Natura 2000 sites are located within 15 km of the Masterplan Area. Natura 2000 sites are sites classified for their ecological features under two European Union Directives, the Habitats Directive and the Birds Directive. These directives aim to protect important wildlife (species and habitats) throughout the European Union. Sites are designated as either Special Areas of Conservation (SACs) or as Special Protection Areas (SPAs).

Procedures are required to be followed when considering development near Natura 2000 sites and these are specified in the Habitats Directive. Articles 6(3) and 6(4) of the Habitats Directive require an Appropriate Assessment (AA) to be prepared for any plan or project which, alone or in combination with other plans, programmes or projects, may have a significant effect on a European site [2]. The Directive specifically states:

Article 6(3): “Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans and projects, shall be subject to appropriate assessment of its implications for the site in view of the site’s conservation objectives. In 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 States shall take all compensatory measures necessary to ensure that overall coherence of Natura 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.”

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This sNIS identifies those Natura 2000 sites potentially subject to significant effects as a result of the Masterplan proposals. This sNIS then identifies the principles/measures required for their implementation and the data that would be required at the project level to enable the plan to demonstrate that there will be no implication for the Natura 2000 sites' integrity or the qualifying features for which they are designated.

It was identified that the Masterplan could potentially affect four Natura 2000 sites:

- North Dublin Bay SAC;
- South Dublin Bay SAC;
- North Bull Island SPA; and
- South Dublin Bay & Tolka Estuary SPA.

These sites were designated for their coastal and intertidal habitats, and for their bird species.

Pathways for potential effects on the sites were determined and described. It has been identified that the Masterplan options have the potential to result in the following significant effects on Natura 2000 sites:

- habitat loss;
- habitat modification;
- pollution; and
- disturbance.

A screening exercise on the Masterplan options indicated that two options, the dedicated Ro-Ro yards at the eastern limit of development and the southern developments, would result in habitat loss from the South Dublin Bay & River Tolka Estuary SPA. None of the Masterplan options would result in habitat severance, but the majority had the potential to result in pollution or disturbance effects.

Capital and any increase in maintenance dredging was also assessed. It was determined that it had the potential to result in habitat modification, pollution or disturbance effects.

The North – South Interconnector Bridge would not result in habitat loss or severance within a Natura 2000 site. However, there is the potential for this option to result in severance of habitat that is utilised by Natura 2000 qualifying interests.

The approach to mitigation has been determined proportionate to the potential likely significant effects on the four Natura 2000 sites. The requirements needed for individual options to demonstrate beyond reasonable scientific doubt that they do not have implications for the integrity of the Natura 2000 sites or qualifying features in terms of their conservation objectives have been identified including addressing the Inspector's Report for the Dublin Port Gateway which indicated where scientific doubt lay.

The sNIS identifies a strategy for ensuring the integrity of the Sites and mitigation requirements needed to achieve this which could be delivered at the project stage. Habitat loss would be mitigated by the creation of alternative foraging and nesting sites; there would be the creation of new intertidal habitat designed to ensure coherence of the Natura 2000 network, and the creation of new tern nesting sites. A process for undertaking this, including the determination of potential locations for habitat creation, and the requirement for bird surveys, is described herein.

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Pollution and disturbance effects would be mainly addressed through best practice guidelines. A specific potential effect of disturbance resulting from the north shore footpath and cycleway may require screening of the footpath from the qualifying species. A process to determine the necessity and extent of this screening is presented.

The effects of pollution, disturbance and habitat modification as a result of dredging would be mitigated by the development of a Dredging Mitigation Strategy. This document would address the potential effects of an increase in ship movements, sediment re-suspension, contaminated sediments, and changes to the hydrodynamic regime.

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1 Introduction

1.1 Background

- 1.1.1 This Strategic Natura Impact Statement (sNIS) has been prepared by Jacobs Engineering on behalf of Dublin Port Company (DPC) to accompany the Dublin Port Master Plan 2011 - 2040.
- 1.1.2 The principal activities of DPC are to facilitate the safe, efficient flow of goods and passengers through the port. The company provides the infrastructure, facilities, services and hard standing areas to meet with the needs of their customers and to allow the transfer of goods and passengers between sea and land.
- 1.1.3 DPC owns approximately 266 ha of land at the mouth of the River Liffey Estuary where it flows into Dublin Bay (Figure 1). This current land holdings contains facilities operated by DPC and the port tenants whose operations include Roll-On, Roll-Off (Ro-Ro), Load-On Load-Off (Lo-Lo), bulk solid and liquid management and cruise liner facilities.
- 1.1.4 In 2010, these facilities processed 28 million tonnes of freight as well as in the region of 1.3 million passengers.
- 1.1.5 DPC aims to continue to enhance the development of the port facilities and services in order to fulfil the needs of their tenants and customers in a way that is sensitive to the local environment. DPC is currently developing its Masterplan in order to assist in achieving this aim.
- 1.1.6 Over the next 30 years, the demand for freight and passenger movements at the port is projected to increase. The DPC Masterplan aims to modernise the port layout in order to increase efficiency and throughput capacity.
- 1.1.7 Article 6.3 of the European Union (EU) Habitats Directive (92/43/EEC) requires that ‘any plan or project’ not directly connected with or necessary to the management of a Natura 2000 site, but likely to have a significant effect thereon, shall be subject to an Appropriate Assessment (AA) of its implications for the site in view of the site conservation objectives’.
- 1.1.8 Eighteen Natura 2000 sites are located within 15 km of the Masterplan Area (DPC Estate) with some of these sites subject to other designation such as Natural Heritage Area (NHA) and Ramsar site.

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1.2 The Purpose of the Strategic Natura Impact Statement

1.2.1 The purpose of this sNIS is to provide sufficient information in order to establish firstly whether or not the Dublin Port Masterplan 2011 – 2040 is likely to have a significant impact on Natura 2000 sites and secondly, to explain the strategic approach to mitigation for these impacts and provide a framework within which Appropriate Assessments for individual options of the DPC Masterplan can be undertaken.

1.2.2 The sNIS will form the basis for consultation with the appropriate authorities, including the National Parks and Wildlife Service (NPWS) and the Department of Environment Community and Local Government (DECLG).

1.2.3 The sNIS has been undertaken in accordance with the following guidance documents:

- DEHLG, *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities* (Revision 1 2010);
- The European Commission (EC), *Assessment 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* (2002);
- The EC, *Managing Natura 2000 Sites – The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC* (2000);
- The EC, *Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the Concepts of Alternative Solutions, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion of the Commission* (2007); and
- The EC; *Guidelines on the Implementation of the Birds and Habitats Directives in Estuaries and Coastal zones, with particular attention to port development and dredging* (2011).

1.3 Strategic Environmental Assessment

1.3.1 A Strategic Environmental Assessment (SEA) of the DPC Masterplan has been undertaken by Jacobs in conjunction with this sNIS. The SEA will outline how the strategic environmental objectives for the port have been incorporated into the development and selection of options for the DPC Masterplan.

1.3.2 During the SEA 'screening' stage, it was concluded that SEA is not a legal requirement for the DPC Masterplan. The DPC Masterplan process is not subject to preparation and/or adoption by an authority at national, regional or local level and is also not required to be prepared for adoption through a legislative procedure by Parliament or Government. On this basis, the DPC Masterplan is not defined as a plan or programme under the above SEA regulations. However, the DPC SEA has been prepared in accordance with the legislative requirements. As the DPC Masterplan is not defined as a required plan or

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programme under the SEA regulations, the DPC SEA is therefore considered a non statutory voluntary assessment, which has been commissioned by Dublin Port Company.

1.3.3 The purpose of the SEA process is to demonstrate how environmental considerations and sustainable development decisions are being integrated into the DPC Masterplan. The main output of the SEA process is the SEA Environmental Report which has been published together with the DPC Masterplan and this sNIS.

1.3.4 Information collated as part of the SEA process has also informed the development of this sNIS.

1.4 **Consultation**

1.4.1 In March 2011, DPC commenced a consultation process for the DPC Masterplan. The aim of the process was to collate the views of a wide circle of stakeholders (statutory and non statutory) on the operations and future of Dublin Port.

1.4.2 Included in this process was consultation with the NPWS who confirmed that it would be appropriate for a strategic appropriate assessment to be carried out in the first instance, to identify the principles/measures which will be addressed by DPC at a later stage of the Masterplan process (meeting with NPWS, 29 July 2011). A letter from DPC to NPWS was sent confirming this (29 July 2011).

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2 Requirements for Appropriate Assessment

2.1 Introduction

2.1.1 Natura 2000 sites, Special Protection Areas (SPAs) and Special Areas of Conservation (SACs), are classified under the European Union Birds Directive (79/409/EEC) and Habitats Directive (92/43/EEC). The procedures that must be followed when considering developments affecting a Natura 2000 are specified in Article 6(3) of the Habitats Directive.

2.1.2 Article 6(3) requires that 'any plan or project not directly connected with or necessary to the management of the site, but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to an Appropriate Assessment of its implications for the site in view of the site's conservation objectives'. Based on this assessment, 'competent national authorities shall agree to a plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned'. Exceptionally, where the assessment concludes there will be adverse effects on site integrity, Competent Authorities may agree to a plan or project if there are no alternative solutions and imperative reasons of overriding public interest.

2.2 Appropriate Assessment Stages

2.2.1 The EC guidance document (2002) set out the four stages in the AA process. These stages have been reflected within the DEHLG guidelines (Revision 1 2011). The four stages in the AA process are as follows:

- **Stage One: Screening** - the process which identifies the likely impacts upon a Natura 2000 site from a project or plan, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant;
- **Stage Two: Appropriate Assessment** - the consideration of the impact on the integrity of the Natura 2000 site from the project or plan, either alone or in combination with other projects or plans, with respect to the site structure and function and its conservation objectives. Additionally, where there are adverse impacts, this stage includes an assessment of the potential mitigation of those impacts. The proponent of the plan or project is required to submit a Natura Impact Statement containing this information; and
- **Stage Three: Assessment of alternative solutions** - the process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site; and
- **Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain** - an assessment of compensatory measures where, in

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the light of an assessment of Imperative Reasons of Overriding Public Interest (IROPI), it is deemed that the project or plan should proceed.

2.3 Overview of Assessment of Alternative Solutions and IROPI

2.3.1 Stage 3 of the AA process involves the identification of alternative solutions following a review of the outcomes of Stage 2. These alternative solutions are developed, and Stage 1 and Stage 2 assessments completed for them.

2.3.2 Where no alternative solutions exist and where adverse impacts remain the assessment passes through to Stage 4 and examines whether there is an IROPI for the plan/project to go ahead.

2.3.3 If the answer to the IROPI test is no then the plan/project cannot proceed.

2.3.4 If the answer is yes, then compensatory measures need to be agreed with the European Commission (EC), prior to the plan/project proceeding. These can include the following:

- restoration;
- creation; and
- enhancement.

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3 The Dublin Port Masterplan 2011 - 2040

- 3.1.1 Dublin Port is situated on the River Liffey which flows through the City of Dublin and between the Great South Wall and North Bull Wall before entering Dublin Bay. The Port Estate comprises approximately 266 ha of land at the mouth of the River Liffey. The DPC Masterplan covers the entirety of the Port Estate.
- 3.1.2 The Masterplan is being developed with the aim of modernising the port layout to increase efficiency and the throughput capacity to recognise the projected growth in port tonnage. The DPC Masterplan is not a definitive, timed development programme but rather a strategy containing preferred engineering options which can be implemented to meet increased demand as and when it occurs. The trigger to the implementation of the Masterplan engineering options is growth.
- 3.1.3 The execution of the DPC Masterplan will be phased over a 30-year period (2011 – 2040).
- 3.1.4 The aims of the DPC Masterplan are to provide a framework for:
- modernising the Dublin Port layout to increase efficiency within the port; and
 - modernising the Dublin Port layout to increase and manage throughput capacity recognising the projected growth in port tonnage over the next 30 years.
- 3.1.5 The DPC Masterplan has categorised the port into zones based on trade which principally includes the following:
- Unitised Trade – Lo-Lo and Ro-Ro;
 - Bulk Liquids;
 - Bulk Solid Materials;
 - Cruise Liner Operations;
 - Project Cargoes (such as machinery and/or wind turbine parts); and
 - Car Import Trade.
- 3.1.6 The detailed sequencing of the phased development has not yet been decided as there are many factors which will influence how best to develop the various parts of the port that will meet the objectives of the Plan.
- 3.1.7 This sequencing will be determined with due consideration to minimising the impact of future developments on environmental aspects and also port business as well as taking into consideration aligning the development proposals with future budget spend.
- 3.1.8 Figure 1 provides an outline of the engineering options being considered as part of the DPC Masterplan. A description of these key options is outlined in Table 1 below.

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Table 1: Land-use Options being considered as part of the DPC Masterplan 2011 – 2040.

Proposed Land-use Option	Brief Description
Cruise Liner Berths / Tourist Information Centre - North Quay Extension Area (North Side)	<p>Two berths could be provided for visiting cruise liners on the north side of the River Liffey on what is currently the North Wall Ro-Ro Terminal 3 site.</p> <p>A dedicated landing area on the quay would provide facilities for the Cruise Liner passengers with a new building of good architectural quality being provided to act as a Reception Area / Tourist Information and Interpretive Centre. The building will be towards the western end of the quay and would have a dedicated entrance for coaches, vehicles and pedestrians. The existing terminal offices would be demolished and relocated to the north in an adjacent area.</p> <p>A berthing pocket would require to be provided to accommodate the visiting Cruise Liners and this would enable some of the largest cruise liners to visit Dublin and to safely remain on the berth during all states of the tide.</p> <p>In addition, deepening of the berth will require the quay wall to be stabilised with an anchored bulkhead wall.</p>
North – South Interconnector Bridge	<p>At the Western end of the Port, an interconnector bridge crossing could be developed to link the North and South sides.</p>
Ro-Ro and Bulk Handling Facilities - Alexandra Basin West (North Side)	<p>To the north of the proposed Cruise Liner berths could be an enhanced Ro-Ro yard and a bulk handling berth. The existing bulk jetty would be demolished as part of the development and Alexandra basin would be dredged.</p> <p>Dredge arisings could be remediated for subsequent use / encapsulation within proposed reclamation projects around the port estate. All necessary licensing requirements would be adhered to in consultation with the relevant bodies.</p> <p>The existing double tier Ro-Ro link span would be retained and would serve an enhanced Ro-Ro yard.</p> <p>A bulk handling berth could also be developed in this area which would be served by a conveyor system running parallel to the new berth edge. Relocation of ship loading equipment from the existing Bulk Jetty would also be required.</p> <p>The proposed Ro-Ro development could extend North of the Alexandra Road where this section of land would be developed to facilitate a new controlled entrance and exit for the enhanced Ro-Ro yard. Some of the port land in this area may require reconfiguration of some port lands in this area i.e. logistics and/or other non port uses.</p>
Lo-Lo Berths and Yard - Ocean Pier Area (North Side)	<p>The existing Lo-Lo facility on Alexandra Basin East could be maintained. This central zone within the Port could be a Lo-Lo dedicated area which would focus on maximizing Lo-Lo efficiencies with shared areas, maintenance equipment, etc.</p> <p>Two Lo-Lo berths could be provided on the West side of Ocean Pier with associated container handling cranes and required yard area.</p>

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Proposed Land-use Option	Brief Description
	<p>,The current Peat Export shed on Ocean Pier could be demolished with the existing operation relocated to the south side of the port.</p> <p>The quay walls would be strengthened with an anchored steel bulkhead wall and the new bulkhead wall would be installed prior to the berths being deepened as part of this development.</p>
<p>Bulk Liquid Facilities + Jetties and Lo-Lo Berths + Facility (Central Port Area – North Side)</p>	<p>It is proposed that the existing Bulk Liquid/Oil Jetty berthing facilities would be retained in their current location on the Northern side of the port estate. In this area, a small floating pontoon could be provided on the east side of oil berth No. 4 to accommodate berthing for small craft such as tugs/pilot boats.</p> <p>The existing Dublin Ferryport Terminals serviced by berths 50/50A would be retained for ongoing Lo-Lo operations.</p>
<p>Dedicated Access and Egress Road System and Rail Spurs (North Side)</p>	<p>The new proposed road system could extend the existing layout that links into the Dublin Port Tunnel.</p> <p>Access</p> <p>A new access route to the East end of the Port could be created by extending Promenade Road, following the North Eastern perimeter of the Port into a common entrance yard. This extension would terminate in a Pre-Check In Area. Entrance Booths would be provided for checking and security and from there, a secure road system will route approved out-bound traffic and freight to the relevant Lo-Lo and Ro-Ro berths.</p> <p>Egress</p> <p>For freight and vehicles leaving the Port, the reverse operation applies where traffic could be securely routed to a common exit yard. Traffic would then pass through exit booths where checking, security, immigration and customs functions would apply. Buildings for security (etc.) would be provided within the footprint of the exit yard. Vehicles will be routed out via Tolka Quay Road, thus remaining segregated from incoming traffic to the port.</p> <p>Rail Links</p> <p>Proposed rail spurs are outlined in Figure 1, with new spurs linking into unitised freight yards. It is envisaged that transfer to rail will increase steadily through the 30-year plan.</p>
<p>Dedicated Ro-Ro Yards at Eastern Limit of Re-Developed Port (North Side)</p>	<p>The current proposal outlines a proposed dedicated zone of new Ro-Ro berths and yards at the Eastern end of the Port. Six Ro-Ro berths could be facilitated in this area which could accommodate the maximum size of Ro-Ro vessel currently envisaged for the Port (240 m long vessels). These vessels are 40 m longer than the largest Ro-Ro currently using the port.</p> <p>An existing basin that presently serves Terminal 5 would be reclaimed to provide greater yard area. Infilling the basin serving the existing Terminal 5 would be formed by installing an anchored bulkhead wall across the southern face.</p> <p>In addition, the proposed reclaimed area outlined in Figure 1 would be</p>

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Proposed Land-use Option	Brief Description
	<p>developed to link integrally with the proposed Ro-Ro zone.</p> <p>The southern berths on the proposed reclaimed area would be formed by either an anchored bulkhead wall, or by a relieving platform. In addition, the proposals for the proposed eastern reclamation site would be less intrusive than that proposed by the previous Dublin Gateway planning application made to An Bord Pleanála. The footprint and degree of dredging would be reduced, as it would not be proposed to develop Ro-Ro berths on the eastern face of the reclamation.</p> <p>A landscaped screen would be provided along the northern perimeter of the site which would be planted with vegetation and trees. The northern and eastern limits of the reclamation would be formed by rock armoured revetments, with higher-level landscaping bunds where required.</p>
<p>Southern Developments (Lo-Lo facility, Bulk Solid, Multi Usage Berths, Associated Access Roads)</p>	<p>Lo-Lo and Multi Purpose Areas</p> <p>The current MTL Lo-Lo terminal could be continued to be used as a Lo-Lo facility but may need to be modified. It is envisaged that site operations could be enhanced by investing in appropriate container handling equipment to increase the efficiency of the terminal.</p> <p>New materials handling areas are proposed for the sites immediately eastwards, which will provide facilities for handling bulk solid materials. This would require provision of a new access bridge across the existing cooling water channel and construction of new quay wall.</p> <p>Proposed Relocation of Existing Tern Colonies</p> <p>To the east of this reclaimed site, the existing tern colonies on the two mooring dolphins could be re-positioned to various new locations on the eastern boundary of the Port. It would also be proposed to establish a Wildlife Observation Platform / Viewing Gallery in the proximity of the relocated tern colony. All proposed works would be reviewed and agreed with the relevant authorities i.e. National Parks and Wildlife Service (NPWS).</p> <p>Multi Usage Berth</p> <p>The eastern area in Figure 1 identifies a multi usage berth that could be used to support Ro-Ro/Lo-Lo/bulk/break bulk and the emerging off-shore wind industry. This would involve reclamation works which will be formed by perimeter structures such as anchored bulkheads, relieving platforms and edge revetments. Similar to all proposed reclamation works on the north side of the port, all soil treatment, stabilisation and reuse proposals will be reviewed with the relevant authorities and all necessary licensing requirements will be adhered to in consultation with those bodies.</p> <p>It would be necessary to provide a new access road to service this southern development to enable efficient transfer of goods.</p>
<p>Enhancement Projects / Boundary</p>	<p>A number of 'Environmental Enhancement'/boundary softening options which sit alongside the proposed engineering options are being considered for</p>

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Proposed Land-use Option	Brief Description
Softening (including north shore footpath and cycleway)	<p>development within the port estate.</p> <p>Included in these enhancement proposals are the following options:</p> <ul style="list-style-type: none"> • A new public foot/cycle path along the length of the north shore of the port estate; • Additional grassland/viewing areas to be provided on the north and south shore of the port estate; • Proposed relocation of the existing tern colonies to various locations on the eastern boundary of the Port; • Landscaping proposals on the East Wall Road of the port; • Development of a viewing platform area on the south east point of the Port at the start of the Great South Wall; • Port area set aside for other development/amenity use; and • Port area to be developed in conjunction with Dublin City Council (DCC) to create a public amenities area. <p>It is considered that the development of these proposals will have a positive benefit in terms of the provision of additional amenities for the local communities and general public.</p>
Imported car storage facility and bridge	<p>A high level bridge will be provided over the East Wall Road linking the proposed car storage area with the port. The facility will provide a secure area for storing imported vehicles.</p>

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4 Screening

4.1 Introduction

4.1.1 Stage 1 is the screening stage of the AA process. To enable this process to be undertaken, all Natura 2000 sites that could potentially be subject to effects from a proposed development are required to be identified. Based on AA guidelines (DEHLG, 2011) all Natura 2000 sites within 15 km of Masterplan area were identified.

4.1.2 The stage involves the following steps:

1. Determining whether the project or plan is directly connected with or necessary to the management of the site;
2. Describing the project / plan;
3. Identifying the potential effects on the Natura 2000 site; and
4. Assessing the significance of any effects on the Natura 2000 site.

4.2 Natura 2000 Sites Potentially Affected by the Masterplan

4.2.1 Eighteen Natura 2000 sites were identified within 15 km of the Masterplan (Table 2 and Figure 2); eight SACs and 10 SPAs. It should be noted that the designations overlap in places.

4.2.2 Site synopsis, Natura 2000 data forms and conservation objectives were obtained from the NPWS online. Further details of the Natura 2000 sites and their qualifying habitats and species can be found in Appendix 1.

4.3 Screening Assessment

4.3.1 The DPC Masterplan is not directly connected with or necessary to the management of any of the identified Natura 2000 sites.

4.3.2 Figure 1 provides an outline to the key engineering options which are being considered as part of the DPC Masterplan.

4.3.3 Fourteen Natura 2000 sites lie at a distance (> 4 km) from the Masterplan area and were designated for habitats and/or species unlikely to be affected by the Masterplan; eight SAC sites and six SPAs. In addition, the An Bord Pleanála Inspector's Report (Wyse, 2007) for an earlier screening exercise for the Dublin Port Gateway accepted that only one Natura 2000 site within the Dublin Bay area (South Dublin Bay & River Tolka Estuary

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SPA) was likely to be subject to an impact from the proposed development. Further detail on the screening analysis is provided below.

- 4.3.4** None of the fourteen sites would be subject to any direct habitat loss and were generally unlikely to be affected by disturbance (noise, vibration and lighting) due to the distance from impact sources. Analysis identified that the most likely impact pathways would be through the water, from, for instance sedimentation and pollution.
- 4.3.5** Ballyman Glen SAC, Glenasmole Valley SAC, Knocksink Wood SAC and the Wicklow Mountains SAC are designated for terrestrial and freshwater habitats (Appendix 1). There was no pathway through water for an impact to occur for these five sites and all were at least 12km from the Masterplan area (Table 2). It was therefore considered that these sites would not be affected by any of the preferred options of the DPC Masterplan.
- 4.3.6** Ireland's Eye and Howth Head SACs are also designated for terrestrial habitats and lay 10km and 5km respectively from the Masterplan area. Although there is a pathway identified through water to these SAC the qualifying feature habitats were considered unlikely to be affected by any of the options of the Masterplan.
- 4.3.7** Baldoye Bay and Malahide Estuary SAC are designated for intertidal habitat, dunes, salt meadows and saltmarsh vegetation. The former was over 7km from the Masterplan area and the latter was 11km from the Masterplan area. Distances through water were greater (13km and 20km respectively). Whilst being designated for habitats that can potentially be affected by sedimentation and water pollution, it was considered that the sites were far enough away from impact sources and in locations such that they would not be subject to any likely significant effects.
- 4.3.8** Wicklow Mountains SPA was designated for two species of raptor and was over 12km away from any impact source. In addition, there was no pathway through water for an impact to occur and therefore it was considered that the site would not be affected by any of the options of the Masterplan.
- 4.3.9** The remaining five SPAs screened out were designated for waterbirds, including waders, gulls and terns. All are at least nearly 8km away from impact sources with the nearest being the Dalkey Islands SPA (7.9km) which lies at the southern end of Dublin Bay. For all these sites there is a pathway through water through which an impact could potentially occur. However, an AA Stage 1 screening report for maintenance dredging activities on Natura 2000 sites within the Dublin Bay area (Jacobs, 2011b), considered that there would be no impacts on those sites as a result of dredging activities and therefore it was interpreted that sedimentation and pollution from dredging activities would not have an impact on those sites even further away.

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- 4.3.10 Whilst bird species are mobile and therefore potentially susceptible to impacts, it was identified that the distance from the Masterplan area and lack of an impact pathway indicated that these SPAs would not be subject to any likely significant effects.
- 4.3.11 The eight SACs which were screened out were:
- Baldoyle Bay SAC;
 - Ballyman Glen SAC;
 - Glenasmole Valley SAC;
 - Howth Head SAC;
 - Knocksink Wood SAC;
 - Malahide Estuary SAC;
 - Ireland's Eye SAC; and
 - Wicklow Mountains SAC.
- 4.3.12 The six SPAs which were screened out were:
- Baldoyle Bay SPA;
 - Malahide Estuary SPA;
 - Howth Head Coast SPA;
 - Ireland's Eye SPA;
 - Dalkey Islands SPA; and
 - Wicklow Mountains SPA.
- 4.3.13 At four Natura 2000 sites there was the potential for activities associated with construction and operation of the DPC Masterplan to have significant effects on qualifying species and/or habitats. These sites were:
- North Dublin Bay SAC;
 - South Dublin Bay SAC;
 - North Bull Island SPA; and
 - South Dublin Bay & Tolka Estuary SPA.

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**Table 2: Natura 2000 Sites within 15 km of the DPC Masterplan Area. Area (ha).
A Summary of their Features of Interest and Approximate Distance from the Masterplan Area (km) are also shown.**

Site ID	Site Name	Area (ha)	Features of Interest	Distance (km)	
				Direct	Through water
000199	Baldoyle Bay SAC	538.93	5 habitat types	7.3	13.4
000202	Howth Head SAC	374.87	2 habitat types	4.8	4.9
000205	Malahide Estuary SAC	809.69	7 habitat types	11.1	20.1
000206	North Dublin Bay SAC	1474.98	10 habitat types 1 liverwort species	0.9	0.9
000210	South Dublin Bay SAC	742.19	1 habitat type	0	0
000713	Ballyman Glen SAC	247.71	2 habitat types	14.1	n/a
000725	Knocksink Wood SAC	89.79	2 habitat types	13.7	n/a
001209	Glenasmole Valley SAC	149.29	2 habitat types	13.6	n/a
002193	Ireland's Eye SAC	41.83	2 habitat types	10.5	13.2
002122	Wicklow Mountains SAC	32945.71	11 habitat types	12.6	n/a
004006	North Bull Island SPA	1944.30	17 bird species, Wetland & Waterbirds	0	0
004016	Baldoyle Bay SPA	262.77	6 bird species, Wetland & Waterbirds	7.2	15.9
004024	South Dublin Bay & River Tolka Estuary SPA	2194.11	13 bird species, Wetland & Waterbirds	0	0
004025	Malahide Estuary SPA	764.96	14 bird species, Wetland & Waterbirds	11.2	22.4
004040	Wicklow Mountains SPA	15265.63	2 bird species	12.6	n/a

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				Distance (km)	
004113	Howth Head Coast SPA	207.82	1 bird species	9.1	9.8
004117	Ireland's Eye SPA	214.52	5 bird species	10.1	12.3
004172	Dalkey Islands SPA	83.08	3 bird species	7.9	7.9

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5 Natura 2000 Sites

5.1.1 This section describes the four Natura 2000 sites where likely significant effects resulting from the undertaking of the Masterplan are possible:

- North Dublin Bay SAC;
- South Dublin Bay SAC;
- North Bull Island SPA; and
- South Dublin Bay & Tolka Estuary SPA.

5.1.2 Information was collated from the NPWS website and links to documents therein. For some sites, the features of interest differ between those identified, the Natura 2000 forms, and the conservation objectives. All information has been presented. Conservation objectives relevant to the four sites are provided in Appendix 2. Information on the conservation status of Features of Interest is available at an Ireland-wide level only and is provided in Appendix 3.

5.2 North Dublin Bay SAC (Site Code 000206)

5.2.1 The site has 11 features of interest; 10 Annex I habitats and one Annex II species, petalwort (*Petalophyllum ralfsii*), a species of liverwort.

Table 3: Features of Interest of the North Dublin Bay SAC.

Code	Feature of Interest
Habitats	
1140	Mudflats and sandflats not covered by seawater at low tide
1210	Annual vegetation of drift lines
1310	<i>Salicornia</i> and other annuals colonizing mud and sand
1320	<i>Spartina</i> swards (<i>Spartinion maritimae</i>)
1330	Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)
1410	Mediterranean salt meadows (<i>Juncetalia maritimi</i>)
2110	Embryonic shifting dunes
2120	Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)
2190	Humid dune slacks
Species	
1395	Petalwort (<i>Petalophyllum ralfsii</i>)

5.2.2 The following information is taken from the site synopsis document (NPWS, 1999). 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 this site. The island is a sandy spit which formed after the building of the South Wall and Bull Wall in the 18th and 19th centuries. It now extends for about 5 km in

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length and is up to 1 km wide in places. This site is an excellent example of a coastal site with all the main habitats represented.

5.2.3 The North Dublin Bay site holds good examples of ten habitats that are listed on Annex I of the E.U. Habitats Directive; one of these is listed with priority status. Several of the wintering bird species have populations of international importance, while some of the invertebrates are of national importance. The site contains a numbers of rare and scarce plants including some which are legally protected.

5.2.4 The conservation objective for the North Dublin Bay SAC is:

- To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.
 - [1140] Mudflats and sandflats not covered by seawater at low tide
 - [1210] Annual vegetation of drift lines
 - [1310] Salicornia and other annuals colonizing mud and sand
 - [1320] *Spartina* swards (*Spartinion maritimae*)
 - [1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
 - [1395] *Petalophyllum ralfsii*
 - [1410] Mediterranean salt meadows (*Juncetalia maritimi*)
 - [2110] Embryonic shifting dunes
 - [2120] Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")
 - [2130] * Fixed coastal dunes with herbaceous vegetation ("grey dunes")
 - [2190] Humid dune slacks

5.3 South Dublin Bay SAC (Site Code 000210)

5.3.1 The site has one Feature of Interest, one Annex I habitat (mudflats and sandflats not covered by seawater at low tide [1140]).

5.3.2 The following information is taken from the site synopsis document (NPWS, 2007). South Dublin Bay SAC is an intertidal site with extensive areas of sand and mudflats, a habitat listed on Annex I of the EU Habitat's Directive. The area is an important site for waterfowl, the principle species being oystercatcher (*Haematopus ostralegus*), ringed plover (*Charadrius hiaticula*), sanderling (*Calidris alba*) and dunlin (*Calidris alpina*), redshank (*Tringa totanus*) and turnstones (*Arenaria interpres*). Brent geese (*Branta bernicla*) winter in regular numbers of international importance. Bar-tailed godwit (*Limosa lapponica*), listed on Annex I of the EU Birds Directive also occur. The area is also an important tern roost in the autumn, including roseate terns (*Sterna dougallii*), a species listed on Annex I of the EU Birds Directive

5.3.3 The conservation objective for the South Dublin Bay SAC is:

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- To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.
 - [1140] Mudflats and sandflats not covered by seawater at low tide

5.4 North Bull Island SPA (Site Code 004006)

5.4.1 The site has 18 Features of Interest; 17 wintering bird species and a wetlands and waterbirds assemblage.

Table 4: Features of Interest of the North Bull Island SPA.

Code	Species & code
A046	Light-bellied Brent goose (<i>Branta bernicla hrota</i>)
A048	Shelduck (<i>Tadorna tadorna</i>)
A052	Teal (<i>Anas crecca</i>)
A054	Pintail (<i>Anas acuta</i>)
A056	Shoveler (<i>Anas clypeata</i>)
A130	Oystercatcher
A140	Golden plover (<i>Pluvialis apricaria</i>)
A141	Grey plover (<i>Pluvialis squatarola</i>)
A143	Knot (<i>Calidris canutus</i>)
A144	Sanderling
A149	Dunlin
A156	Black-tailed godwit (<i>Limosa limosa</i>)
A157	Bar-tailed godwit
A160	Curlew (<i>Numenius arquata</i>);
A162	Redshank
A169	Turnstone
A179	Black-headed gull (<i>Larus ridibundus</i>)
A999	Waterbirds & wetlands

5.4.2 The following information is taken from the site synopsis document (NPWS, 2008a). The site covers all of the inner part of north Dublin Bay, with the seaward boundary extending from the Bull Wall lighthouse across to Drumleck Point at Howth Head. The North Bull Island sand spit is a relatively recent depositional feature, formed as a result of improvements to Dublin Port during the 18th and 19th centuries. It is almost 5 km long and 1 km wide and runs parallel to the coast between Clontarf and Sutton. Part of the interior of the island has been converted to golf courses. The North Bull Island SPA is an excellent example of an estuarine complex and is one of the top sites in Ireland for wintering waterfowl. This Natura 2000 site is of international importance on account of both the total number of waterfowl and the individual populations of light-bellied Brent Goose, black-tailed godwit and bar-tailed godwit that use it. Also of significance is the regular presence of several species that are listed on Annex I of the EU Birds Directive.

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- 5.4.3 North Bull Island is also subject to a number of other designations including designation as a World Biosphere Reserve by UNESCO and a Ramsar site under the Ramsar Convention.
- 5.4.4 The Natura 2000 form (NPWS, 2003) lists four Annex I species:
- Bar-tailed godwit;
 - Golden plover;
 - Ruff (*Philomachus pugnax*); and
 - Short-eared owl (*Asio flammeus*).
- 5.4.5 The Natura 2000 form also lists an additional 24 species which are regularly occurring migratory birds not listed on Annex I.
- Black-headed gull;
 - Black-tailed godwit;
 - Common gull (*Larus canus*);
 - Curlew;
 - Curlew sandpiper (*Calidris ferruginea*);
 - Dunlin;
 - Greenshank (*Tringa nebularia*);
 - Grey plover;
 - Light-bellied Brent goose;
 - Little stint (*Calidris minuta*);
 - Knot;
 - Mallard (*Anas platyrhynchos*);
 - Oystercatcher;
 - Pintail;
 - Red-breasted merganser (*Mergus serrator*);
 - Redshank;
 - Ringed plover;
 - Sanderling;
 - Shelduck;
 - Shoveler;
 - Spotted redshank (*Tringa erythropus*);
 - Teal;
 - Turnstone; and
 - Wigeon (*Anas penelope*).
- 5.4.6 The Conservation Objective for the North Bull Island SPA is:
- Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.
 - [wintering] Light-bellied Brent goose
 - [wintering] Shelduck

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- [wintering] Teal
- [wintering] Pintail
- [wintering] Shoveler
- [wintering] Oystercatcher
- [wintering] Grey plover
- [wintering] Knot
- [wintering] Sanderling
- [wintering] Bar-tailed godwit
- [wintering] Black-tailed godwit
- [wintering] Curlew
- [wintering] Redshank
- [wintering] Turnstone
- Wetlands & Waterbirds

- 5.4.7 Waterbird monitoring has been taking place in North Dublin Bay since the 1960's and there is an extensive amount of information on the bird species in the area. This information has been summarised in Dublin City Councils publication A Management Plan for North Bull Island (McCorry & Ryle, 2009). According to the Plan, which also makes reference to Crowe 2005 the numbers of wildfowl and waders using Dublin Bay have fallen by 32% and 22% since the mid 1980's (2005).
- 5.4.8 The intertidal mudflats and sandflats, when exposed, are used for feeding by the majority of all waterbird species using Dublin Bay (Crowe, 2005) and this would include the North Bull Island SPA.
- 5.4.9 Green algal mats found in the intertidal areas provide rich feeding habitat for some species like Brent geese and wigeon. As the tide rises waterbirds generally move northwards in Dublin Bay and are forced to move away from the area or onto the saltmarsh. At very high tides practically all the birds roost at the North Bull Island complex. Dollymount Strand is used by both roosting and feeding waders, mainly sanderling, bar-tailed godwits, knot and dunlin. Dabbling ducks tend to concentrate largely in the channels on the north and south side of the causeway. The populations of light-bellied Brent goose, bar-tailed godwit and pintail are of particular note as they comprise more than 10% of the respective national totals (Crowe, 2005).
- 5.4.10 According the NPWS Natura 2000 Data Form owing to the various conservation designations of the site, there are no serious imminent threats to the wintering birds. However, the following activities have been identified within the Natura 2000 form as having or have the potential to impacts on the Natura 2000 site:
- Pollution such as oil spillages from Dublin Port and shipping is a general threat;
 - Commercial bait digging is a localised activity and causes disturbance to wintering birds; and
 - Disturbance from walkers, free-running dogs, and sailing activities.

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- 5.4.11 The North Bull Island Management Plan (McCorry & Ryle, 2009) sets out a series of management issues and recommendations with regard to the North Bull Island.
- 5.4.12 As described by the NPWS, if the population data on the species concerned indicate that it is maintaining itself, the natural range of the species is neither being reduced or likely to be reduced for the foreseeable future and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis then the species is at favourable conservation status.
- 5.4.13 The ERBD Plan has defined the current conservation status of North Bull Island Special Protection Area (SPA) as being “good”.

5.5 South Dublin Bay & River Tolka Estuary SPA (Site Code 004024)

- 5.5.1 The site has 13 Features of Interest; 12 bird species and a wetlands and waterbirds assemblage.

Table 5: Features of Interest of the South Dublin Bay & River Tolka Estuary SPA.

Code	Species & code
A046	Light-bellied Brent goose
A130	Oystercatcher
A137	Ringed plover
A140	Golden plover
A143	Knot
A144	Sanderling
A149	Dunlin
A157	Bar-tailed godwit
A162	Redshank
A179	Black-headed gull
A192	Roseate tern
A193	Common tern
A194	Arctic tern
A999	Waterbirds & wetlands

- 5.5.2 The following information is taken from the site synopsis document (NPWS, 2008b). The South Dublin Bay & River Tolka Estuary SPA comprises a substantial part of Dublin Bay. It includes the intertidal area between the River Liffey and Dun Laoghaire, and the estuary of the River Tolka to the north of the River Liffey, as well as Booterstown Marsh. A portion of the shallow marine waters of the bay is also included. The South Dublin Bay & River Tolka Estuary SPA is of international importance for light-bellied Brent goose and of national importance for nine other waterfowl species. As an autumn tern roost, it is also of international importance. Furthermore, the site supports a nationally important colony

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of common tern. All of the tern species using the site are listed on Annex I of the E.U. Birds Directive, as are bar-tailed godwit and Mediterranean gull.

5.5.3 The Special Conservation Interests for the South Dublin Bay & River Tolka Estuary SPA are:

- Arctic tern (*Sterna paradisaea*);
- Bar-tailed godwit;
- Common tern (*Sterna hirudo*);
- Knot;
- Light-bellied Brent goose;
- Redshank;
- Roseate tern; and
- Sanderling.

5.5.4 Additional species of conservation interest include:

- Black-headed gull;
- Dunlin;
- Grey plover;
- Oystercatcher;
- Ringed plover; and
- Wetland and waterbirds.

5.5.5 The conservation objective for the South Dublin Bay & River Tolka Estuary SPA is:

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.
 - [wintering] Light-bellied Brent goose
 - [wintering] Oystercatcher
 - [wintering] Ringed plover
 - [wintering] Golden plover
 - [wintering] Knot
 - [wintering] Sanderling
 - [wintering] Bar-tailed godwit
 - [wintering] Redshank
 - [passage] Roseate tern
 - [breeding] Common tern

5.5.6 Common and Arctic tern species nest on two dolphins within the main port area. The more easterly of the two, known as the ESB dolphin, is designated as part of the South Dublin Bay & River Tolka Estuary SPA (Figure 2). It supports a greater number of breeding pairs of terns than the other dolphin (known as the CDL dolphin) (430-440 versus 36 in 2008, Jacobs (2011a)).

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6 Potentials Effects Pathways

6.1 Introduction

6.1.1 This section considers a range of potential effects of the DPC Masterplan on the conservation objectives for the qualifying species and habitats of the four Natura 2000 sites indicated (Section 5.1.1). Effects which are unlikely to be significant in terms of the conservation objectives of the Natura 2000 site are screened out and a rationale for this is provided.

6.1.2 Where significant effects cannot be readily screened out, this section also considers these likely significant effects at a strategic level to provide a framework within which individual options of the DPC Masterplan can be assessed. The section does not discuss collected data in detail as this information will be required at an individual option level and be provided in the project specific AA.

6.1.3 Information on specific construction techniques is not always available. However, these types of effects assessed are in some instances extrapolated from the best available information and likely construction and operation practices as currently understood.

6.2 Habitat Loss

6.2.1 Habitat losses resulting from the implementation of some options of the DPC Masterplan have the potential to adversely affect the integrity of the indicated Natura 2000 sites.

6.2.2 There is the potential for a direct loss of approximately 21 ha of the South Dublin Bay & River Tolka Estuary SPA intertidal habitat resulting from construction of a Ro-Ro facility/Dublin Gateway at the extreme eastern end of the Port.

6.2.3 There is also the potential for direct loss of habitat as a result of the removal / development of dolphins, used by breeding terns, within the main port channel. One of these dolphins is designated as part of the South Dublin Bay & River Tolka Estuary SPA.

6.2.4 In addition, changes in the hydrology and sediment regime of port area resulting capital dredging and the construction of quays may also result in changes in the distribution of inter-tidal and sub-tidal habitats. An increase in maintenance dredging activities during operation of the Masterplan may also have an implication in terms of habitat loss for the Natura 2000 sites.

6.2.5 There is also potential for the North – South Interconnector Bridge over the River Liffey to result in loss of habitat which is suitable for Natura 2000 qualifying species. Habitat loss may occur during construction due to displacement of birds by disturbance as well as in-channel works or as a result of shading from the bridge piers during operation. Although

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the bridge lies outside any Natura 2000 site it is likely that the River Liffey provides foraging and roosting opportunities for some qualifying features (i.e. birds) of, for instance, the South Dublin Bay & River Tolka Estuary SPA.

6.3 Habitat Severance

6.3.1 It is not anticipated that there will be any habitat fragmentation or severance within a Natura 2000 site. The port area, its activities and facilities, may already act as a barrier causing birds to alter flight behaviour. It is not expected that components of the DPC Masterplan would add to this significantly.

6.3.2 However, there is the possibility that a new interconnector bridge over the River Liffey may act as a barrier to birds, altering flight lines leading to severance of habitat outwith a Natura 2000 site. This could result in an adverse effect on the integrity of a Natura 2000 site.

6.4 Habitat Modification

6.4.1 The water environment of the Dublin bay area is important to the integrity of the Natura 2000 sites, through the maintenance of conservation of features of interest; habitats and species.

6.4.2 Capital and increased maintenance dredging and dumping activities may cause alteration to water flow and the sedimentation regime. Changes in the hydrology and suspended sediments might affect the availability of prey to bird species of interest through changes in turbidity, and through deposition and scour of sediment which may affect the extent of inter-tidal and sub-tidal habitats. These habitats themselves may also be features of interest.

6.4.3 Reclamation of land at the eastern extreme of the Masterplan area may also result in changes to the hydrodynamic regime and therefore changes in other parts of Natura 2000 site habitat. There is the potential for alterations to the flows and tidal currents as a result of capital and increased maintenance dredging which could lead to changes in erosion and accretion rates.

6.5 Pollution

6.5.1 There is a risk of a release of pollutants during construction as a result of accidental spillages and site run-off. These have the potential to affect features of interest, habitats and species, within the indicated Natura 2000 sites.

6.5.2 During implementation of the Masterplan proposals, increased shoreside activities as well as increased ship movements may increase the risk of pollution incidents.

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- 6.5.3 In addition, there is the risk of pollution through the dumping of contaminated arisings from capital and maintenance dredging activities, and the re-suspension of contaminated material.
- 6.6 **Disturbance**
- 6.6.1 Disturbance would be considered to adversely affect site integrity, if it contributes to:
- the long-term decline of a species on the site;
 - the risk of reduction of the range of the species within the site; and, or
 - the reduction in area of the habitat used by the species within the site (EC, 2002).
- 6.6.2 Disturbance may also displace birds from important feeding and roosting areas and could have energetic costs in terms of extending distances travelled between roosting and feeding grounds. This may reduce foraging time and consequently energy intake.
- 6.6.3 Construction of components of the Masterplan may cause disturbance to qualifying bird species through noise and vibration, the presence of construction personnel and machinery (i.e. piling operations), the general movement of vessels involved in construction, and the undertaking of capital dredging activities.
- 6.6.4 During the breeding season (May – August), disturbance to the dolphins, within the main port channel, particularly early in the breeding season, may lead to:
- a reduction in the number of breeding pairs (common and Arctic terns);
 - an increase in clutch abandonment; and
 - a reduction in productivity (i.e. number of fledged young).
- 6.6.5 In the worst case scenario, disturbance could potentially result in terns abandoning the breeding colony.
- 6.6.6 During operation of the Masterplan, birds may be affected by increased noise levels at the port resulting from increased and larger ship movements and port operations. Increased lighting from Masterplan options may also affect bird behaviour. Birds can be attracted to and become disorientated by lights at night, particularly during low visibility conditions. However, waterfowl may feed at night and take advantage of artificial light to extend their foraging time.
- 6.6.7 Disturbance may also occur as a result of the north shore footpath and cycleway included as part of the Masterplan soft values proposals. This proposal lies adjacent to the River Tolka Estuary which is part of the SPA. There is therefore potential for an increased human presence to result in the disturbance of qualifying bird species.

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6.7 Options of the DPC Masterplan likely to Impact upon Natura 2000 Sites

- 6.7.1 The options of the Masterplan have been considered for their implications on Natura 2000 sites in relation to the effects from the potential pathways described above in Section 6.1-6.6. Consideration has been given to the specific features of interest which would be adversely affected.
- 6.7.2 Table 6 provides a summary of the Masterplan options and adverse effects of individual options.
- 6.7.3 In addition, capital and increased maintenance dredging, an activity required for many of the individual options, may impact upon Natura 2000 sites and has been included in Table 6.
- 6.7.4 Dredging operations have the potential to increase the amount of sediment in the marine environment through re-suspension of material, affecting habitat and water quality. In addition, there is the potential for impacts on the marine environment through the presence of contaminants. There is also the potential for changes to occur in erosion and accretion rates resulting in habitat modification.
- 6.7.5 It is considered that the Interconnector Bridge across the River Liffey will not have a direct effect on habitats within Natura 2000 sites. However, non-Natura 2000 site habitat loss or severance as a result of the bridge may occur which has the potential to indirectly impact qualifying bird species, and therefore affect the integrity of Natura 2000 sites.

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Table 6: Screening Matrix for Key Options of the DPC Masterplan and their Potential Impacts before Mitigation on Natura 2000 Sites.

Masterplan Option / Activity	Habitat Loss	Habitat Severance	Habitat Modification	Pollution	Disturbance
Cruise Liner Berths / Tourist Information Centre - North Quay Extension Area (North Side)	N	N	N	Y	Y
North – South Interconnector Bridge ¹	N	N	N	Y	Y
Ro-Ro and Bulk Handling Facilities - Alexandra Basin West (North Side)	N	N	N	Y	Y
Lo-Lo Berths and Yard - Ocean Pier Area (North Side)	N	N	N	Y	Y
Bulk Liquid Facilities + Jetties and Lo-Lo Berths + Facility (Central Port Area – North Side)	N	N	N	Y	Y
Dedicated Access and Egress Road System and Rail Spurs (North Side)	N	N	N	Y	Y
Dedicated Ro-Ro Yards at Eastern Limit of Re-Developed Port (North Side)	Yes (approx. 21 ha of SPA habitat)	N	Y	Y	Y
Southern Developments (Lo-Lo facility, Bulk Solid, Multi Usage Berths, Associated Access Roads)	Yes (relocation of tern colonies)	N	Y	Y	Y
Enhancement Projects / Boundary Softening (including north shore footpath and cycleway)	N	N	N	N	Y
Imported car storage facility and bridge	N	N	N	Y	Y
Capital and Increased Maintenance Dredging	N	N	Y	Y	Y

¹ This option may also result in loss or severance of habitat outwith a Natura 2000 site but which may affect the integrity of a site.

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6.8 Summary

- 6.8.1** There will be direct habitat loss from one Natura 2000 site, the South Dublin Bay & River Tolka Estuary SPA.
- 6.8.2** Habitat severance was not assessed as a likely significant effect. However, habitat modification without mitigation was determined to be a potential adverse effect, through reclamation of land, and through dredging and dumping activities. These changes may also affect prey availability.
- 6.8.3** Pollution and disturbance were determined to be a likely adverse effect of the majority of Masterplan options without mitigation. Pollution impacts may have direct effects on qualifying habitats and species, and also indirect impacts on qualifying species through direct effects on prey species.
- 6.8.4** Two options of the Masterplan, the dedicated Ro-Ro Yards/Dublin Gateway at the eastern limit of the port estate, and the southern developments, were indicated to most likely result in a wide range of potential impacts on Natura 2000 sites.
- 6.8.5** Capital and increased maintenance dredging was also indicated to potentially impact on Natura 2000 sites through habitat modification, pollution and disturbance.
- 6.8.6** The North – South Interconnector Bridge may result in habitat loss during construction of the bridge as a result of shading or in-channel structures. Although lying outside a Natura 2000 site, this has the potential to affect the integrity of Natura 2000 sites by having an impact on qualifying species roosting or foraging when outside designated sites.

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7 Approach to Mitigation

7.1 Introduction

7.1.1 The section sets out the strategic approach to mitigation to address potential adverse effects on the integrity of Natura 2000 sites. The approach to mitigation is proposed to address potential adverse effects identified in Section 6 above.

7.1.2 Mitigation measures are aimed at minimising or cancelling the potential adverse effects of a plan or project on a Natura 2000 site, during or after completion, and form an integral part of the specifications of the project (EC, 2000). In addition, they must ensure the continuity of biological processes and protect the overall coherence of the Natura 2000 network (EC, 2011).

7.1.3 It is not always possible to identify mitigation measures for the potential environmental impacts of new developments at the Masterplan stage (DfT, 2008). These guidelines acknowledge that detailed preventative and mitigation measures will be developed on a project by project basis at the development and planning application stage.

7.1.4 Since this report is a strategic assessment of the potential adverse effects from options within the Masterplan, it provides the requirements that individual projects will need to meet to demonstrate beyond reasonable scientific doubt that they do not have implications for the integrity of the Natura 2000 sites or qualifying features in terms of their conservation objectives. This approach was agreed with NPWS at a meeting on 29 July 2011.

7.1.5 There are options of the Masterplan (dedicated Ro-Ro yards at eastern limit of re-developed port, and the southern developments (tern colonies)) that if implemented as projects will have a direct effect on a Natura 2000 sites and therefore would need to also prove imperative reasons of overriding public interest (IROPI) to enable an appropriate assessment to be made for these projects. Therefore, these specific projects would also need to provide all compensatory measures necessary to ensure that overall coherence of the Natura 2000 sites they affect are protected. The principles of the compensation are set out as strategic mitigation measures in this document to demonstrate that all potential adverse effects could be compensated and this mitigation is strategically provided for in the Masterplan.

7.2 General Considerations for Mitigation

Avoidance of Adverse Effects

7.2.1 Consideration will be given to avoidance of adverse effects wherever possible during the selection and design process for any future proposed development.

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Consultation

- 7.2.2 Early liaison/consultation will be conducted with statutory and non-statutory bodies to develop/amend any proposed projects so as to minimise impact on Natura 2000 sites.

Timing of Mitigation

- 7.2.3 As indicated in Section 3, options within the Masterplan will continue to be revised. This includes the timing of construction of the various options. The timing of mitigation activities will therefore depend on the particulars of the various options; the actual option to be constructed and the timing of that construction. In addition, details of actual construction techniques are unavailable at this time.
- 7.2.4 Furthermore, the timing of mitigation activities is required to take into account the need to show that a mitigation item is successful or will be successful before the activity likely to cause an adverse effect is undertaken. This means that the strategy to provide mitigation may be required to be initiated a number of years prior to any construction.

Dublin Port Extension / Dublin Gateway ((Case Ref. No.: 29N.PA0007)

- 7.2.5 In addition, cognisance is taken of the European Court's 2006 ruling that areas of the Dublin Bay should have been included in the designation of the South Dublin Bay & River Tolka Estuary SPA as this may have additional implications on individual Appropriate Assessments (Case C-418/04, Commission of the European Communities v Ireland).
- 7.2.6 In the An Bord Pleanála Inspector's Report for the Dublin Port Extension (Case Ref. No.: 29N.PA0007), a number of issues were raised which will be taken into consideration during future project development stages. These issues included the following:
- It was considered acceptable that the focus of the Appropriate Assessment for the proposed extension was on the South Dublin Bay & River Tolka Estuary SPA, and that the other three sites (North Bull Island SPA, North Dublin Bay SAC and South Dublin Bay SAC) were too distant from the development site for any significant or likely adverse effects to arise (Wyse, 2007);
 - Concerns were expressed over calculations of the exact amount of intertidal area to be lost and that this was important because an understanding of the functionality of the SPA area could not be fully determined. Of particular interest was that the South Dublin Bay and River Tolka Estuary areas are functionally different and that the impact on the River Tolka Estuary may be underestimated;
 - The full extent of changes to the sediment regime and consequent impacts on the benthic food resource within the Tolka Estuary must be adequately established;
 - Additional surveys were required to be carried out when the site was exposed. Further confirmation regarding the variations in the percentage of bird populations using the development area was deemed required;

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- Further clarification on how significant the site was to each of the qualifying bird species populations was required. It was identified that the site might support a higher density of birds than the rest of the Tolka Estuary, when it was available;
- Concerns about the impact of the loss of benthic resource;
- It was accepted that the impact of re-suspension and deposition of sediments as a result of dredging was unlikely to be significant. However, it was felt that the extent of contamination within the sediments had not been established;
- It was also felt that disturbance from noise, vibration, lighting and port activity was not likely to be significant.

7.3 Mitigation Principles and Strategies

7.3.1 The considerations outlined in Section 7.2 have been used to inform the mitigation principles and strategies required for each of the currently preferred options of the DPC Masterplan.

7.3.2 A summary of the impacts and mitigation required for each option of the Masterplan is provided in Table 7 and in further detail in Appendix 4. Explanations of each mitigation item are provided below. The table indicates which options require a Dredging Mitigation Strategy, as well as highlighting the impacts of dredging itself.

Table 7: Summary of Masterplan Options, Impacts and Mitigation Items.

Masterplan Option/Activity	Impacts	Mitigation
Cruise Liner Berths / Tourist Information Centre - North Quay Extension Area (North Side)	Pollution Disturbance	P1 – Pollution Control D1 – Noise & Vibration Reduction D2 – Lighting Reduction D3 – Timing development activities D4 – Ship movements DMS – Dredging Mitigation Strategy
North – South Interconnector Bridge	Pollution Disturbance Habitat Loss Habitat Severance	P1 – Pollution Control D1 – Noise & Vibration Reduction Impact avoidance (design phase)
Ro-Ro and Bulk Handling Facilities - Alexandra Basin West (North Side)	Pollution Disturbance	P1 – Pollution Control D1 – Noise & Vibration Reduction D2 – Lighting Reduction D4 – Ship movements DMS – Dredging Mitigation Strategy
Lo-Lo Berths and Yard - Ocean Pier Area (North Side)	Pollution Disturbance	P1 – Pollution Control D1 – Noise & Vibration Reduction D2 – Lighting Reduction D4 – Ship movements DMS – Dredging Mitigation Strategy

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Masterplan Option/Activity	Impacts	Mitigation
Lo-Lo Berths + Facility (Central Port Area – North Side) – Alexandra Basin East	Pollution Disturbance	P1 – Pollution Control D1 – Noise & Vibration Reduction D2 – Lighting Reduction DMS – Dredging Mitigation Strategy
Dedicated Access and Egress Road System and Rail Spurs (North Side)	Pollution Disturbance	P1 – Pollution Control D1 – Noise & Vibration Reduction D2 – Lighting Reduction
Dedicated Ro-Ro Yards at Eastern Limit of Re-Developed Port (North Side)	Habitat Loss Habitat Modification Pollution Disturbance	H1 – Intertidal Habitat Creation P1 – Pollution Control D1 – Noise & Vibration Reduction D2 – Lighting Reduction D3 – Timing development activities D4 – Ship movements DMS – Dredging Mitigation Strategy
Southern Developments (Lo-Lo facility, Bulk Solid, Multi Usage Berths, Associated Access Roads)	Habitat Loss Habitat Modification Pollution Disturbance	H2 – Replacement Tern Habitat P1 – Pollution Control D1 – Noise & Vibration Reduction D2 – Lighting Reduction D3 – Timing development activities D4 – Ship movements DMS – Dredging Mitigation Strategy
Enhancement Projects / Boundary Softening (including north shore footpath and cycleway)	Disturbance	D1 – Noise & Vibration Reduction D2 – Lighting Reduction
Imported car storage facility and bridge	Pollution Disturbance	D1 – Noise & Vibration Reduction D2 – Lighting Reduction
Capital Dredging	Pollution, Disturbance & Habitat Modification	DMS – Dredging Mitigation Strategy
Maintenance Dredging	Pollution, Disturbance & Habitat Modification	DMS – Dredging Mitigation Strategy

7.4 H1, H2 – Habitat Creation

7.4.1 As indicated in Section 6, a loss of Natura 2000 habitat for qualifying species is predicted:

- Marine structures (dolphins) used by breeding terns; and
- Loss of approximately 21 ha of Natura 2000 designated habitat.

7.4.2 As previously indicated at project level, compensatory measures can include restoration, creation and enhancement. For the terns, it is proposed that alternative and larger breeding areas are provided, whilst for the intertidal area loss, it is proposed that suitable new intertidal habitat is created.

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- 7.4.3 Any replacement habitat has to be functionally equivalent to the habitat that is lost both in terms of carrying capacity for qualifying features but also in terms of maintaining biological processes and site integrity in the long term.
- 7.4.4 EU guidance (EC, 2007) requires that compensation should be effective at the time the damage to the site concerned occurs. The implementation schedule adopted has to ensure continuity of the ecological processes essential for maintaining the integrity of the Natura 2000 network. In addition, new designations as part of compensation measures have to be submitted to the Commission before they are implemented and before the realisation of the project but after its authorisation. Temporary protection may be required prior to full designation to ensure protection during implementation.
- 7.4.5 With regard to the extent of compensatory measures, guidance suggests that the compensation/damage ratios should be well above 1:1 (EC, 2011). Compensation ratios of 1:1 or below are only acceptable when it can be demonstrated that the compensatory measures will be 100% effective in restoring good structure and functionality in a short period of time. Further detail on habitat creation is provided below.

H1 – Intertidal Habitat Creation

- 7.4.6 The alternative intertidal habitat will be created for those qualifying species identified as using the area to be lost to the dedicated Ro-Ro yards at the eastern limit of the port estate. The alternative habitat will need to include feeding areas which provide suitable resources to support qualifying features at appropriate times of years.
- 7.4.7 It may be possible that this compensatory habitat could be created outwith the Dublin Bay area and potentially at more than one location if an area within Dublin Bay cannot be identified. However, the total alternative area will be at least the area of the intertidal habitat reclaimed in extent and will demonstrate that the conservation objectives of the qualifying features affected are not compromised.

Natura 2000 Scoping Exercise – for potential recipient sites

- 7.4.8 A scoping exercise of SPAs and SACs could be undertaken to establish those areas suitable as recipient sites to receive birds potentially displaced from the Dublin Bay area. Those bird species most at risk from displacement will be determined through the bird surveys, and the recipient site would be on the migratory flight paths of these species. These alternative sites would then need habitat creation and or enhancement to provide the extra carrying capacity for the displaced birds.

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Bird Surveys

- 7.4.9 Bird surveys in 2009/2010 suggested that the area of Natura 2000 site proposed for reclamation was used only infrequently by birds during the winter months due to infrequent exposure (Natura Environmental Consultants, 2010).
- 7.4.10 Species peaks were observed during March 2010 which coincided with spring tides and the most abundant species were black-headed gull, Brent goose and oystercatcher. High numbers of birds appear to occur when spring tides coincide with peak numbers of birds in the rest of the estuary (Natura Environmental Consultants, 2010). Similar results were obtained during surveys to inform the Dublin Gateway EIS (Royal Haskoning, 2008), although the most regular visitors during the period assessed (1996-2008) were oystercatcher, curlew, turnstone and common tern.
- 7.4.11 Brent geese were present in the Dublin Bay Area mainly during the winter months (November onwards) until March when they peak (Natura Environmental Consultants, 2010). During this period many birds roost in Dublin Bay but feed inland on amenity grasslands. In March, the geese appear to switch back to estuarine feeding reflecting the peak in numbers recorded at this time.
- 7.4.12 However, surveys have also indicated that the total number of birds has been steadily increasing in the Dublin Bay area, although there have been significant fluctuations. Moreover, the previous An Bord Pleanála Inspector's Report (Wyse, 2007) indicated that the available information at that time was not adequate to be able to state that the qualifying features of the Natura 2000 sites would not be affected (Section 7.2.6).
- 7.4.13 Additional surveys should be carried out to confirm the usage of the area of interest, and to confirm those species that utilise the site during spring tide events. This will assist in determining those qualifying species most at risk from habitat loss. The current information is unclear as to the species and the numbers of birds and whether they are utilising the area solely for foraging. Specific vantage point surveys to provide 'through-the-tide' counts and bird behaviour will continue to be undertaken. These will be undertaken in the same way as the BirdWatch Ireland low tide counts (BirdWatch Ireland, 2011) and would be compatible with low tide counts undertaken previously (Royal Haskoning, 2008).
- 7.4.14 Wintering waterbird populations are monitored annually across Ireland through BirdWatch Ireland, and this includes locations across the Dublin Bay area. It is anticipated that these surveys would provide information on the total waterbird population of the area, thus enabling an understanding of the contribution of the Tolka Estuary and the area to be reclaimed to that total population to be determined.

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Benthic and Prey Species Surveys

- 7.4.15 The significance of the site for birds is also related to the prey species that occur there and which are exposed on extreme low spring tides. Information on prey species available at the existing site will be required in order to inform requirements at the recipient site.
- 7.4.16 Utilising material from dredging to create replacement habitat may assist in developing the faunal diversity (assuming that the dredged material is suitable for reuse).
- 7.4.17 Some information on benthic and prey species is available from the previous Dublin Gateway project (Royal Haskoning, 2008). Overall the area was characterised by low species diversity with the majority of sites dominated by a few polychaete and oligochaete species found in high numbers. Also present in high numbers was the beadlet anemone *Actinia equina*. It was concluded that the communities present were characteristic of the fine, mobile sediments and general environmental conditions within Dublin Bay. However, it is recognised that the Bay's dynamic environment could have profound changes in faunal diversity (Buckley et al. 2004).
- 7.4.18 To understand the implications of changes in the invertebrate community, the community will need to be considered from a functional ecology perspective. Investigations into the relationship between biomass and trophic level (the position in the food chain) as well as the taxa involved will need to be undertaken.
- 7.4.19 Additional survey work is required to ensure that there is adequate information on the benthic and prey species relationships at the proposed development areas. Through-the-tide counts for birds will provide some information on the areas used and the type of foraging undertaken. These areas will be targeted for benthic sampling which will consist of Day-grab and intertidal (coring) samples to ensure compatibility and allow comparisons to be made with the previously collected data (Royal Haskoning, 2008). A re-characterisation of the study area could be made inline with that carried out in 2008 which itself was partly a resurvey of sites sampled in 1998. This would provide information on the variation in faunal diversity of the Dublin Bay area to enable equitable replacement habitat to be designed.

Development of potential recipient sites

- 7.4.20 Identification of potential recipient sites for habitat creation will take into account results of bird surveys, and the presence of these species at these sites. The presence of prey species at these sites will need to be demonstrated to ensure that the habitat is suitable. Modelling work will confirm that the required carrying capacity is available.

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- 7.4.21 In addition, an assessment of the actual physical creation of suitable habitat at the potential recipient sites will be required. Creation of saltmarsh and intertidal habitat for birds to mitigate for habitat lost has been shown to be successful elsewhere.
- 7.4.22 Creation of suitable recipient habitat may require a feasibility study to be carried out to provide an understanding of erosion and deposition systems at the sites. This would be carried out through hydrodynamic modelling of tides and currents. The effect of size and location of created intertidal areas will then be analysed to investigate the potential for changes to accretion and deposition at the possible recipient sites.
- 7.4.23 Habitat may be created through managed retreat (also known as managed realignment) which is the exposing of an area not previously exposed to flooding to become flooded through the managed removal of coastal defences. Such an approach would require planning and consultation with the appropriate authorities and stakeholders.
- 7.4.24 Alternatively, habitat could be created through mudflat construction using dredged material. A source of material from which to create this habitat will need to be determined. EC guidelines (EC, 2011) suggest developing a sustainable dredging and sediment management regime, with the potential for benefits in rebuilding morphological structures and maintaining conservation status. However, there will be a requirement to ensure that sediments are uncontaminated, either from chemicals or from biological contaminants (e.g. non-native species).
- 7.4.25 As indicated, more than one recipient site may be determined. These areas may be targeted as recipient sites for different species depending on the outcome of the additional bird surveys. However, their combined functionality will need to demonstrably provide carrying capacity for each qualifying species.
- 7.4.26 Table 8 provides a provisional schedule of activities. Reclamation of habitat will only go ahead once monitoring has indicated, and has been accepted by the relevant statutory authority, that the replacement habitat is fulfilling the conservation objectives. This means that an understanding of how the one or more recipient areas contribute to the conservation objectives is required. An analysis of each of the recipient sites for their current and potential carrying capacity based on their development as a functional unit will also require to be carried out.
- 7.4.27 Analysis of data will indicate the in-progress carrying capacity and may also give an indication of the potential capacity. The final reclamation of habitat may therefore occur later than indicated if conservation objectives cannot be fulfilled. Ongoing surveys of bird species (through-the-tide counts) will continue as required, but for at least three years after reclamation of land.

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Table 8: Schedule of Activities for Replacement Intertidal Habitat.

Year	Activity
1	Monitoring of bird populations in Dublin Bay area as necessary Assessment of most at risk bird species Assessment of migratory flight paths Benthic and prey species surveys Scoping to identify potential recipient sites Hydrodynamic modelling of recipient sites Continued scoping of potential recipient sites
2	Monitoring of bird populations in Dublin Bay area as necessary Determine source of material for habitat creation Analysis of source material
3	Monitoring of bird populations in Dublin Bay area as necessary Creation of new habitat Monitoring of bird populations at new habitat Survey for prey species at new habitat Monitoring of accretion and erosion
4	Monitoring of bird populations in Dublin Bay area as necessary Creation of new habitat Monitoring of bird populations at new habitat Survey for prey species at new habitat Monitoring of accretion and erosion Analysis of carrying capacity
5+	Reclamation of intertidal habitat On-going monitoring of bird populations

H2 – Replacement Tern Habitat

7.4.28 The capacity of the replacement tern habitat will take into account the total number of breeding terns within the Masterplan area, including the number using the non Natura 2000 designated tern dolphin and locations around the port area where terns have been known to breed. There is good data on tern usage of the dolphins so no surveys are immediately required. However, depending on when the option from the plan may be implemented, an updated survey of the dolphins could be undertaken to confirm the baseline.

7.4.29 Continued monitoring will be required to ensure that new nesting colonies are maintained at their present size (or increasing) therefore demonstrating that the development is not affecting the conservation objectives or integrity of the SPA. Using available information from all existing surveys and additional information from future surveys will confirm whether numbers are stable or whether they have continued to increase and will be essential to ensure there are no implications for the Site's integrity.

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- 7.4.30 Nest counts at the dolphins (and any other nesting areas) will be undertaken at least ten times during the tern breeding season (May-August). Observations will be made from the southern side of the former Coastal Lines terminal inline with previous surveys (Royal Haskoning, 2008). More precise information can be collected by visiting the dolphins and counting the number of active nests, eggs and dead chicks (if present). These visits would be undertaken a maximum of five times. Such visits also have a tendency to cause disturbance and permission will be required from NPWS.
- 7.4.31 Exclusion of dolphins (and potentially other locations within the Port Estate) will only be implemented once the replacement tern habitat is in position and proven to be of suitable replacement capacity. The non Natura 2000 designated tern dolphin should be excluded initially.
- 7.4.32 Preliminary sites have been suggested for the replacement habitat (Figure 1) but further assessment of the locations will be required to ensure minimal disturbance and exposure to maximise the potential success rate.
- 7.4.33 Additional monitoring may be required at other sites. It is known that birds nesting on the dolphins fledged at other sites, e.g. Dalkey Islands and Rockabill SPAs, and so birds normally breeding on the existing dolphins may decide to breed other than on the alternative sites once the original dolphins are excluded. The Dalkey Island Terns Project (<http://www.birdweb.net/tern.html#anchortern10>) undertakes annual counts of breeding terns in the area and may provide the information required for that location.
- 7.4.34 It is important to take into account options of the Masterplan that may affect the integrity of the alternative nesting sites. This will ensure that there are no additional disturbance impacts on the terns. Preliminary locations for the replacement habitat are adjacent to the land reclaimed for the dedicated Ro-Ro yards at the eastern limit of the re-developed port. It is possible that reclamation may occur after the tern habitat creation in which case it is important to ensure that this activity will not disturb terns.
- 7.4.35 A preliminary schedule of activities related to the creation of tern habitat is shown in Table 9.

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Table 9: Schedule of Activities for Replacement Tern Habitat.

Year	Activity
1	Monitoring of tern populations on existing dolphins
2	Construction of alternative nesting sites Exclusion of non-SPA dolphin Continued monitoring of SPA dolphin Monitoring of alternative nesting sites
3	Continued monitoring of SPA dolphin Monitoring of alternative nesting sites
4	Exclusion of SPA dolphin Monitoring of alternative nesting sites
5	Dolphin removal / redevelopment

7.5 D1 – Disturbance (Noise & Vibration Reduction)

7.5.1 Operational noise and vibration levels will be maintained below suitably determined threshold levels. These levels will be determined based on published information on the reactions of birds to noise, and taking into account current noise levels across the DPC estate. Where this information is unavailable for the Feature of Interest of concern, a conservative approach will be taken.

7.5.2 An assessment of current noise levels at various locations across the DPC estate will therefore be required, with an understanding of the range and degree of variation. For instance, some activities are likely to create peaks of noise and vibration that will dissipate rapidly.

7.5.3 Noise modelling will be required to calculate likely disturbance areas for species and for options of the Masterplan. This information will feed into the determination of suitable timing / threshold levels for species / options and activities. Research generally suggests that birds habituate quickly to most new noise sources.

7.6 D2 – Disturbance (Lighting Reduction)

7.6.1 Increased lighting during construction and operation may cause disturbance to birds. However, it is important to note that there is already considerable light spill in the area, from the existing port facilities and from Dublin city. Any illumination during operations in a zone already well lit is therefore unlikely to cause an adverse effect.

7.6.2 Design of additional lighting for construction and operation should ensure minimal light spillage. Lighting could be shielded or angled away from sensitive areas, such as the existing or relocated tern breeding areas, as necessary.

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7.7 D3 – Disturbance (Timing of Development Activities)

7.7.1 The timing of development activities will be taken into consideration to avoid, where feasible, important habitat/species life-cycle stages as required. For instance, the majority of the Features of Interest at the South Dublin Bay & River Tolka SPA are species of wintering bird. Avoiding this period, where feasible, may avoid an impact. However, bird survey information suggests that the area proposed for reclamation is infrequently exposed during winter and is therefore utilised only at a low level during this time (Natura Environmental Consultants, 2010).

7.7.2 One species of passage migrant (roseate tern) and one breeding species (common tern) are also Features of Interest of the SPA. Careful consideration will be given to the timing of individual components of the Masterplan and the activities therein to prevent cumulative effects of disturbance, and provide opportunities for the displacement of birds to alternative locations. Ensuring that potential construction activities in proximity to and likely to result in significant disturbance effects are undertaken outwith the tern breeding season completely (approximately May-August), where feasible, will prevent any disturbance.

7.8 D4 – Disturbance (Ship Movements)

7.8.1 Ship movements may also disturb species. Habituation to movement does occur but this depends on the level of disturbance and the species of interest. An analysis of current ship movements and modelling of projected movements will determine whether disturbance from increased / larger capacity shipping is likely to occur.

7.9 Impact Avoidance

7.9.1 It has been determined that the North – South Interconnector Bridge could result in habitat loss or habitat severance, the latter impact occurring as a result of the bridge acting as a barrier and altering flight lines.

7.9.2 Loss of habitat through bridge construction and operation is likely to be small relative to the size of the Natura 2000 sites. However, small areas of the river bed/bank may be exposed at low tides and additionally may be utilised as alternative foraging areas by waders, although their importance is likely to be small. Depending on the degree of shading, such areas may still be utilised after bridge construction. At the design stage, the extent of these areas can be determined and this can be taken into account where possible in the design phase of the bridge.

7.9.3 Although information is limited, literature reviews have shown that in general bridges do not cause negative impacts on local bird movements, feeding patterns or roosting sites (Loggie & Bryant, 1994). At the bridges studied, the majority of birds (more than 70%)

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were observed flying underneath the bridge decks. Moreover, birds using the River Liffey will be habituated to the current bridge. The proposed structure is therefore unlikely to act as a barrier to movement, particularly if the overall scale of the bridge is similar to that of the current structure. This can be determined at the design stage.

- 7.9.4 Mortality resulting from collisions with bridges is not considered to be important. Reviews (Ove Arup & Partners Hong Kong Ltd, 2002; Drewitt & Langston, 2008) have not found any evidence documenting bird collisions with bridges, although limited mortality with other structures such as masts was found. Indeed, for the Forth Replacement Crossing it was decided that a collision risk assessment was not required due to lack of evidence (Jacobs Arup, 2009).
- 7.9.5 However, any structure likely to significantly vary in vertical scale or having a much greater footprint to the existing structure will be subject to a screening report.

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7.10 D5 – Disturbance (Screening)

7.10.1 As indicated for mitigation item D4, movement can disturb bird species. The provision of a footpath and cycleway along the north shore has the potential to disturb qualifying species. Appropriate analysis will be undertaken to confirm if the potential exists for disturbance to the qualifying bird species in the area of the footpath/ cycleway and whether mitigation proposals (i.e. screening through some landscape planting at certain areas of the pathway) is required.

7.10.2 Research has been undertaken into the disturbance of birds by pedestrians (e.g. Ravenscroft et al., 2003) and information has been gathered to calculate disturbance distances from impacts (Cutts et al., 2009). These distances vary between species as well as disturbance type.

7.10.3 Through-the-tide vantage point surveys should be undertaken during the winter months to assess the species, numbers, location and activities of birds using the estuary. This information should then be combined with published information to determine the likely impact of the pathway on qualifying species if any, and therefore, if found to be necessary, the type of screening required. It is possible that the qualifying species may already be habituated to a degree of disturbance from the north side of the estuary; this will be taken into account in the assessment.

7.11 P1 – Pollution Control

7.11.1 DPC operations and activities are currently managed by DPC through the port's Emergency Response Plan and Operating Procedures which form part of the company's ISO 14001 certified Environmental Management System (EMS). The scope of the EMS will apply to future DPC operations. On this basis, DPC will aim to minimise potential negative impacts on surface, ground and coastal waters during its day to day operations and any proposed construction projects. Pollution incidents and site run-off will be controlled / avoided through the utilisation of standard good practice procedures and guidelines.

7.11.2 As for disturbance, the timing of activities will be taken into consideration to avoid, where feasible, important habitat/species life-cycles stages as required.

7.11.3 Appropriate construction mitigation and management measures relating to activities such as dredging, piling and dumping activities will be implemented to ensure that nearby habitats and species are impacted as little as possible by disturbed sediment and decreased water quality. Additional information on dredging is provided below. This includes the risk of impact on Features of Interest from contaminated sediments.

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7.11.4 Additionally, DPC will operate in accordance with all required licensing and planning conditions (i.e. dredging and dumping at sea, foreshore licences, licences to discharge trade effluent and waste management licences).

7.12 DMS – Dredging Mitigation Strategy

Maintenance Dredging

7.12.1 An AA Stage 1 screening report was previously produced to assess the impact of the maintenance dredging activities on Natura 2000 sites within the Dublin Bay area (Jacobs, 2011b). The activities relate to the dredging of navigable channels, berths and docks within Dublin Port for the period 2009-2014.

7.12.2 This report suggests that, in general, there would be no impact from maintenance dredging and dumping related to the Masterplan on Natura 2000 sites, either through habitat modification or pollution incidents.

7.12.3 The AA Stage 1 screening report also indicated that the majority of the material to be dredged for the port maintenance dredging was considered suitable for unrestricted dumping at sea.

7.12.4 Any potential increase in the areas of maintenance dredging (to take into account larger vessels for example) within the port fairways and channels will require appropriate consideration and assessment.

Capital Dredging

7.12.5 With regard to capital dredging requirements for the Masterplan, comprehensive studies regarding contamination levels will be undertaken with previous studies such as those on the Dublin Gateway project being taken into consideration during this process. It is recognised that reports relating to sediments from the proposed reclamation area for the Dublin Gateway Project indicated elevated levels of arsenic, copper and nickel (Royal Haskoning, 2009b). Samples from specific locations within this area showed a wider spectrum of elevated metal contaminants. Other materials, such as hydrocarbons, were generally within acceptable limits though.

7.12.6 However, it is recognised that the footprint of the dredging requirements for the currently proposed Dublin Gateway option in the DPC Masterplan is very much reduced as it is not proposed to develop Ro-Ro berths on the eastern boundary of the reclamation. Ship berthing for the currently preferred option is proposed only within the fairway on the southern boundary of the reclamation.

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- 7.12.7 Additional investigation and analysis of sediments will be required to take into account any future capital dredging requirements relating to the Masterplan. This investigation may include the following elements:
- Any areas requiring to be dredged (maintenance and/or capital) as part of future Masterplan proposals and not previously examined for contamination will need to be investigated appropriately;
 - Additional sampling at previously investigated areas may also need to be undertaken, specifically within areas to be dredged (i.e. Dublin Gateway on the eastern boundary of the estate); and
 - Modelling may be required to assess the potential hydrodynamic effects of changes to the extent of dredging and dumping, and the impacts on re-suspension of material, and on erosion and accretion.
- 7.12.8 A Dredging Mitigation Strategy for capital dredging will require to be developed to determine appropriate dredging techniques. This should include an assessment of the feasibility of treating contaminated sediments where required, and their subsequent disposal or beneficial reuse. Restricting operations to certain times of year and tide state will also be important in ameliorating sediment contamination impacts. The strategy will also include a synthesis of the modelling investigating the potential effect of dredging activities on habitat modification.

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8 Other Plans and projects

- 8.1.1 Article 6(3) of the Habitats Directive requires that in combination effects with other plans or projects are considered.
- 8.1.2 The relevant plans that have the potential to have in combination effects with the Dublin Port Masterplan are as follows:
- Regional Planning Guidelines for the Greater Dublin Area 2010 - 2022
 - Dublin City Development Plan 2011- 2017
 - Fingal County Development Plan 2011-2017
 - Dublin Docklands Masterplan 2008
 - Draft Poolbeg Planning Scheme
 - Eastern River Basin District Management Plan 2010
 - North Bull Island Management Plan
 - Dún Laoghaire-Rathdown County Development Plan 2010-2016
 - Dublin Bay - An Integrated Economic, Cultural and Social Vision for Sustainable Development 2007
 - Dublin Port National Development Plan Study 2009
 - Dublin City Biodiversity Action Plan 2008-2012
 - The Dublin Port 6 Year Dredge Plan
 - Richmond Road Area Action Plan 2007
 - Dún Laoghaire Harbour Company Masterplan (currently being finalised)
 - Dublin Eastern Bypass
- 8.1.3 The relevant projects that have the potential to have in combination effects with the Dublin Port Masterplan are as follows.
- The Dublin Waste to Energy Facility;
 - North City Arterial Watermain and Clontarf Flood Defences;
 - Sandycove to Sutton (S2S) project:
 - Dollymount Promenade and Flood Protection Project; and
 - Sandymount Promenade and Flood Protection Project.
 - Coastal Protection (Final Phase) Dodder Flood Alleviation Works; and
 - Dublin Eastern Bypass.
- 8.1.4 Each plan or project will require to be assessed in terms of in-combination effects with the Dublin Port Masterplan on the integrity of the Natura 2000 sites for each AA produced for each of the Masterplan options.
- 8.1.5 Preliminary screening indicated that ten projects or plans were assessed as having possible significant impacts, whilst eight projects or plans were assessed as no impact. One project could not be assessed due to lack of information (Appendix 5). Many of the plans and planning related reports indicate that EIAs and/or Appropriate Assessments will be required once individual projects have been finalised. Projects either identified no

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impacts on Natura 200 sites or proposed mitigation to ensure that no impacts would take place. Licence arrangements were required to be in place to for some aspects of mitigation or project activities to be carried forward.

- 8.1.6 Two projects were assessed as potentially having a significant in-combination impact, the Dollymount Promenade and Flood Protection Project, a component of the S2S Sutton to Sandycove Project, and the Dublin Eastern Bypass. The former project aims to provide 8km of promenade and cycleway and flood defence. The Appropriate Assessment on the North Bull Island and South Dublin Bay & River Tolka Estuary SPAs proposed a number of mitigation measures and concluded that there would be no impact on the sites.
- 8.1.7 It is possible that the Sandymount Promenade and Flood Protection Project component of the S2S Sutton to Sandycove Project may also have a potential impact on Natura 2000 sites and could therefore also have a potential in-combination effect with the DPC Masterplan. However, there is not enough information available at this time to answer any likely in-combination effects.
- 8.1.8 A feasibility study for the Eastern Bypass was published in 2007 and recommended a number of route and construction options. Potential impacts on Natura 2000 sites were envisaged but the impacts depended on the final design of the bypass. The Masterplan will require to be evaluated in light of the plans for this development, which may be implemented by 2030. In this context Dublin Port Company will consult with the National Transport Authority and other stakeholders before specific projects are brought forward for development. As a result, there is not enough information available at this time to determine any likely in-combination effects.
- 8.1.9 As previously indicated the various options of the Masterplan are currently options and may change. In addition, timing of construction of the options has not been determined and construction techniques are unknown. There may also be other plans or projects that are developed during the lifetime of the Masterplan. These will be included in an analysis of in-combination effects for Masterplan options as appropriate.
- 8.1.10 Initial screening has indicated that, with mitigation in place, there are unlikely to be any significant in-combination effects on Natura 2000 sites in relation to the Masterplan except for one project (see Appendix 5). However, analysis of individual Masterplan options may show significant impacts once more detailed information is known. In addition, it will be necessary to ensure that proposed mitigation is not inconsistent with mitigation proposed for other plans and projects.

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9 Summary

- 9.1.1 The Dublin Port Masterplan is being developed with the aim of modernising the port layout, to increase efficiency and throughput capacity. The Masterplan currently consists of ten engineering options which will be phased over a 30-year period (2011 – 2040).
- 9.1.2 The sequencing of the phased development has not yet been decided. Preliminary consultations are underway and during the course of these, the Masterplan engineering options may be amended which may also alter the phasing and the actual options to be developed.
- 9.1.3 The Port and Masterplan area lie adjacent to a number of Natura 2000 sites. Natura 2000 sites consist of SPAs and SACs which are classified under the European Union Birds Directive (79/409/EEC) and Habitats Directive (92/43/EEC). Procedures require that ‘any plan or project not directly connected with or necessary to the management of the site, but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to an Appropriate Assessment of its implications for the site in view of the site’s conservation objectives’. The DPC Masterplan constitutes such a ‘plan or project’.
- 9.1.4 In line with AA guidance (DEHLG, 2011), all Natura 2000 sites within 15 km of the Masterplan area were identified initially. Eighteen such sites were identified, eight SACs and 10 SPAs, with an overlap of designations in some locations.
- 9.1.5 Initial screening eliminated 14 sites from further assessment. The remaining four Natura 2000 sites were:
- North Dublin Bay SAC;
 - South Dublin Bay SAC;
 - North Bull Island SPA; and
 - South Dublin Bay & Tolka Estuary SPA.
- 9.1.6 The sites were designated for a variety of species and habitats. North Dublin Bay SAC has 11 Features of Interest (10 habitats and one species of liverwort). South Dublin Bay SAC has one Feature of Interest (mudflats and sandflats not covered by seawater at low tide). North Bull Island SPA has 18 Features of Interest (17 wintering bird species and a wetlands and waterbirds assemblage). South Dublin Bay & Tolka Estuary SPA has 13 Features of Interest (12 bird species and a wetlands and waterbirds assemblage).
- 9.1.7 Masterplan options have the potential to result in direct loss of habitat for designated bird species of the South Dublin Bay & Tolka Estuary SPA. This includes the loss of a mooring dolphin (used by breeding terns) and loss of intertidal habitat. No other direct habitat loss impacts were identified.

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- 9.1.8 Potential impacts resulting from habitat modification, pollution or disturbance were identified.
- 9.1.9 The Masterplan options were also screened for their potential to result in impact on the four identified Natura 2000 sites. Direct habitat loss and habitat modification were likely to occur as a result of two of the ten options. Nine options potentially resulted in pollution and/or disturbance impacts. None of the engineering options could be screened out as not having a potential significant effect.
- 9.1.10 In addition to the Masterplan engineering options, capital and any increase in maintenance dredging was indicated as potentially having a significant effect on Natura 2000 sites. An assessment of maintenance dredging activities for the DPC for the period 2009-2014 (Jacobs, 2011b) indicated that, at current levels, there would be no impact from maintenance dredging and dumping.
- 9.1.11 Previous survey and assessment work has indicated that some sediment material in some areas may be contaminated and may require additional mitigation.
- 9.1.12 An approach to mitigation for impacts resulting from the Masterplan has been laid out. Habitat loss would be mitigated for by the creation of new habitat; new intertidal habitat and new tern breeding locations.
- 9.1.13 In general, disturbance and pollution impacts can be mitigated through best practice techniques and guidelines. Additional information will be required, though, to ensure that such practices and guidelines will be sufficient. In specific circumstances, the north shore footpath and cycleway for instance, additional mitigation may be required if assessments show disturbance to be likely significant effect.
- 9.1.14 A Dredging Mitigation Strategy will be developed to address the impacts of the re-suspension of sediments, the presence of contaminated material, and the potential for habitat modification from capital and any increase in maintenance dredging. This will ensure that there will be no impact on Natura 2000 sites.
- 9.1.15 There is the potential for in-combination effects with other projects and plans. However, based on current information, for the majority of projects and plans assessed, there would be no significant in-combination effects with the Masterplan proposals.

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Glossary

AA	Appropriate Assessment
DEHLG	Department of Environment Heritage and Local Government
DPC	Dublin Port Company
EC	European Commission
EU	European Union
IROPI	Imperative Reasons of Overriding Public Interest
Lo-Lo	Load-On Load-Off
NHA	Natural Heritage Area
NIS	Natura Impact Statement
NWPS	National Parks and Wildlife Service
Ro-Ro	Roll-On, Roll-Off
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SPA	Special Protection Area

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Appendix 1 Natura 2000 Sites Qualifying Species and Habitats

Table A1.1: SPAs within 15 km of the DPC Masterplan area and their Features of Interest. Information taken from NPWS website (www.npws.ie/protectedsites/).

Code	Name	Features of Interest
004006	North Bull Island	Light-bellied Brent goose Shelduck Teal Pintail Shoveler Oystercatcher Golden plover Grey plover Knot Sanderling Dunlin Black-tailed godwit Bar-tailed godwit Curlew Redshank Turnstone Black-headed gull Wetland & Waterbirds
004016	Baldoyle Bay	Light-bellied Brent goose Shelduck Ringed plover Golden plover Grey plover Bar-tailed godwit Wetland & waterbirds
004024	South Dublin Bay & River Tolka Estuary	Light-bellied Brent goose Oystercatcher Ringed plover Golden plover Knot Sanderling Dunlin Bar-tailed godwit Redshank Black-headed gull Roseate tern

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Code	Name	Features of Interest
		Common tern Arctic tern Wetland & waterbirds
004025	Malahide Estuary	Great crested grebe Light-bellied Brent goose Shelduck Pintail Goldeneye Red-breasted merganser Oystercatcher Golden plover Grey plover Knot Dunlin Black-tailed godwit Bar-tailed godwit Redshank Wetland & waterbirds
004040	Wicklow Mountains	Merlin Peregrine
004113	Howth Head Coast	Kittiwake
004117	Ireland's Eye	Cormorant Herring gull Kittiwake Guillemot Razorbill
004172	Dalkey Islands	Roseate tern Common tern Artic tern

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Table A1.2: SACs within 15 km of the DPC Masterplan area and their Features of Interest. Information taken from NPWS website (www.npws.ie/protectedsites/).

Code	Name	Qualifying Habitat & code	Qualifying Species
000199	Baldoyle Bay	1140 - Mudflats and sandflats not covered by seawater at low tide 1310 - <i>Salicornia</i> and other annuals colonising mud and sand 1320 - <i>Spartina</i> swards (<i>Spartinion maritimae</i>) 1330 - Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) 1410 - Mediterranean salt meadows (<i>Juncetalia maritimi</i>)	None
000202	Howth Head	1230 - Vegetated sea cliffs of the Atlantic and Baltic coasts 4030 - European dry heaths	None
000205	Malahide Estuary	1140 - Mudflats & Sand flats not covered by seawater at low tide 1310 - Salicornia & other annuals colonising mud and sand 1320 - <i>Spartina</i> Swards 1330 - Atlantic Salt Meadows 1410 - Mediterranean Salt Meadows 2120 - Marram Dunes (White Dunes) 2130 - Fixed Coastal Dunes with Herbaceous Vegetation (Grey Dunes)	None
000206	North Dublin Bay	1140 - Mudflats and sandflats not covered by seawater at low tide 1210 - Annual vegetation of drift lines 1310 - <i>Salicornia</i> and other annuals colonising mud and sand 1320 - <i>Spartina</i> swards (<i>Spartinion maritimae</i>) 1330 - Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) 1410 - Mediterranean salt meadows (<i>Juncetalia maritimi</i>) 2110 - Embryonic shifting dunes 2120 - Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)	1395 - Petalwort (<i>Petalophyllum ralfsii</i>)

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Code	Name	Qualifying Habitat & code	Qualifying Species
		2130 - Fixed coastal dunes with herbaceous vegetation (grey dunes) 2190 - Humid dune slacks	
000210	South Dublin Bay	1140 - Mudflats and sandflats not covered by seawater at low tide	None
000713	Ballyman Glen	7220 - Petrifying springs with tufa formation (<i>Cratoneurion</i>) 7230 - Alkaline fens	None
000725	Knocksink Wood	7220 - Petrifying springs with tufa formation (<i>Cratoneurion</i>) 91E0 - Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)	None
001209	Glenasmole Valley	6210 - Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco Brometalia</i>)(*important orchid sites) 6410 - Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) 7220 - Petrifying springs with tufa formation (<i>Cratoneurion</i>)	None
002193	Ireland's Eye	1220 - Perennial vegetation of stony banks 1230 - Vegetated sea cliffs of the Atlantic and Baltic coasts	None
002122	Wicklow Mountains	3130 - Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoëto-Nanojuncetea</i> 3160 - Natural dystrophic lakes and ponds 4010 - Northern Atlantic wet heaths with <i>Erica tetralix</i> 4030 - European dry heaths 4060 - Alpine and Boreal heaths 6230 - Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas (and submountain areas in Continental Europe) 7130 - Blanket bogs (*active only) 8110 - Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and	1355 - Otter (<i>Lutra lutra</i>)

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Code	Name	Qualifying Habitat & code	Qualifying Species
		<i>Galeopsietalia ladani</i> 8210 - Calcareous rocky slopes with chasmophytic vegetation 8220 - Siliceous rocky slopes with chasmophytic vegetation 91A0 - Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles	

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Appendix 2 Natura 2000 Sites Conservation Objectives



Conservation Objectives for North Dublin Bay SAC [000206]

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

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

- ♦ [1140] Mudflats and sandflats not covered by seawater at low tide
- ♦ [1210] Annual vegetation of drift lines
- ♦ [1310] *Salicornia* and other annuals colonizing mud and sand
- ♦ [1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritima*)
- ♦ [1395] *Petalophyllum ralfsii*
- ♦ [1410] Mediterranean salt meadows (*Juncetalia maritimi*)
- ♦ [2110] Embryonic shifting dunes
- ♦ [2120] Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")
- ♦ [2130] * Fixed coastal dunes with herbaceous vegetation ("grey dunes")
- ♦ [2190] Humid dune slacks

Citation:

NPWS (2011) Conservation objectives for North Dublin Bay SAC [000206]. Generic Version 3.0. Department of Arts, Heritage & the Gaeltacht.

For more information please go to: www.npws.ie/protectedsites/conservationmanagementplanning

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Conservation Objectives for South Dublin Bay SAC [000210]

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

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

- ♦ [1140] Mudflats and sandflats not covered by seawater at low tide

Citation:

NPWS (2011) Conservation objectives for South Dublin Bay SAC [000210]. Generic Version 3.0. Department of Arts, Heritage & the Gaeltacht.

For more information please go to: www.npws.ie/protectedsites/conservationmanagementplanning

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Conservation Objectives for North Bull Island SPA [004006]

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:

- ♦ [wintering] *Branta bernicla hrota*
- ♦ [wintering] *Tadorna tadorna*
- ♦ [wintering] *Anas crecca*
- ♦ [wintering] *Anas acuta*
- ♦ [wintering] *Anas clypeata*
- ♦ [wintering] *Haematopus ostralegus*
- ♦ [wintering] *Pluvialis squatarola*
- ♦ [wintering] *Calidris canutus*
- ♦ [wintering] *Calidris alba*
- ♦ [wintering] *Limosa limosa*
- ♦ [wintering] *Limosa lapponica*
- ♦ [wintering] *Numenius arquata*
- ♦ [wintering] *Tringa totanus*
- ♦ [wintering] *Arenaria interpres*
- ♦ [] Wetlands & Waterbirds

Citation:

NPWS (2011) Conservation objectives for North Bull Island SPA [004006]. Generic Version 3.0. Department of Arts, Heritage & the Gaeltacht.

For more information please go to: www.npws.ie/protectedsites/conservationmanagementplanning

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Conservation Objectives for South Dublin Bay and River Tolka Estuary SPA [004024]

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:

- [wintering] *Branta bernicla hrota*
- [wintering] *Haematopus ostralegus*
- [wintering] *Charadrius hiaticula*
- [wintering] *Pluvialis squatarola*
- [wintering] *Calidris canutus*
- [wintering] *Calidris alba*
- [wintering] *Limosa lapponica*
- [wintering] *Tringa totanus*
- [passage] *Sterna dougallii*
- [breeding] *Sterna hirundo*

Citation:

NPWS (2011) Conservation objectives for South Dublin Bay and River Tolka Estuary SPA [004024]. Generic Version 3.0. Department of Arts, Heritage & the Gaeltacht.

For more information please go to: www.npws.ie/protectedsites/conservationmanagementplanning

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Appendix 3 Conservation Status of Features of Interest

Information taken from *The Status of EU Protected Habitats and Species in Ireland* (NPWS, 2008c).

Table A3.1: National Conservation Status of the Features of Interest of North Dublin Bay SAC.

Habitat & Code	Main Threats ¹	Overall Conservation Status
Mudflats and sandflats not covered by seawater at low tide (1140)	Aquaculture; Fishing; Bait digging; Removal of fauna; Reclamation of land; Coastal protection works; Invasive species particularly cordgrass; Impact of hard coastal defence structures; Sea level rise.	Poor
Salicornia and other annuals colonizing mud and sand (1310)	Spread of the Invasive species common cord-grass (<i>Spartina anglica</i>); Natural erosion; Accretion cycles; Storms.	Poor
Atlantic salt meadows (<i>GlaucoPuccinellietalia maritimae</i>) (1330)	Overgrazing; Erosion; Invasive species common cordgrass (<i>Spartina anglica</i>); Infilling & reclamation.	Poor
Mediterranean salt meadows (<i>Juncetalia maritimi</i>) (1410)	Overgrazing; Infilling and reclamation.	Poor
Embryonic shifting dunes (2110)	Natural erosion processes – storms and high tides; Recreation; Sand extraction; Construction of coastal protection works can cut off supply of sand.	Poor
Shifting dunes along the	Removal of beach materials;	Poor

¹ Environmental Threats & Conservation Status for Habitats and Species in Special Areas of Conservation derived from the NPWS (2008) *The Status of EU Habitats and Species in Ireland: Conservation Status in Ireland of Habitats and Species listed in the European Council Directive on the Conservation of Habitats, Flora and Fauna 92/43/EEC*

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Habitat & Code	Main Threats ¹	Overall Conservation Status
shoreline with <i>Ammophila arenaria</i> (white dunes) (2120)	Construction of coastal protection work; Compaction caused by motorised vehicles on the beach; Trampling of plant cover from pedestrian traffic; Interference with the supply of sand at a number of sites has negatively impacted on the natural functioning of this habitat, leading to a loss of area.	
Fixed coastal dunes with herbaceous vegetation (grey dunes) (2130)*	Development of sports pitches, golf courses, caravan parks; Coniferous plantations; Housing; Roadways; Airstrips; Recreation; Pedestrian traffic; Overgrazing and undergrazing; Introduction of nonnative plant species;	Bad
Humid dune slacks (2190)	Overgrazing and undergrazing; Over-stabilisation of dunes; Water abstraction and drainage; Golf course developments; Forestry; Coastal protection works.	Poor
Pettlewort (<i>Petalophyllum ralfsii</i>) (1395)	Loss of habitat due to coastal development such as golf courses	Good

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Table A3.2: National Conservation Status of the the Features of Interest of South Dublin Bay SAC.

Habitat & Code	Main Threats	Overall Conservation Status
Mudflats and sandflats not covered by seawater at low tide (1140)	Aquaculture; Fishing; Bait digging; Removal of fauna; Reclamation of land; Coastal protection works; Invasive species particularly cordgrass; Impact of hard coastal defence structures; Sea level rise.	Poor

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Appendix 4 Masterplan Engineering Options, Potential Impacts and Mitigation Items.

Masterplan Option	Impacts	Mitigation Item	Description
Cruise Liner Berths/Tourist Information Centre – North Quay Extension Area (North Side)	Pollution	P1 – Pollution Control	Prevent pollution incidents and minimise impacts of run-off on surface, ground and coastal waters.
	Disturbance	D1 – Noise & Vibration Reduction	Maintain noise and vibration below suitably determined threshold limits (requires assessment of current noise levels and modelling of predicted levels)
		D2 – Lighting Reduction	Ensure minimal light spillage, particularly in sensitive areas.
		D3 – Timing Development Activities	Schedule activities to avoid tern breeding season period (where possible)
		D4 – Ship Movements	Assess current levels and model projected movements
Pollution, Disturbance & Habitat Modification from dredging	DMS – Dredging Mitigation Strategy	Undertake additional sampling to determine contamination levels Investigate potential for treatment of contaminated materials ashore Undertake modelling to assess likely changes in sedimentation etc Develop Mitigation Strategy specifically for dredging	
North – South Interconnector Bridge	Pollution	P1 – Pollution Control	Prevent pollution incidents and minimise impacts of run-off on surface, ground and coastal waters
	Disturbance	D1 – Noise & Vibration Reduction	Maintain noise and vibration below suitably determined threshold limits (requires assessment of current noise levels and modelling of predicted levels)
Ro-Ro and Bulk Handling Facilities- Alexandra Basin West (North Side)	Pollution	P1 – Pollution Control	Prevent pollution incidents and minimise impacts of run-off on surface, ground and coastal waters
	Disturbance	D1 – Noise & Vibration Reduction	Maintain noise and vibration below suitably determined threshold limits (requires assessment of current noise levels and modelling of predicted levels)
		D2 – Lighting Reduction	Ensure minimal light spillage .
		D4 – Ship Movements	Assess current levels and model projected movements
Pollution, Disturbance & Habitat Modification from dredging	DMS – Dredging Mitigation Strategy	Undertake additional sampling to determine contamination levels Investigate potential for treatment of contaminated materials ashore Undertake modelling to assess likely changes in sedimentation etc Develop Mitigation Strategy specifically for dredging	
Lo-Lo Berths and Yard - Ocean Pier Area (North Side)	Pollution	P1 – Pollution Control	Prevent pollution incidents and minimise impacts of run-off on surface, ground and coastal waters
	Disturbance	D1 – Noise & Vibration Reduction	Maintain noise and vibration below suitably determined threshold limits (requires assessment of current noise levels and modelling of predicted levels)
		D2 – Lighting Reduction	Ensure minimal light spillage
		D4 – Ship Movements	Assess current levels and model projected movements
Bulk Liquid Facilities + Jetties and Lo-Lo Berths and Facilities (Central Port Area – North Side)	Pollution	P1 – Pollution Control	Prevent pollution incidents and minimise impacts of run-off on surface, ground and coastal waters
	Disturbance	D1 – Noise & Vibration Reduction	Maintain noise and vibration below suitably determined threshold limits (requires assessment of current noise levels and modelling of predicted levels)
		D2 – Lighting Reduction	Ensure minimal light spillage, particularly in sensitive areas.
		D4 – Ship Movements	Assess current levels and model projected movements

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Masterplan Option	Impacts	Mitigation Item	Description		
	Pollution, Disturbance & Habitat Modification from dredging	DMS – Dredging Mitigation Strategy	Undertake additional sampling to determine contamination levels Investigate potential for treatment of contaminated materials ashore Undertake modelling to assess likely changes in sedimentation etc Develop Mitigation Strategy specifically for dredging		
Dedicated Access and Egress Road System and Rail Spurs	Pollution	P1 – Pollution Control	Prevent pollution incidents and minimise impacts of run-off on surface, ground and coastal waters		
	Disturbance	D1 – Noise & Vibration Reduction	Maintain noise and vibration below suitably determined threshold limits (requires assessment of current noise levels and modelling of predicted levels)		
		D2 – Lighting Reduction	Ensure minimal light spillage, particularly in sensitive areas.		
Dedicated Ro-Ro Yards at Eastern Limit of the Port Estate (North Side)	Habitat Loss	H1 – Intertidal Habitat Creation	Y1 - Monitor bird populations in Dublin Bay area, assess most at risk species, determine migratory flight paths, carry out benthic and prey species surveys, carry out scoping exercise for recipient sites and initiate hydrodynamic modelling Y2 - Monitor bird populations in Dublin Bay area, determine and analysis source of material (if required), for habitat creation Y3 - Monitor bird populations in Dublin Bay area, create new habitat, monitor bird populations at new habitat, survey for prey species at new habitat, monitor accretion and erosion Y4 - Monitor bird populations in Dublin Bay area, create new habitat, monitor bird populations at new habitat, survey for prey species at new habitat, monitor accretion and erosion, analysis of carrying capacity Y5+ - Reclamation of intertidal habitats, on-going monitoring of bird populations		
		Disturbance	D1 – Noise & Vibration Reduction	Maintain noise and vibration below suitably determined threshold limits (requires assessment of current noise levels and modelling of predicted levels)	
			D2 – Lighting Reduction	Ensure minimal light spillage, particularly in sensitive areas.	
			D3 – Timing Development Activities	Schedule activities to avoid tern breeding season period (where possible)	
			D4 – Ship Movements	Assess current levels and model projected movements	
		Pollution	P1 – Pollution Control	Prevent pollution incidents and minimise impacts of run-off on surface, ground and coastal waters	
		Pollution, Disturbance & Habitat Modification from dredging	DMS – Dredging Mitigation Strategy	Undertake additional sampling to determine contamination levels Investigate potential for treatment of contaminated materials ashore Undertake modelling to assess likely changes in sedimentation etc Develop Mitigation Strategy specifically for dredging	
		Southern Developments (Lo-Lo facility, Bulk Solid, Multi Usage Berths, Associated Access Roads)	Habitat Loss	H2 – Tern Habitat Replacement	Can only be undertaken after reclamation of area for dedicated Ro-Ro yards if current replacement locations are taken forward Y1 - Undertake tern counts Y2 - Construct alternative nesting sites, exclude non-SPA dolphin, continued monitoring of SPA dolphin, monitoring of alternative nesting sites Y3 - Continued monitoring of SPA dolphin, monitor alternative nesting sites Y4 - Exclude SPA dolphin, monitor alternative nesting sites Y5 - Dolphin removal / redevelopment and de-designation
				Pollution	P1 – Pollution Control

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Masterplan Option	Impacts	Mitigation Item	Description
	Disturbance	D1 – Noise & Vibration Reduction	Maintain noise and vibration below suitably determined threshold limits (requires assessment of current noise levels and modelling of predicted levels)
		D2 – Lighting Reduction	Ensure minimal light spillage, particularly in sensitive areas
		D3 – Timing Development Activities	Schedule activities to avoid tern breeding season period (where possible)
		D4 – Ship Movements	Assess current levels and model projected movements
	Pollution, Disturbance & Habitat Modification from dredging	DMS – Dredging Mitigation Strategy	Undertake additional sampling to determine contamination levels Investigate potential for treatment of contaminated materials ashore Undertake modelling to assess likely changes in sedimentation etc Develop Mitigation Strategy specifically for dredging
Enhancement Projects/ Boundary Softening (including north shore footpath and cycleway)	Disturbance	D1 – Noise & Vibration Reduction	Maintain noise and vibration below suitably determined threshold limits (requires assessment of current noise levels and modelling of predicted levels)
		D2 – Lighting	Ensure minimal light spillage, particularly in sensitive areas.
		D3 – Timing Development Activities	Schedule activities to avoid tern breeding season period (where possible)
		D5 – Disturbance (Screening)	Year 1-3 Undertake bird surveys to determine bird numbers and species and their activities using the River Tolka Estuary Undertake assessment to determine if screening required
Imported car storage facility and bridge	Pollution	P1 – Pollution Control	Prevent pollution incidents and minimise impacts of run-off on surface, ground and coastal waters
	Disturbance	D1 – Noise & Vibration Reduction	Maintain noise and vibration below suitably determined threshold limits (requires assessment of current noise levels and modelling of predicted levels)
		D2 – Lighting Reduction	Ensure minimal light spillage

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Appendix 5 In-Combination Effects with Other Plans and Projects

Topic	Plan or Projects	Status	Overview	Possible Significant Impacts from Plan or Project	Possible Significant Impacts In-Combination Effects	Is there a risk of significant" in combination" effects with the Dublin Port Masterplan
Plans						
Plans and planning	Regional Planning Guidelines for the Greater Dublin Area 2010 - 2022	Published	The Regional Planning Guidelines for the Greater Dublin Area combines two Regional Authority areas - the Dublin Regional Authority and the Mid-East Regional Authority for the purposes of Regional Planning.	Yes	No	The RPG has incorporated the mitigation arising from the Stage 2 assessment into the strategic policies contained within the guidelines.
	Dublin City Development Plan 2011 - 2017	Draft	The Dublin City Development Plan sets out policies and objectives for the Greater Dublin Region. This plan guides how and where development will take place in the city over the next 6 years. Policies within the DCC Development Plan relating to Dublin Port: SI19 - To support the provision of a link between north Dublin Port and the Southern Cross/South Eastern Motorway via an eastern bypass of the city, in conjunction and co-operation with other transport bodies, the National Roads Authority and local authorities. The preferred method is by means of a bored tunnel and the preferred route is under Sandymount and Merrion Strand and Booterstown Marsh. However, the route and detailed design of the link road will be subject to an Environmental Impact Assessment and all statutory requirements, including a public consultation process, by the relevant authorities. An Appropriate Assessment of the proposed project for the entire route is also required in accordance with the Habitats Directive. REO16 - To examine the feasibility of a cruise terminal in the Poolbeg area and Dublin Port, including a review of the current disembarking point and its connectivity with the city and the development of four options for visitors within the city and set out recommendations.	Yes	No	Any proposal within the Dublin City Development plan will be subject to an Environmental Impact Assessment and all statutory requirements, including a public consultation process, by the relevant authorities. An Appropriate Assessment of the proposed project for the entire route is also required in accordance with the Habitats Directive.
	Fingal County Development Plan 2011- 2017	Draft	The Fingal County Development Plan sets out policies and objectives for the Fingal Region. This plan guides how and where development will take place in the area over the next 6 years	Yes	No	The Fingal County Development Plan has yet to be published however and Natura Impacts statement is being finalised and has undergrounds a consultation process. Any projects or plans under the FC development Plan will be subject to an AA Screening and where there is significant potential for impacts a Stage 2 will be progresses
	Dublin Docklands Masterplan 2008	Draft	The Dublin Docklands Masterplan sets out policies and objectives for the Dublin Docklands Region.	Yes	No	The Dublin Docklands Masterplan has implemented policies and objectives within the Masterplan that specifically related to natural heritage. Impacts in relation to Natura 2000 sites are related to adverse effects on water quality. A monitoring programme will be implemented to ensure that there will be no negative impacts on the integrity conservation objectives of functioning of any Natura 2000 sites as a result of the Masterplan.

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Topic	Plan or Projects	Status	Overview	Possible Significant Impacts from Plan or Project	Possible Significant Impacts In-Combination Effects	Is there a risk of significant" in combination" effects with the Dublin Port Masterplan
Plans						
	Eastern River Basin District (ERBD) Management Plan 2010	Published	This ERBD Management Plan describe the actions that are proposed to ensure the necessary protection of our waters over the coming years.	No	No	The actions and objectives in relation to the Water Framework Directive and the ERBD Management plan are to protect and restore Protected Areas.
	Dún Laoghaire-Rathdown County Development Plan 2010-2016	Published	The Dún Laoghaire-Rathdown County Development Plan sets out policies and objectives for the Dún Laoghaire-Rathdown Region. This plan guides how and where development will take place in the area over the next 6 years	No	No	This screening report evaluates the Plan to see if it needs to be the subject of a Stage Two Assessment. It finds that the Plan has been formulated to ensure that uses, developments and effects arising from permissions based upon the Plan (either individually or in combination with other plans or projects) shall not give rise to significant effects on the integrity of any Natura 2000 site.
	Dublin Bay - An Integrated Economic, Cultural and Social Vision for Sustainable Development 2007	Published	This report is intended to be the first stage in the preparation of a strategic framework plan for the Dublin Bay area. It is described as <i>"a first step towards a detailed master plan to protect its heritage, to enhance its vitality, and to assure its sustainable use."</i>	Yes	No	The plan sets out a vision for what might be achieved in the Dublin Bay Area, including the provision of options and alternatives. The report suggests the establishment of a marine reserve in the bay area and a body to administer it, and that this be defined as part of the master plan for the bay to be developed by Dublin City Council.
	Richmond Road Area Action Plan 2007	Published	The Richmond Road Area Action Plan sets out policies and objectives for the Richmond Road Area.	No	No	This plan set out a number of objectives to protect and conserve the natural river habitat in the area. These objectives will not cause any adverse impact to the Natura 2000 sites.
	Draft Poolbeg Planning Scheme	Published	The Planning Scheme provides a framework to deliver long-term social, economic, planning and environmental benefits for Dublin. The scheme includes provision of transport facilities, a district centre and community facilities.	Yes	No	The likely impacts of the scheme were reviewed in the context of the Dublin Docklands Master Plan 2008. Mitigation measures were compliant with those already incorporated into the Master Plan and would be implemented to ensure that integrity of the designated sites is protected. A significant negative impact on Brent geese was recorded due to loss of grassland along a preferred road route. At that time, the Natura 2000 site area was an interim designation and it was proposed that alternative access arrangements would be provided if the designation was taken forward, preventing any adverse impacts on the site.
	Dún Laoghaire Harbour Company Masterplan	Published	The Masterplan was produced in 2011 with the aim of realising the harbour as a marine, leisure and tourist facility. Consultation closed on 31 August 2011 and finalisation is in progress.	Yes	No	An Appropriate Assessment of the Masterplan Planning Report was undertaken in July 2011. It suggested mitigation measures in line with the Dún Laoghaire-Rathdown County Development Plan 2010-2016.
Biodiversity	North Bull Island Management Plan	Published	The North Bull Island Management Plan aimed to summarize and update the key data, particularly about the current status of habitats and species of conservation status, to discuss the current management issues affecting natural heritage importance of the island and to outline specific recommendations to manage these issues.	No	No	The purpose of this plan was to identify issues that could potentially effect North Bull Island and propose recommendations to address these the plan will not have any adverse impact on the Natura site.
	Dublin City Biodiversity Action Plan 2008-2012	Published	The Biodiversity Action Plan is in place to aid with the objectives of the Dublin City Development Plan relating to quality of life, greenspace and amenity provision, planning development, and the protection of natural heritage in the city.	No	No	The purpose of this plan is to aid with the objectives of the Dublin City Development Plan relating to the protection of natural heritage in the city. The plan will not have any adverse impact on the Natura 2000 sites.

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Topic	Plan or Projects	Status	Overview	Possible Significant Impacts from Plan or Project	Possible Significant Impacts In-Combination Effects	Is there a risk of significant" in combination" effects with the Dublin Port Masterplan
Plans						
Other	The Dublin Port 6 Year Dredge Plan	Approved	This document supports an application for a Dumping at Sea Permit for a 6-year maintenance dredging plan for the period from 2009-2014.	Yes	No	Any dredging and dumping at sea requirements for Dublin Port will be subject to licence by the EPA under this licence
	Dublin Port National Development Plan Study 2009	Published	The report concerns an assessment of the role and future development of Dublin Port within the context of the National Development Plan.	No	No	-
Energy	The Dublin Waste to Energy Facility	Approved	The Environmental Protection Agency have issued a licence to DCC to operate a non hazardous waster to energy facility. The proposed Dublin Waste to Energy (DWtE) facility will be located on the Poolbeg Peninsula in Dublin. The majority of the Site is located south of Pigeon House Road and is rectangular in shape measuring circa 160m x 340m, covering an area of approximately 5.5 ha (13.6 acres).	No	No	The are no significant impacts envisaged on any of the Natura 2000 sites as a result of the DWtE facility. Any impacts on water quality have the potential to interfere with the key relationships and structure of the SPA as the majority of qualifying features are aquatic ecosystem based. However, during construction any discharge will be in accordance with DCC requirements and during operation the cooling water will be discharged into Dublin Bay in accordance with the EPA Waste Licence (0232-01) for the facility. There is the potential for disturbance to the Arctic and common terns nesting on the CDL and ESB Dolphins during the breeding season (May to August) during the construction phase, however mitigation will be put in place to reduce this impact.
Amenity & Flood	Sutton to Sandycove S2S Project	N/A	The total length of the proposed promenade and cycleway will be approximately 22km in length from Sutton to Sandycove. The scheme proposes to upgrade and join up various existing sections of the promenade and cycleway to form a continuous route along the seafront of Dublin Bay.	N/A	N/A	This project is made up of the: - Dollymount Promenade and Flood Protection Project - Sandymount Promenade and Flood Protection Project
	S2S - Dollymount Promenade and Flood Protection Project	Awaiting Approval - EIS Published	The Dollymount Promenade and Flood Protection Project (DPFPP) is a dual purpose scheme: 1. Provide promenade and cycleway connecting existing sections to complete 8km promenade and cycleway in North Dublin Bay and contribute to the overall aim of providing 22km in Dublin Bay. 2. Provide flood defence between the Wooden Bridge and Causeway Road for residences along Clontarf Road and James Larkin Road.	Yes	Yes	The proposed project has identified a number of potential impacts to the North Bull Island SPA and the South Dublin Bay & River Tolka Estuary SPA. The Appropriate Assessment report has proposed a number of mitigation measure in relation to the proposed scheme and has concluded on the basis of these that there will be no impact on the integrity of the Natura 2000 sites.
	S2S - Sandymount Promenade and Flood Protection Project	Feasibility	A feasibility report was completed by Scott Wilson in September 2007. This looked at the construction of a 8.5km long combined promenade and cycleway between Sean Moore Park and East Pier, Dún Laoghaire. There is no further information at this time.	-	-	No information at this time
Flood	North City Arterial Watermain and Clontarf Flood Defences	Approved	The New Water Pipeline from Fairview Park to Sutton and construction of flood defences along Clontarf Promenade, Dublin 3 was approved with conditions in 2008. Flood defence works will be carried out affecting the entire area of Clontarf Promenade, an area of public open space with path and cycleways, amenity grassland and ornamental tree and shrub planting. The existing sea wall and the rock-armoured shoreline to the west near Alfie Byrne Road are the boundaries with the area	Yes	No	Some potential impacts have been identified in relation to construction activities. However mitigation measures for wintering waterfowl are proposed and principally comprise of seasonal restriction on construction activity on the pipeline in the section adjoining the South Bull Lagoon. The work on this section of the pipeline will be carried out between mid-April and mid-August. This would ensure that work is completed during the summer months when waterfowl numbers are low, and will minimise disturbance to birds.

Dublin Port Company
Dublin Port Master Plan 2011 - 2040







Strategic Natura Impact Statement (Appropriate Assessment)

Topic	Plan or Projects	Status	Overview	Possible Significant Impacts from Plan or Project	Possible Significant Impacts In-Combination Effects	Is there a risk of significant" in combination" effects with the Dublin Port Masterplan
Plans						
			subject to conservation designations.			
	Coastal Protection (Final Phase) Dodder Flood Alleviation Works	Awaiting Approval	Flood alleviation works in relation to the Dodder.	No	No	No significant impacts identified during the AA screening assessment for the project
Transport	Dublin Eastern Bypass	Feasibility	The Dublin Eastern Bypass will complete a full ring motorway for the city by closing the 11km gap that exists on the south-eastern side between the Dublin Port Tunnel and the M50. A 2007 feasibility study recommended three options that included a viaduct or bored tunnel across the Port, a viaduct or tunnel across Sandymount Strand, and tunnels and cuttings from there to the N11 and Sandyford. Whilst there is a commitment to this project, a detailed timetable is not available. However, the proposed development may be implemented by 2030.	Yes	Yes	The feasibility study concluded that a viaduct would have some limited impacts on the ecology of the South Dublin Bay but also that this would require more detailed examination. Bored tunnels were recommended, but the detailed construction techniques would depend on the geology of the area. Temporary construction shafts may be required in the bay. In addition, surface facilities, such as tunnel ventilation points, could have small ecological impacts. A viaduct across the Strand would result in some loss of intertidal habitat, possible interference with local tidal flows, disturbance of seabirds and impacts on Annex I habitats. Additional information is required to finalise route options and thereby determine potential ecological impacts. Possible Natura 2000 sites affected would be the South Dublin Bay SAC and the South Dublin Bay & River Tolka Estuary SPA.

Dublin Port Company
Dublin Port Master Plan 2011 - 2040
Draft Strategic Natura Impact Statement (Appropriate Assessment)

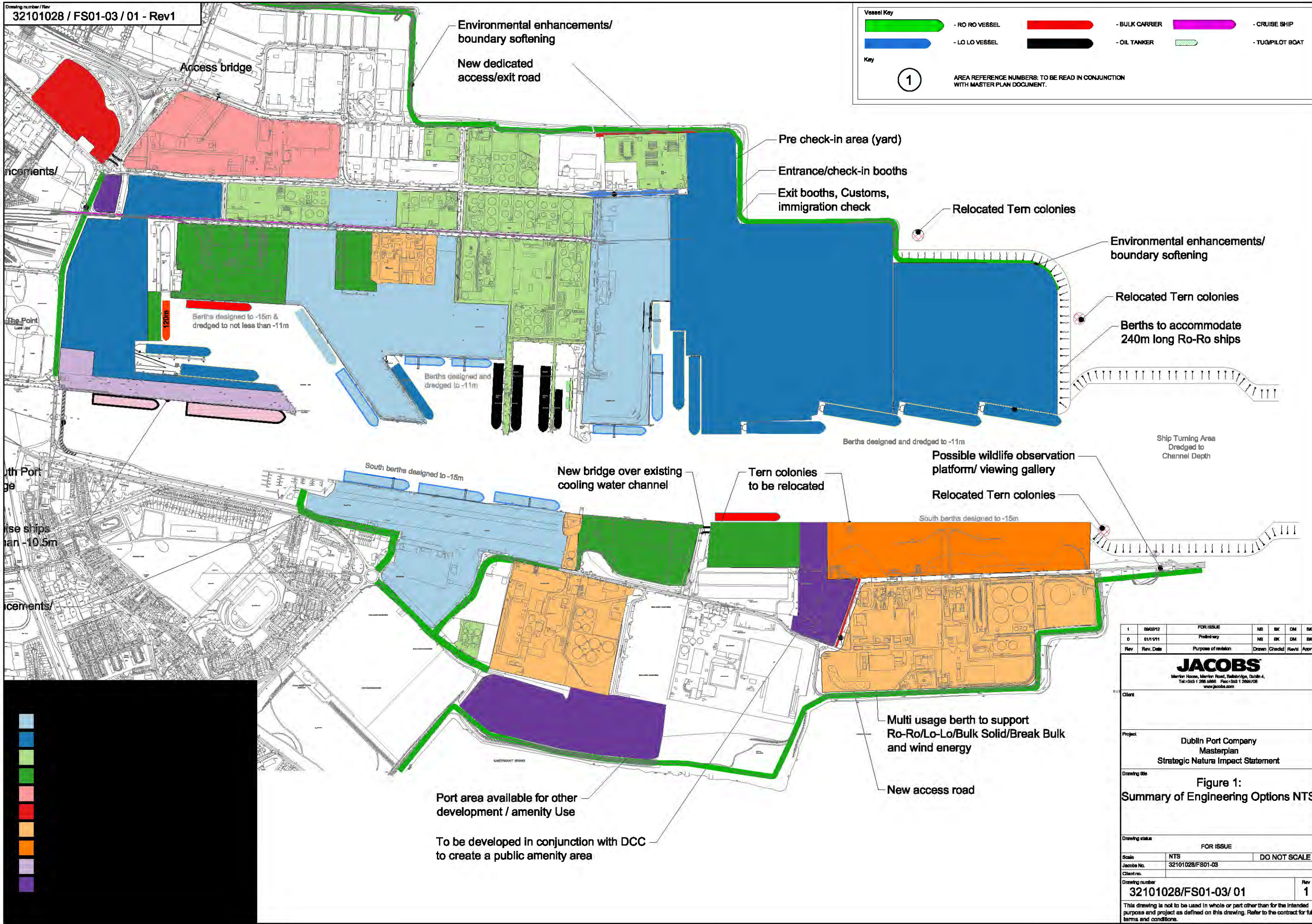
Figures

Vessel Key

	- RO RO VESSEL		- BULK CARRIER		- CRUISE SHIP
	- LO LO VESSEL		- OIL TANKER		- TUG/PILOT BOAT

Key

① AREA REFERENCE NUMBERS: TO BE READ IN CONJUNCTION WITH MASTER PLAN DOCUMENT.



1	09/02/12	FOR ISSUE	NS	BK	DM	BK
0	01/11/11	Preliminary	NS	BK	DM	BK
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd

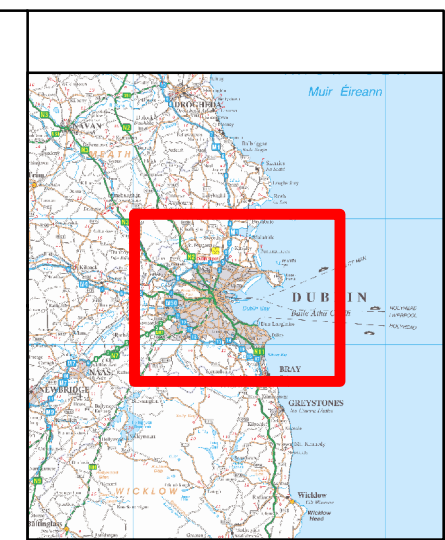
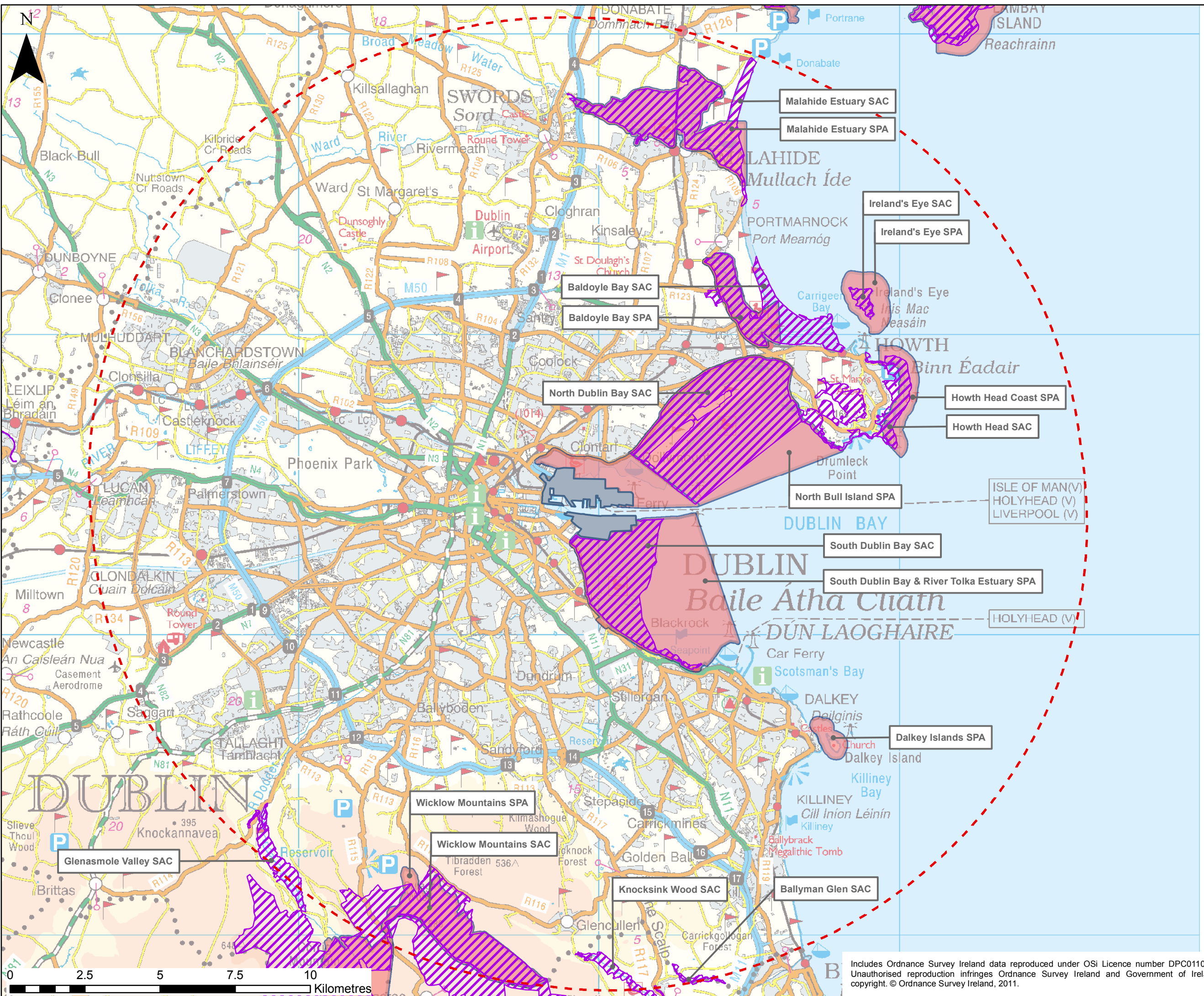
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 Tel: +353 1 286 8686 Fax: +353 1 286 8708
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Client: _____

Project: **Dublin Port Company Masterplan Strategic Natura Impact Statement**

Drawing title: **Figure 1: Summary of Engineering Options NTS**

Drawing status: FOR ISSUE		
Scale:	NTS	DO NOT SCALE
Jacobs No.:	32101028/FS01-03	
Client no.:	_____	
Drawing number:	32101028/FS01-03/ 01	Rev: 1
This drawing is not to be used in whole or part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.		



- Legend**
- 15km from Dublin Port
 - Dublin Port
 - Special Area of Conservation (SAC)
 - Special Protection Area (SPA)



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Appendix D Consultation Feedback on the SEA

Environmental Protection Agency	DPC Response
Masterplan Comments	
The inclusion of Appendix I SEA Impact Assessment Summary is noted. To further strengthen the Plan, the full suite of mitigation measures recommended in the SEA Environmental Report (ER) should be reflected as clear specific commitments in the main text of final Plan.	Additional confirmation has been added to the revised MP which confirms the commitments to implementing the necessary mitigation measures from the SEA ER.
The commitment to create/implement "shorter term (rolling 5 year) strategic plans from which individual projects will be brought forward, planned and developed", as set out in Section 11 Monitoring and Review of the Masterplan is noted and welcomed. The recommendations and commitments included in the Plan and SEA/AA should be fully incorporated and reflected in these strategic plans. The requirements of the SEA, EIA, Habitats and Floods Directives should be fully integrated in the development of these strategic plans. This is of particular relevance in the context of further assessment of alternatives for the proposed reclamation options as referred to in Figure 7 of the Plan.	A statement has been added to this effect in the MP.
In order to ensure water quality is adequately protected, the Eastern River Basin District Management Plan and associated Programme of Measures should be integrated as appropriate in the Plan by means of a specific Plan Objective.	The MP's first environmental objective has been revised to account for the protection of water resources.
It should also be ensured that appropriate management practices are implemented for refuelling and maintenance operations within the Port to minimise potential for spillages/accidents.	A statement to this effect has been added to the SEA ER. The MP has committed to implementing the measures outlined in the SEA ER.
It should be ensured that water quality (riverine, coastal, marine and groundwater) is protected in implementing the Plan in line with the requirements of the Water Framework Directive. Clarification should be given to whether a programme / schedule for dredging is proposed for the Plan area. In addition, potential risk associated with excavation of contaminated sediment should be taken into account in the preparation and subsequent implementation of the Plan.	The SEA + sNIS mitigation both make reference to the proposed Dredging Mitigation Strategy (DMS). A reference has been included in the MP to the DMS and that all dredging will be undertaken in accordance with licensing/legal requirements i.e The Foreshore and Dumping at Sea Act (Amendment) 2009
Your attention is brought to the Designated Shellfish Waters to the North of the Plan area (Malahide, Balbriggan & Skerries) and associated Pollution Reduction Programme/Characterisation Reports. It should be ensured that in implementing the Plan, these shellfish waters are protected from activities associated with the Port and its on-going operation and development.	Reference to this legislation + PRP reports has been added to the EU Directives and Policy Section of the MP.
With regard to flood risk, consideration should be given to including a specific Plan Objective to integrate the relevant aspects of the Eastern, Dodder and Fingal East Meath CFRAMS into the Plan. Clarification should also be given, on the status of flood risk assessment for the Plan. The findings of this assessment should be reflected in the preferred options for the longterm development of the Port.	The first environmental objective of the MP has been revised to make reference to protection against flood risk.
In terms of infrastructure provision, in implementing the Plan consideration should be given to the requirement under The Waste Water Discharge (Authorisation) Regulations for all wastewater discharges, including storm water discharges which come within the scope of these Regulations to be licensed (for agglomerations over 500pe) or certified (for agglomeration below 500p.e).	A statement to this effect has been added to the SEA ER. The MP has committed to implementing the measures outlined in the SEA ER.
You are referred to Dublin City Biodiversity Plan, which should be referred to and incorporated into the Plan, to ensure that biodiversity outside of the Plan area is taken into account in association with Dublin City Council.	A reference to this Plan has been added to the MP. It is noted that the Biodiversity Plan is included in the SEA ER Review of Plans and Programmes.
A clear commitment should be given which requires Appropriate Assessment Screening for all Plans/programmes arising out of implementation of the Plan with potential to impact on adjacent Natura 2000 sites in consultation with the NPWS.	This has been further clarified in the revised MP.

Environmental Protection Agency	DPC Response
The Plan should promote the implementation of measures to control and manage relevant alien/invasive species and noxious weeds within the Plan area according to best practice (as per the new Birds and Habitats	Comment noted and a statement has been added to this effect in the SEA ER.
<p>Landscape Character Assessment: Consideration should also be given to promoting the requirement for an appropriate “Visual Impact Assessment” for proposed development with potential to impact adversely on significant landscape features (river/coastal/estuarine) within and adjacent to the Plan area.</p> <p>The Plan should promote the application of standard impact assessment methodology for all such development.</p>	The revised MP identifies that environmental assessments and measures to abate visual impacts will be undertaken as required in co-operation with residents and port users.
<p>Infrastructure planning</p> <p>The Plan should promote the provision of adequate and appropriate infrastructure, including, wastewater treatment, water supply, surface and storm water drainage, transport, waste management etc. on a planned and phased basis within the Plan area.</p>	A statement has been added to this effect in the MP.
<p>Waste Management</p> <p>It should be ensured that dredging activities associated with the operation of the port are undertaken in accordance with the relevant environmental legislation. Your attention is brought to the requirements of ‘The Foreshore and Dumping at Sea (Amendment) Act 2009’ which should be referenced and integrated into the Plan, in relation to capital and maintenance dredging activities associated with the on-going development and maintenance of the Port.</p>	A statement has been added to this effect in the MP.
<p>EIA: The Plan should highlight that under the EIA and Planning and Development Regulations certain projects that may arise during the implementation of the Plan may require an Environmental Impact Assessment.</p>	There is reference made to this directive in the MP and that future projects/developments will need EIA's.
<p>Obligations With Respect To National Plans and Policies and EU Environmental Legislation</p> <p>The Plan should refer to Dublin Port Company’s responsibilities and obligations in accordance with all national and EU environmental legislation. It is a matter for Dublin Port Company to ensure that, when undertaking and fulfilling their statutory responsibilities; they are at all times compliant with the requirements of national and EU environmental legislation.</p>	<p>DPC are committed to operating in accordance with all legislation.</p> <p>A comprehensive review of plans/programmes and legislation was undertaken in conjunction with the MP as part of the SEA and is presented in the ER.</p>
<p>Executive Summary</p> <p>It is noted in page 6 that the Plan will largely have “negligible” effects.</p> <p>The potential impact on Natura 2000 sites should be reflected in the Plan.</p> <p>Consideration should also be given to including a reference to the relevant guidance including the European Sea Port Organisation (ESPO) Codes of Practice specifically, to highlight the overall framework in which the Plan area is being developed.</p>	<p>The MP refers on a number of occasions of the requirement for implementation of the Appropriate Assessment process with regard to future developments - giving appropriate regard to the Natura 2000 sites.</p> <p>Reference is also made to the sNIS which has been developed in conjunction with the MP.</p> <p>A statement relating to the ESPO Codes of Practice has been added to the MP.</p>
<p>Chapter 2 – The Rationale for the Masterplan</p> <p>Consideration should be given to amending the first bullet point to refer to “Plan for future sustainable growth and changes in facilitating seaborne trade...”</p>	Comment noted and text amended
<p>Under ‘Environment and Heritage’ the Plan should also include objectives to protect water resources and to fully implement SEA and AA recommendations for the protection of natural resources.</p>	Comment noted and text amended
<p>The inclusion of Appendix I SEA Impact Assessment Summary is noted. To further strengthen the Plan, the mitigation measures recommended in the SEA Environmental Report (ER) should be reflected as clear specific commitments in the main text of final Plan.</p>	Additional confirmation has been added to the revised MP which confirms the commitment to implementing the necessary mitigation measures from the SEA ER.

Environmental Protection Agency	DPC Response
<p>Chapter 11 – Monitoring and Review of the Masterplan Under 'Data to be Collected Annually' and 'Data to be Collected on a Five Year Basis' other relevant indicators identified in SEA/AA should be included. The commitment to publishing five year environmental monitoring reports is noted and welcomed. In addition, the commitment to take appropriate corrective action if adverse impacts are identified is noted. SEA related monitoring should be linked with plan implementation review and associated monitoring.</p>	<p>Reference has been added to the MP to link the monitoring requirements of the SEA ER with this section of the MP.</p>
<p>The proposed periodic review (no later than ten years) of the Masterplan should be undertaken in accordance with the requirements of the SEA and Habitats Directives.</p>	<p>Comment noted and text amended</p>
<p>Masterplan Objectives Consideration should also be given to amending Port Function Objective PF1 as follows “Ensure the safe operation and sustainable development of the port and its approach...” Additionally, Port Function Objectives PF4 and PF7 should be refined to include the following “...subject to environmental/licensing requirements”. The Masterplan objectives should take into account protection of water resources, fisheries, designated and non-designated sites under 'Environment and Heritage'. Consideration should be given to amending EH1 to also refer to non-designated sites, as well as including additional strategic objectives to protect natural resources. Future Review Objective FR1, should be amended to highlight that a commitment is given to reviewing and monitoring the Plan at regular intervals to assess how the Masterplan is achieving its objectives and targets as set out in the Plan and the SEA.</p>	<p>Comment noted and text amended</p>
<p>The Masterplan should consider the inclusion of an objective to ensure that no significant noise increase occurs (as per paragraph 7.6.5).</p>	<p>It is considered that the SEA ER has identified suitable mitigation measures with regard to the management of noise issues. DPC are committed to the implementation of the recommendations of the SEA ER.</p>
<p>In the context of strengthening the Plan, consideration should be given to moving the specific “Commitments” as provided in each Table into the Plan, as they reflect specific recommendations which should be catered for in the Plan</p>	<p>Additional confirmation has been added to the revised MP which confirms the commitment to implementing the necessary mitigation measures from the SEA ER.</p>
<p>The Plan should include a clear commitment to implement the proposed mitigation measures set out in Chapter 20. Summary of Mitigation and Monitoring Proposals</p>	
<p>The actions listed under the “Mitigation Recommended” heading for each “Feature or Performance Indicator/Area” given in Appendix B should be reflected where relevant in the Plan.</p>	

Environmental Protection Agency	DPC Response
SEA Environmental Report Comments	DPC Response
Introduction	DPC Response
<p>The Agency notes the extensive consideration of alternatives / development options; however it should be ensured that the assessment of each proposed alternative is subject to a consistent level of assessment. Given the large number of alternatives under consideration, there is a need to have a clear, standardised and systematic integrated assessment of all options.</p>	<p>A flow diagram has been drawn up within the 'Alternatives' section to illustrate the approach taken to the assessment. Text has also been added at various points within Chapter 7, and the combination shows how DPC's approach is both appropriate to this particular Masterplan, and also systematic. We have also mentioned alternatives which were not considered "reasonable" and which therefore did not require assessment under the SEA Regulations.</p>
<p>The lack of planning detail for some alternatives should be reviewed</p>	<p>We have considered the level of detail extensively. It is considered that it is not always appropriate to provide a consistent level of detail across all of the alternatives i.e. when some alternatives are considered as 'concepts', these can be ruled out before designing any specifics for that alternative.</p>
<p>The need to examine issues further at EIA level should be more clearly stated throughout the ER</p>	<p>We have reviewed our existing references to the EIA level, and a section has been added to Chapter 20, (Section 20.3) to specify what issues should be examined further at EIA level.</p>
<p>It should be clarified, whether flood risk assessment has been carried out for the Plan, in accordance with the Flood Risk Management Guidelines (DoEHLG/OPW, 2009), and if so, its current status should be clarified. The findings of any FRA undertaken should inform the appraisal of alternatives and should be reflected in the Plan.</p>	<p>The FRA is not undertaken at this stage. This has been clarified in Section 9.2.7 of the revised Environmental Report.</p>
<p>The SEA ER notes a number of data gaps throughout the document for some but not all of the environmental receptors (e.g. flood risk, management plans, etc.). There would be merits in incorporating a specific section on data gaps (or structuring the description of each environmental receptor in such a way to include a clear sub-section on data gaps).</p>	<p>Where data gaps have been identified, a sub-section has been added to the topics detailed within Chapter 6 to make it more clear.</p>
Non Technical Summary	DPC Response
<p>The Non-Technical Summary (NTS) should be expanded / completed to provide a more descriptive and comprehensive outline of the environmental baseline, assessment findings and main impacts, mitigation measures, indicators, targets and monitoring arrangements. A more detailed overview of the existing environment should be provided, including any existing environmental problems and the likely evolution of the environment in the absence of the Plan.</p>	<p>The NTS has been amended to provide a more detailed description of baseline information, assessment findings, mitigation measures and the monitoring programme.</p>

Environmental Protection Agency	DPC Response
<p>Maps should be included to summarise/highlight what environmental vulnerabilities /sensitivities exist within and adjacent to the Plan area. The inclusion of a cumulative environmental sensitivity map, outlining environmental vulnerabilities such as waterquality/biodiversity/flood risk/noise etc. would be useful in this regard. This would highlight those areas where specific measures need to be afforded significant protection in implementing the Plan, and any plans arising out of its implementation.</p>	<p>Comment noted. The existing maps are considered suitable, and have been made available for download separately with the NTS.</p>
<p>It should also be ensured that the dredging activities associated with the operation of the Harbour are appropriately managed in line with the relevant environmental legislation and adjacent environmental sensitivities.</p>	<p>A Dredging Mitigation Strategy is included as a commitment in the Environmental Report. Please refer to Sections 8.2.8 - 10.2.7 for more information.</p>
<p>It should be ensured that the alternative development scenarios have been assessed against the Strategic Environmental Objectives within the Environmental Report, rather than the Plan Objectives, in the selection of preferred alternative development scenarios. This should be clarified in the Plan.</p>	<p>Within the NTS, the description of alternatives and their assessment has been clarified.</p>
<p>There would be merits in including an overview of the mitigation and monitoring measures proposed. The commitments provided in Chapter 20: Summary of Mitigation and Monitoring Proposals would prove useful to highlight environmental concerns and how the Plan proposes to mitigate issues identified.</p>	<p>An overview of the mitigation and monitoring measures proposed has been added to the NTS.</p>
<p>Consideration should also be given as to whether any material assets have been identified (Schedule 2(f) of S.I. No 435 of 2004), such as dredging materials. Additionally, any difficulties encountered or data gaps should also be acknowledged in accordance with the SEA Regulations.</p>	<p>Effects of dredging including materials has been considered in all relevant topics. A summary of data gaps identified through Chapter 6 has been included in the NTS.</p>
<p>Chapter 2 – SEA Approach and Methodology</p>	
<p>There would be merits in including in Paragraph 2.5.7, a reference to the assessment of other Plans and Programmes, as detailed in Appendix A.</p>	<p>Paragraph 2.5.7 has been amended to reference the assessment of other Plans and Programmes as detailed in Appendix A.</p>
<p>Chapter 3 - Consultation</p>	
<p>The biodiversity SEA objective in Paragraph 4.5.2 page 27 should reflect the feedback from the NPWS regarding wider biodiversity interests. (Refer to the Departments Comments included below)</p>	<p>The biodiversity SEA Objective covers the feedback from the NPWS including for protection of all levels of biodiversity. The assessment of options has taken into consideration all aspects of biodiversity including wider biodiversity interests. However, the objective has not been amended further.</p>

Environmental Protection Agency	DPC Response
Chapter 4 – The Key Objectives of the Dublin Port Masterplan	
There would be merits in adopting a consistent approach to the reference to the types of objectives within the document e.g. strategic, Plan and SEA.	We have checked for consistency throughout the report and are content that referencing of objectives is consistent throughout.
It should also be ensured that the SEA Objectives are fully reflected in the Plan objectives as appropriate, to highlight the integration between the SEA and the Plan.	The role of SEA objectives is to identify the strengths and weaknesses of the plan objectives. If identified early, these weaknesses can be addressed in a variety of ways, and not necessarily by amending the plan objectives. However, the SEA compatibility appraisal has led to certain improvements in the Masterplan objectives.
Where conflicts have been identified between Plan and SEA objectives, these should be resolved where possible prior to finalising the Plan.	The purpose of the compatibility assessment is to identify areas of compatibility / incompatibility and suggest changes where appropriate. Conflict may still remain in some areas but other plan objectives can counteract the incompatibility.

Environmental Protection Agency	DPC Response
<p>Section 4.4.2 refers to "Dublin Port Company studies" which show that additional lands will be required for the development of the Port. Consideration should be given to documenting and taking into account the key findings of these studies in the Environmental Report. This should include a description of all development alternatives including development in the absence of land reclamation. The justification for choosing the land reclamation option as the preferred alternative should also be included and taking into account the SEA Objectives set out.</p>	<p>The terms "studies" refers to the projected growth estimate that DPC have detailed in their Masterplan which will require the port to handle 60m tonnes by 2040. On the basis of this estimate, the port estate will require additional area to support the increase in trade through the port. The paragraph has been amended to clarify this comment.</p>
<p>Consideration should be given in paragraph 4.4.3 to whether the "options" referred to, reflect development alternatives as already assessed within the SEA. If not, they should be subject to the same level of assessment to ensure the likely significant effects (including cumulative effects) of all options are carried out.</p>	<p>These options are those assessed in Chapter 8-18. Sentence re-worded to clarify.</p>
<p>Consideration should also be given to amending Port Function Objective PF1 as follows "Ensure the safe operation and sustainable development of the port and its approach..." Additionally, Port Function Objectives PF4 and PF7 should be refined to include the following "...subject to environmental/licensing requirements". The Masterplan objectives should take into account protection of water resources, fisheries, designated and non-designated sites under 'Environment and Heritage'. Consideration should be given to amending EH1 to also refer to non-designated sites, as well as including additional strategic objectives to protect natural resources. Future Review Objective FR1, should be amended to highlight that a commitment is given to reviewing and monitoring the Plan at regular intervals to assess how the Masterplan is achieving its objectives and targets as set out in the Plan and the SEA. Masterplan implementation review and monitoring should be linked to SEA related monitoring.</p>	<p>These amendments have been made to the MP.</p>
<p>For the SEA Objectives, consideration should be given to the development of an additional SEA Objective and associated Target and Indicator for assessing energy conservation.</p>	<p>An SEA objective for energy conservation has not been included as this has been considered under the climate change SEA objective.</p>
<p>Objectives EH1 to EH4 are included in the list of Plan Objectives, however the subsequent text (Paragraph 4.5.9) refers to objectives EH1 through EH6. This should be clarified.</p>	<p>Comment noted. This has been addressed in the revised ER.</p>
Chapter 5 – Review of Other Relevant Plans and Programmes	
<p>There would be merits in summarising the key significant Plans/Programmes as described in Appendix A: Review of Relevant Plans and Programmes - Tables in the main body of the text.</p>	<p>A review of Plans and Programmes is detailed in Chapter 5 and includes the key findings of the review. We consider that by leaving the table in the Appendix, we make the main body of the Environmental Report more concise and therefore more reader-friendly.</p>
<p>You are referred to Irelands Offshore Renewable Energy Development Plan, which highlights the recommended renewable energy technologies for the East and South East areas. The Plan (or future reviews thereof) should consider how these may be integrated into port related activities and taking into account environmental sensitivities.</p>	<p>This Plan is reviewed in Appendix A of the Environmental Report.</p>
<p>The Plan should seek to promote the co-ordination/communication of marine movements with other users of the port, such as fishing/trawling, leisure, communications infrastructure and dredging (including construction / maintenance activities) with potential to impact on marine based activities.</p>	<p>An addition has been made to the Transport Chapter (Section 17.2.6) to reflect the comment.</p>

Environmental Protection Agency	DPC Response
Chapter 7 – Characterisation of the Existing Environment of Dublin Port	
Consideration should be given to moving this section before the Chapter on the selection of the preferred alternatives, to provide the overview of environmental baseline available prior to the selection process being discussed. There would also be merits in providing a larger scale map(s) highlighting environmental vulnerabilities adjacent to the Plan area which have been considered in the SEA.	Chapter 7 has been moved to Chapter 6 with the alternatives chapter following on as Chapter 7.
The likely evolution of each of the environmental factors (e.g. biodiversity, water, air etc.) in the absence of the Plan should also be discussed under the Future Trends sections of this chapter, or in each of the following chapters referring to the environmental factors	A future trends section is presented in this chapter for each topic.
In addition, the use of a table to summarise the assessment of environmental effects as set out in the SEA Directive and Regulations, i.e. “secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary, positive and negative effects” should be considered.	Additional clarity on how each type of effect has been dealt with has been added to the Environmental Report. Please refer to Section 2. A summary of the effects of the Masterplan is presented in Table 21.1, with cumulative effects taken into account but described in Chapter 19.
The Dodder Water Management Unit should also be included in Section 7.4.6 and should be taken into account in the SEA and Masterplan. The status of the CFRAMS studies currently underway should be referred to, as these will inform the evolution of the Plan (and future revisions) when relevant flood risk data becomes available during the lifetime of the Plan.	This has been included (see Section 6.3.12 and 6.4.6 of Environmental Report).
With regard to Section 7.6 Noise and Vibration, there would be merits in including a noise sensitivity map for the area, using the existing noise data available. This would also allow for the assessment of and provision of mitigation measures in sensitive locations and for different receptors. It is noted and acknowledged that Noise Data from Dublin City Council is currently being taken into account where available.	Sensitive receptors are identified in the noise figure provided for the Environmental Report.
A more detailed noise assessment should be undertaken prior to development / expansion / intensification of port related activities which may arise in implementing the Plan.	This commitment is provided in Chapter 12 (noise).
Consideration should be given in Section 7.9 Landscape to including a map highlighting areas of particular landscape character, including both seascape and coastscape, to be utilised in determining whether visual impact assessment may be required for certain activities.	Comment noted. However, a map is not included at this stage. Proportionate landscape and visual assessments will be undertaken for each future development proposal as relevant and which would be likely supply such maps.
Consideration should be given in Section 7.12 - Waste Management to referring to the requirements of the Environmental Liabilities Directive to be incorporated into Port operation and on-going development activities.	A section has been added to Chapter 6.12 (Waste Management) referring to the requirements of the Directive.
Chapter 6 – Assessment and Selection of Alternatives	
Consideration should be given to including a summary of the development alternatives prior to identifying a preferred alternative evaluated as referred to in Paragraph 6.1.7.	The addition of an alternatives diagram and additional text provide greater clarity on the alternatives, and there is already suitably detailed descriptions at appropriate places in the report.
The methodology applied in the evaluation of alternatives should be clearly described. An overall integrated assessment of all alternatives considered for the on-going development of the Port should be provided in this section.	A section has been added to Chapter 2 (section 2.6) to clarify the methodology used for the alternatives assessment.

Environmental Protection Agency	DPC Response
It should also be clarified how the Appropriate Assessment and Flood Risk Assessment have influenced the selection of preferred alternative development scenarios and land uses.	An FRA has not been conducted at this stage. All the alternatives are part and parcel of a package of capacity-increasing measures which will potentially require reclamation / infill to meet the Masterplan objectives - The sNIS addresses the potential future requirements with regard to the Appropriate Assessment process for the preferred engineering options.
There would be merits in including maps of the Bulk Liquid Berthing and Handling options, the South Berth Handling options and the Dublin Gateway Extension options, and for the Central Area – North Side and Eastern Area – North Side. Figure 6 illustrates the preferred option for the North West side of the port, the inclusion of relevant additional maps of the remaining areas of the port would illustrate how the preferred options in Figure 2 Summary of Engineering Options were decided upon.	Maps showing the alternatives which are difficult to visualise have been provided.
It is noted that under paragraph 6.6.1 that the South Berth alternative was abandoned. The reason for rejecting this alternative should be clarified.	More detail has been added to this section. It was abandoned as being inappropriate prior to environmental assessment being completed. However the environmental assessment concurs with its abandonment.
Chapter 8 – Biodiversity – Flora and Fauna	
Clear objectives should be included in the Plan to ensure protection of the rare and protected species noted in this section. These should be cross referenced against the Dublin City Biodiversity Plan to ensure compatibility and recognition is given to wider biodiversity outside the Plan area. Similarly, the potential to effect non-designated sites and species (through direct disturbance/removal or water contamination) should be examined in more detail.	The biodiversity SEA Objective included for protection of all levels of biodiversity. The assessment of options has taken into consideration all aspects of biodiversity including wider biodiversity interests. It is therefore considered that no new objectives are required.
In terms of proposed construction / operation activities associated with implementing the Plan, it should be ensured that these activities take into account breeding activities, salmonid spawning etc. to ensure development / operations adjacent to the most sensitive locations are controlled, in order to minimise disturbance. This should also be taken into account in the proposed relocation of the “Dolphins” mooring structures and associated tern colonies.	Details have been included within Section 8.2.14 and take into account the proposed relocation of the 'Dolphins' mooring structures and associated tern colonies.
The second indicator for the Biodiversity SEA Objective (“protect and enhance the biodiversity levels in general...”) in Table 8.1 should be rephrased to also take into account wider biodiversity aspects.	The biodiversity Objective has been altered to take into account wider biodiversity aspects (see p92).
For proposed mitigation measures, the commitment in Section 8.2.14 should be strengthened as follows: “DPC shall consider working work with relevant statutory and non-statutory stakeholders to create an Integrated Environmental Management Plan for the Port area and environs”	Comment noted. Section 8.2.14 has been altered to make stronger the commitment to an Integrated Environmental Management Plan.
Chapter 9 – Flood Risk	
The indicator should reflect the need to consider the “number of areas reporting flooding incidents” (rather than increase in the number as this reflects a trend not an indicator). The target should also include “No additional flood risk”.	The Flood Risk indicator and associated target has been modified as per comment.

Environmental Protection Agency	DPC Response
Chapter 10 – Water - Surface Water	
Consideration should be given to relevant EPA Q-values as an additional indicator to WFD risk status in Table 10.1.	Comment noted. An additional indicator has been added to the WFD risk status in Table 10.1 to include relevant EPA Q-values.
There would be merits in strengthening the commitment to prepare an Integrated Environmental Management Plan for the Plan area The scope of this plan should include provisions to ensure the on-going protection of water quality, habitats (in particular Natura 2000 sites), and associated species including fisheries from the on-going operation and future development of Dublin Port.	The commitment to prepare an Integrated Environmental Management Plan has been reinforced in the Environmental Report.
Chapter 11 – Water - Groundwater	
Consideration should be given to amending Table 11.1 as for Table 10.1 mentioned above.	Comment noted. An additional indicator has been added to the WFD risk status in Table 11.1 to include relevant EPA Q-values.
The Plan should provide a commitment for coordinated integrated site investigation to determine the nature and extent of any ground contamination within the Plan area. Mitigation proposed includes a commitment to identify "areas and sites historically contaminated with free phase product..." An objective should be included in the Masterplan to prepare and implement an integrated remediation programme for any contaminated areas identified.	This action has been undertaken and can be found within Section 11.2.5.
Section 11.2.4 - Mitigation Proposed, consideration should be given to amending as follows "The employment of It will be a requirement to carry out good construction and operational site management practices..." This could be included in an Environmental Management System linked with any construction/development/maintenance works.	Section 11.2.4 has been amended as per the comment.
Chapter 12 Noise and Vibration	
The indicator for noise should be "number of complaints (...)" (rather than increase in the number as this reflects a trend not an indicator).	The noise indicator has been amended to 'number of comments...'
The Masterplan should consider the inclusion of an objective to ensure that no significant noise increase occurs (as per paragraph 7.6.5).	The SEA ER has identified mitigation measures with regard to the management of noise issues and DPC are committed to the implementation of the recommendations of the SEA ER.
Chapter 13 – Air Quality and Climate	
Mitigation measures in Section 13.2.7 could be strengthened by rephrasing as follows: "Routes can will be regularly damped down... appropriate speed limits can will be established...wheel washing facilities can will be installed..."	The mitigation measures in Section 13.2.7 have been altered in accordance with the comment.

Environmental Protection Agency	DPC Response
Chapter 17 – Transport	
<p>There would be merits in including a map showing the key transport networks existing within and adjacent to the Plan area which will influence / be influenced by the Plan.</p>	<p>Comment noted.</p> <p>It is considered that this information is explained in the baseline section (6.11), as well as Chapter 16.</p> <p>The Masterplan has committed to the development of a Transport Management Plan in conjunction with relevant authorities which will address the key transport networks.</p>
Chapter 18 – Waste Management	
<p>The indicator in Table 18.1 should be rephrased as follows: “Increases in the level quantity of waste being directed to landfill...”</p>	<p>The indicator in Table 18.1 has been rephrased in accordance with the comment made.</p>
Chapter 20 – Summary of Mitigation and Monitoring Proposals	
<p>The abbreviations in the Stage column in each mitigation table should be defined.</p>	<p>Comment noted. The abbreviations have been defined in each mitigation table.</p>
<p>In the context of strengthening the Plan, consideration should be given to moving the specific “Commitments” as provided in each Table into the Plan, as they reflect specific recommendations which should be catered for in the Plan</p>	<p>The Masterplan has been amended to make a stronger connection to the mitigation proposed.</p>
<p>The Plan should include a clear commitment to implement the proposed mitigation measures set out in Chapter 20. Summary of Mitigation and Monitoring Proposals</p>	<p>The Masterplan states that the mitigation measures identified in both the SEA and sNIS will be reviewed and implemented in the context of future development proposals. It also lists these measures within the Masterplan itself.</p>
<p>In the development of the monitoring programme, consideration should be given to the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The addition of appropriate corrective action thresholds for unauthorised development, illegal waste activity and water pollution incidents not involving oil spills. <input type="checkbox"/> The inclusion of monitoring frequencies. <input type="checkbox"/> Monitoring of both positive and negative effects, where they occur. <input type="checkbox"/> Inclusion of the on-going review of environmental targets and indicators in the monitoring programme. Responsibility for this role should be clearly defined. 	<p>Comment noted. The monitoring programme has been amended in light of this comment with two additional columns to Table 20.2 to include when and what remedial action should be undertaken. Text has also been added to detail monitoring of both positive and negative effects. The responsibility for the role of monitoring was already provided in the table.</p>

Environmental Protection Agency	DPC Response
The Monitoring Programme should be flexible to take account of the various stages of the Plan and should be able to deal with specific environmental issues as they arise. The programme must be able to deal with the possibility of cumulative effects.	Comment noted. It is considered that the monitoring programme reflects this comment.
The monitoring programme should set out the various sources of data, and the actual departments responsible for collecting, collating and analysing the data should be identified as soon as possible after the Plan has been adopted. The Monitoring Programme should include information on how the monitoring proposed will allow unforeseen adverse effects to be identified and responded to as appropriate. Who has responsibility for this? What will trigger appropriate remedial action?	Comment noted. See above comments for response.
Chapter 22 – Conclusion	
Table 21.1 has some entries, for instance moderate/long term positive effect on biodiversity flora and fauna. These effects should reflect the findings of the AA.	A summary of the findings of the Natura Statement has been added within Chapter 22.
Table 21.2 should reflect all of the mitigation measures identified in Tables 20.1 to 20.11 to ensure clarity and consistency and reflect the key findings of the SEA to be included in the Plan.	Comment noted. The consistency between Tables 20.1 to 20.11 and Table 21.2 has been checked and text has been amended / added to Table 21.2 where appropriate.
Appendix A- Review of Relevant Plans and Programmes - Tables	
The list is very comprehensive and contains a good summary of the relevance of each plan/programme and legislative instrument.	Comment noted and appreciated.
Appendix B – Assessment Tables	
The actions listed under the “Mitigation Recommended” heading for each “Feature or Performance Indicator/Area” given in Appendix B should be reflected where relevant in the Plan.	The Masterplan states that the mitigation measures identified in both the SEA and sNIS will be reviewed and implemented in the context of future development proposals. It also lists these measures within the Masterplan itself.

Environmental Protection Agency	DPC Response
<p>Department of Arts Heritage and Gaeltacht</p> <p>With regard to the SEA we had requested that the Biodiversity objectives in the SEA cover habitats and species both within and outside of designated sites as below:</p> <ul style="list-style-type: none"> • Natura 2000 sites, i.e. Special Areas of Conservation (SAC) designated under the EC Habitats Directive (Council Directive 92/42/EEC) and Special Protection Areas designated under the EC Birds Directive (Council Directive 79/409 EEC) • Other designated sites, or sites proposed for designation, such as Natural Heritage Areas, Nature Reserves and Refuges for Fauna or Flora, designated under the Wildlife Acts of 1976 and 2000 • Habitats listed on annex I of the Habitats Directive • Species listed on Annexes II and IV of the Habitats Directive • Habitats important for birds • Birds listed on Annex I of the EC Birds Directive • Species protected under the Wildlife Acts including protected flora • Habitats that can be considered to be corridors or stepping stones for the purpose of article 10 of the Habitats Directive • Red data book species • and biodiversity in general. <p>Therefore the Department recommended that there should be more than just the one SEABiodiversity Objective which was proposed on page 60 of the draft S 149). Without specific mention of protected species and biodiversity outside of designated sites the Objective may not be comprehensive enough.</p>	<p>The text of the Biodiversity Objective has been revised in all the locations of the ER now - "Protect and enhance the biodiversity levels in general with particular regard for the nationally and internationally protected sites in vicinity of the port."</p> <p>It is not felt that any additional objectives are required as the assessment has covered all aspects of the comment.</p>
<p>These include species such as Otters, marine mammals, salmon, lamprey species and birds protected under the Wildlife Acts and/or listed on annex IV of the Habitats Directive. During our site visit we had discussed seals, salmon and the possibility of creating black guillemot nest sites.</p>	<p>Comment noted. The assessment has taken into consideration the potential for effects on these species.</p>
<p>Table 8.1 concentrates solely on the designated sites. The bottom part of Table 8.2 on page 93 of the SEA draft Environmental Report is confusing as the Performance Indicator refers to non-designated terrestrial flora and fauna but the Rationale for Categorisation states it may include protected species such as bats and breeding birds. We recommend therefore that section 8 should be amended to address the concerns above.</p>	<p>Noted and the text has been clarified.</p>
<p>We note that table 7.4 has omitted grey plover from the Special Conservation Interests for the SPA.</p>	<p>Grey plover has been added to Table 7.4 (now Table 6.4)</p>
<p>Suggests the Architectural Conservation Areas are referred to in the Masterplan and not just the SEA.</p>	<p>The Masterplan has been updated to include stronger links back to the SEA and conservation areas are referred to.</p>
<p>The eastern bypass should be considered in the sNIS in addition to the SEA</p>	<p>The Dublin Eastern Bypass has been considered in the updated sNIS</p>
<p>Lack of discussion in the sNIS of the new bridge across the Liffey as discussed during consultation meetings</p>	<p>The proposed interconnector bridge has been considered in the updated sNIS</p>

Environmental Protection Agency	DPC Response
<p>NIS (A) for measurement H1 and H2 the term "mitigation" should be replaced with "compensation".</p>	<p>No actual adverse effects on the Natura 2000 sites have been determined with the engineering options still being at the Masterplan stage. It is not confirmed at this stage which engineering options will be developed.</p> <p>DPC are committed to undertaking Appropriate Assessments for individual projects which will determine whether adverse effects are predicted (under Article 6(3)).</p> <p>Article 6(4) discusses alternative solutions, the test of "imperative reasons of overriding public interest" (IROPI) and compensatory measures which is the next stage.</p> <p>Since we haven't discussed these stages including development of IROPI, as adverse effects have not been determined, it is considered that using the term compensation could lead to a misinterpretation of whether adverse impacts have been identified at this stage of the process.</p>
<p>Section 7.4.5 on re-designation of existing habitat needs clarification.</p>	<p>This has been clarified in the updated sNIS</p>
<p>MP (A) recommendation to include the Bird Directive page 9 under point 1 (B) Page 10 SPA name is incorrect.</p>	<p>Amendments have been made.</p>