

Dublin Port Company

Dublin Port Masterplan

Strategic Environmental Assessment

Environmental Report: Non-Technical Summary

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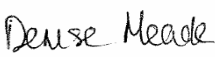


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Figure 1: Conservation Designation Areas in the vicinity of the port estate

Figure 2: Surface waterbodies in the vicinity of the port estate

Figure 3: Masterplan Engineering Options

Introduction

Purpose of this Report

The purpose of this document is to present a summary, in non-technical language, of the key findings of the Strategic Environmental Assessment (SEA) Environmental Report prepared to support the Dublin Port Masterplan.

Purpose and Objectives of the Masterplan

Dublin Port handles some 17,000 vessel movements each year varying in size from small coasters to large cruise vessels. The range of vessels includes Roll-on Roll-off (Ro-Ro) passenger ferries, Ro-Ro freight vessels, Lift On-Lift Off (Lo-Lo) container vessels, oil, gas and molasses tankers, 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.

In order to support vessel and cargo movements, Dublin Port also provides a variety of facilities. These include different types of berths, working areas and facilities adjacent and near to the berths and storage areas generally throughout the port estate.

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. With a resumption of growth in 2010, and in light of the long lead time for port development projects, Dublin Port Company (DPC) is assessing what growth is likely 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 over the next 30 years. Although between 1980 and 2010, Dublin port volumes grew from 7.3 million to 28.9 million tonnes without any increase in the port's land area, it is now acknowledged that there is a limit to how much more freight can be handled 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

Consequently, the Masterplan process was commissioned by DPC with the key objective of answering the question: *how will Dublin Port handle 60 million tonnes by 2040?*

SEA Methodology

Overall Approach

The SEA has been prepared to comply with 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).

The purpose of the SEA is to ensure that any likely significant environmental effects of the preferred Masterplan Options and their future development are identified. It is

considered that in developing the SEA in conjunction with the Masterplan, it will demonstrate how environmental considerations and sustainable development decisions have been integrated into the Masterplan development process.

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.

The SEA process was undertaken and comprises the following stages:

- **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 Draft Environmental Report** to evaluate the significant environmental effects of implementing the Masterplan;
- **Consultation** to facilitate the final review of the SEA Draft Environmental Report by relevant stakeholders, public, business, political and community groups;
- **Finalisation** of the **SEA Environmental Report** with subsequent adoption of the Dublin Port Masterplan;
- Development and publication of the **SEA Statement**, which documents how the SEA and consultation have been taken into account during the Masterplanning process; and
- **Monitoring** the plan and preparation of the Monitoring Report.

Assessment Method

The first step in the assessment process was a compatibility appraisal of the Masterplan Objectives against the SEA Objectives. This was undertaken to identify where objectives supported one another or where there was potential conflict. The aim of this was to inform the development of the Masterplan and where appropriate, refine objectives.

An assessment of the Masterplan alternatives for development was then conducted to consider strategic alternatives and provide an explanation as to the preferred options taken forward in the Masterplan. We considered both high-level alternatives such as whether or not to expand Port capacity at all, and engineering alternatives. The wide range of alternatives required both 'compatibility appraisal'-type methods (identifying conflicts and compatibilities) and detailed assessment of potential effects (including the degree of each effect).

Finally, an assessment of the preferred Masterplan engineering options was conducted and was assessed with regards to Port-wide effects locally and also potential regional and global effects. The degree of each effect has been predicted, and mitigation and monitoring recommended towards the purpose of improving the Masterplan and how it is implemented.

Masterplan and SEA Consultation

The Masterplan and SEA consultation process aims to enhance decision-making, provide a greater understanding of the local environment, understand key issues

including those of the local community and to increase understanding between the public and DPC to avoid unnecessary controversy and delays at later stages.

The Masterplan consultation process to date has included publication of the Masterplan Issues Paper; a media campaign; public information notices and local information briefing evenings; issue of the SEA Scoping Report with face to face meetings and workshops; and a seminar of the soft values in relation to Dublin Port as well as a Masterplan conference hosted by DPC.

The SEA Draft Environmental Report document was published in November 2011 for consultation, alongside the Draft Masterplan and Strategic Natura Impact Statement and provided an opportunity for stakeholder and local consultation and response.

The consultation responses received during this process have been taken into account in the finalisation of the Masterplan and SEA Environmental Report prior to subsequent adoption.

Review of Other Relevant Plans and Programmes

Requirement and Scope

It is a requirement of SEA that other strategies and plans (written by various bodies and organisations) with which the Masterplan interacts are identified. In addition, a review of local projects proposed in the proximity of the Port estate, which may affect the Masterplan proposals or result in cumulative effects if developed in combination with the Masterplan proposals was undertaken.

The purpose is to ensure that the Masterplan takes into account statutory requirements and other operations and actions which are planned or proposed to occur in the foreseeable future.

The context review was conducted as part of the scoping stage of the SEA and is reported in full within the Scoping Report with an update provided in Appendix A of the Environmental Report.

Summary of the Review

The key links and themes identified can be broadly summarised into the following categories:

- 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 that the SEA plays in providing 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 international 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.
- Achieving economic prosperity.

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

- Links from the port to Dublin City can be improved by public transport, walking and cycling and increased rail freight.
- Improves usage of the transport network to reduce the risk of congestion as well as improving accessibility to 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 effects 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.
- Recognise the importance of the surrounding communities and how the port can meet people's needs locally.

Characterisation of the Existing Environment of Dublin Port

This section presents a review of the environmental baseline conditions. Information on environmental aspects which were deemed relevant based on the current port activities and operations and also the currently proposed Masterplan Options are also included.

The existing baseline environment was addressed under the following headings:

Biodiversity

The Dublin Port estate is located in close vicinity to a number of designated EU and national conservation sites. The Port Estate lies within 5 km of two candidate Special Areas of Conservation (cSAC), two Special Protection Areas (SPAs) and five proposed Natural Heritage Areas (pNHAs) – two of which are also cSACs. These designations are shown on Figure 1.

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). The estuary also supports four migratory fish species, namely: Atlantic salmon, migratory trout, European eel and the river lamprey.

Flood Risk

A number of historic flood events have been recorded near to or in the vicinity of the Port Estate. 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.

It is generally considered that flood risk will continue to increase in line with predicted climate change.

Water – Surface Water

Dublin Port is situated on the River Liffey which flows into Dublin Bay. The navigation channel runs close to the South Wall and extends from the port area through the mouth of the Harbour. Figure 2 illustrates the waterbodies in the vicinity of the Port.

All water bodies of relevance are classed as heavily modified water bodies (HMWB) under the Water Framework Directive (WFD) (includes River Dodder, Liffey Estuary Lower, Tolka Estuary and Dublin Bay).

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 Eastern River Basin Management Plan (ERBMP) is expected to drive the required improvements for achievement of the required overall good status as directed by the WFD.

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

Water – Groundwater

Dublin Port is situated within the Dublin Urban Groundwater Body, which includes most of Dublin City. The groundwater is currently characterized as being of good status.

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.

Noise and Vibration

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.

The nearest noise sensitive receptors 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.

DPC manages noise mitigation measures through its Environmental Management System and in recent years has implemented a programme of noise monitoring to monitor the baseline conditions within Dublin Port.

Trends indicate that traffic is likely to continue to remain a dominant noise source within Dublin City.

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 mitigation measures such as screening, barriers and changes to building/site orientations to minimise the potential effects on surrounding receptors.

Air Quality and Climate

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

The baseline results indicate trends within the Port Estate are broadly comparable with those in Dublin City. These include Nitrogen Dioxide (NO₂) levels which are largely below the legislative limits, with some occasionally above. Sulphur Dioxide (SO₂) levels which are generally low, with no exceedances of the legislative limit, and Particulate Matter (PM₁₀) with levels generally within the legislative limits.

Climate change is generally considered to be one of the most significant environmental threats facing the world. Current emissions of greenhouse gases in Ireland are estimated to 7.9% lower than the level of emissions in 2008.

With regards future trends, SO₂ and PM₁₀ emissions are likely to continue to reduce. The Environmental Protection Agency (EPA) have identified that some monitoring stations in Dublin and also in Cork being increasingly affected by traffic levels. The EPA identifies that the continued increase in NO₂ emissions at these monitoring stations may lead to future breaches in the legislative limit.

Cultural Heritage – Archaeological and Architectural Heritage

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.

There are a number of historic shipwrecks that have been identified within the Dublin Bay area as well as several protected structures such as Bull Island and buildings on Pigeon House Road.

Additionally, several archaeological monuments are present within or in the vicinity of the Port estate including (amongst others) the Great South Wall.

In recent years, archaeological and architectural resources have been threatened from increasing urbanisation in Ireland as a whole. Without appropriate mitigation, activities/operations within Dublin Port which have the potential to affect these resources include future dredging requirements, potential reclamations works, and construction/excavation activities within the port estate and at quayside locations.

Landscape

Dublin Port is the largest multi-purpose port in Ireland being approximately 266 hectares in area. Currently, the landscape character and environment is predominantly industrial in character. The main land use 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.

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.

It is not expected that the existing landscape surrounding the port estate would change significantly in the next 30 years.

Population, Human Health and Deprivation

Some of the key issues associated with population 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 effects in terms of employment and trade. The surrounding area includes established communities such as Ringsend, Sandymount, Clontarf and East Wall areas.

There is currently no data available specifically for the health of the population in the vicinity of the port. There are a number of public open spaces, recreational and sporting amenities in the local area such as Fairview and Ringsend Park and Irishtown Nature Park

Port deprivation varies with the more affluent electoral division areas being Pembroke East B and Clontarf East B-D with the more deprived including North Dock B-C and Pembroke East A however these areas have significantly improved in recent years.

In general, it is considered that aspects of the Masterplan would have positive effect in terms of human health and deprivation.

Transport

Dublin Port is a main gateway into Dublin / Ireland, both for tourists on ferries and imports and exports. Dublin Port is the second largest industrial estate in Ireland with approximately 4,000 people employed in the port area.

Most of the trade is freight / 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.

In addition to the road network, some bulk goods enter and leave Dublin Port by rail.

Bus stops are located within the Northern Port on East Wall Road, East Road and Upper Sheriff Street. Rail services at Grand Canal Dock DART station are about 2.6 km from the port Centre which is approximately 33 minutes walking distance.

Sections of cycle track are available along North Wall Quay and East Wall Road. Footpaths are provided throughout the Northern Parcel of the port.

Growth of port activities and facilities are forecast to continue to increase up to 2040. On this basis, it is considered that the requirement to transport imports and

export trade and also tourists into and out of the port estate will continue to increase.

Waste Management

Standard Operating Procedures (SOPs) have been developed for each waste type managed by DPC and for the waste management practices undertaken by DPC.

DPC has implemented an enhanced system of waste segregation throughout the port including for office and canteen facilities. DPC has minimised the amount of waste sent to landfill in recent years with an 83% recycling rate of waste streams managed by DPC, achieved in 2010.

In terms of future trends for waste management in general, the Dublin City Council Waste Management Plan identifies that the primary objective is to prevent waste generation with the options of waste minimisation, reuse and recycling to be implemented where waste generation cannot be avoided.

Identified Data Gaps

Gaps in data relevant to this SEA have been identified through the collection of baseline information. With regards flood risk, this includes the Flood Risk Management Strategy currently being developed by DCC. This strategy will provide further guidance to the Port on spatial planning and appropriate flood measures if required.

Additionally, the Office of Public Works (OPW) is currently responsible for the development of Flood Risk Management Plans (FRMPs) across Ireland. 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.

Although the approximate location of many shipwrecks is known, a data gap has been identified regarding the exact location of the shipwrecks which are currently located in the vicinity of the Port.

Assessment and Selection of Alternatives

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. Additionally, there have 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. Figure 3 in this report presents a summary of the Dublin Port Company Draft Masterplan Engineering Alternatives.

The list of alternatives addressed in the Environmental Report have included:

1. Strategic alternative: Expansion vs. no Dublin Port Expansion;
2. Port-Wide alternative: Dry Port;
3. Ro-Ro and Lo-Lo Alternatives;

4. Bulk Liquid Facilities and Berthing Alternatives;
5. South Berth Alternatives; and
6. Dublin Gateway Extension Alternatives.

It is not practical to provide all of the strengths and weaknesses of each alternative in this summary. However, the key weaknesses of those alternatives that were not taken forward in the Masterplan are as follows:

- The 'No Dublin Port expansion' alternative would not overcome issues relating to the projected increase in sea freight and passenger demand. Development at alternative ports would increase transportation distances in order to service the Dublin markets. There is potential for a wider range of negative effects under the no expansion scenario because the alternatives are likely to require large-scale development and give rise to greater risk of impacts.
- An external dry port would be less economically viable than a classic port because there would need to be substantial investment in the new facility and supporting infrastructure. Furthermore, the creation of a new external facility is likely to increase a number of environmental risks and impacts in the new location;
- In terms of Ro-Ro and Lo-Lo, four feasible alternatives were put forward for assessment. The following three were not taken forward:
 - Infill / Reclaimed Area in Alexandra Basin West (north side of the Port, nearest berthing inlet to the rest of the city);
 - Ro-Ro Berth in North Wall Extension and Within Alexandra Basin West; and
 - Ro-Ro north of the Liffey switched with Lo-Lo to the south.
- The first and third alternatives above are likely to result in largely similar weaknesses, caused by having to remove and re-instate activities and facilities, and also the requirement for greater redevelopment and construction.
- Additionally, two alternatives were put forward but rejected for the east of Dublin Port, namely berthing at the very east of the port without the proposed eastern port extension / Dublin Gateway and expanding the Lo-Lo eastward into the Ro-Ro area. These alternatives are likely to negatively affect the internationally designated SPA, whilst simultaneously resembling the 'No Dublin Port Expansion' option with all of its drawbacks.
- The alternative concerning the relocation of bulk liquid / berthing facilities to the southern section of the port estate in conjunction with the construction of a sub-sea pipeline would result in high construction costs. This alternative would also give rise to additional construction-phase risks.
- In terms of the Dublin Gateway Extension, the 'do nothing' scenario gave rise to essentially the same weaknesses as the initial 'No Dublin Port Expansion' scenario, referred to above.
- Three alternatives were briefly considered with regard to proposed reclamation areas. The two alternatives that were not taken forward into the Masterplan (berths facing the Sandymount area and development with berths facing the Clontarf area) involve the creation of a new channel. These alternatives have the potential for negative impacts on internationally designated biodiversity sites. In addition, the former is not considered to be economically viable and is likely to generate a number of further negative environmental impacts. These 2

alternatives were not considered viable and on this basis, the proposed reclamation on the eastern boundary was considered the preferred alternative.

The key benefits which resulted in the preferred alternatives being taken forward are:

- The 'Dublin Port Expansion' scenario will accommodate the projected growth in demand of freight and passenger throughput in Ireland. There will also be benefits in terms of more efficient and economic access and transport. This alternative will also have a lesser impact in terms of greenhouse gas emissions and on the WFD objectives for coastal and estuarine geomorphology.
- The key benefit of the Classic Port Configuration scenario avoids the need for construction of an entirely new development and supporting infrastructure, with unknown land take and environmental impacts. In addition, this alternative is likely to be closer to the large goods market in Dublin centre and key transport routes.
- The Ro-Ro, Cruise Berths and Bulk Handling alternative is the most economically viable alternative in terms of construction and operation. This alternative is also considered to be the most sustainable alternative.
- In relation to the handling of bulk liquids and associated berthing, the alternative concerning the retention of the existing bulk liquid storage and berthing arrangements has been taken forward into the current Masterplan. This is because it is likely to have negligible effects on all of the objectives outlined in the SEA. Also, this alternative would have advantages in terms of economics and transportation.
- Despite the consideration of a number of alternatives for the Dublin Gateway Extension, the alternative involving the extension of the current area proposed for the Dublin Gateway is the only feasible way to provide the additionally required landside capacity required for Ro-Ro freight, which the other options cannot provide.

Assessment of Masterplan Options (The Adopted Masterplan)

The assessment related to both the construction and operational phases and identifies the requirements with regard to the implementation of appropriate mitigation proposals required to minimise likely environmental effects.

It was concluded that having implemented identified mitigation proposals, it is anticipated that the majority of the effects of the Masterplan proposals will be negligible.

A summary of effects per topic are described further below.

Biodiversity, Flora and Fauna

Key potential effects of the Masterplan include the following.

- 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.
- Potential construction effects to both designated and non-designated habitats and wildlife.

- Potential for operational based effects to parts of designated sites; disturbance of sediment through dredging and potential for increased risk of spills / accidents resulting in water pollution.
- Any effect (negative or positive) on the nearby Natura 2000-designated sites is considered to be of an international scale. Therefore, the residual long-term effect of delivering minor beneficial effects (as may be achieved through the mitigation listed below) could provide significant benefits at an international level.

The following mitigation has been proposed to eliminate or reduce effects.

- Implement a programme of good construction management practices which shall include the development of a Dredging Mitigation Strategy (for both capital and for any increase in maintenance dredging).
- An audit of flora and fauna within Dublin Port will also be undertaken.
- Relocation of the mooring structures (Dolphins), on which the breeding Tern colonies are located (this has been incorporated into the Masterplan).
- Where habitat feeding areas or other useful features of the SPA will be lost, appropriate measures will be required by individual project-level Natura Impact Statement (Appropriate Assessment).
- Future project studies will consider the phasing of developments to minimise the scale of any habitat or wildlife community effects.
- Proposed construction and operational phases of future developments undertaken will ensure that operations at sensitive locations are appropriately mitigated to minimise disturbance.
- DPC shall consider working with relevant statutory and non-statutory stakeholders to create an Integrated Environmental Management Plan for the port area and environs.
- DPC shall seek net enhancements on individual projects, using applicable guidance.
- DPC will review the requirement for fish surveys in areas where information is not extensive at present with the Inland Fisheries Ireland.

With mitigation in place, anticipated residual effects are negligible in the short term. 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 (Appendix C of the SEA Environmental Report).

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.

Flood Risk

Key potential effects of the Masterplan are detailed below.

Dublin Port Estate:

- 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.
- 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).
- There is also a risk that sea level rise due to climate change will increase the risk of flooding in the Port Estate.

Clontarf and Sandymount Coastal Shoreline

Without the implementation of suitable mitigation, it is anticipated that in the medium to long term, there would be the potential for minor adverse effects on the shorelines of Clontarf and Sandymount.

The following mitigation has been proposed to eliminate or reduce these potential effects:

- Individual projects will be subject to a Flood Risk Assessment at the planning application stage.
- The sustainable urban drainage principles outlined in the Greater Dublin Strategic Drainage Study will be implemented as appropriate 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.

Considering the mitigation outlined above, residual effects may include the increased frequency and severity of flood events, regardless of development, as a result of climate change.

However, at a strategic level, any negative effects arising from construction/development of the Masterplan would be expected to be negligible.

Surface Water

Key potential effects of the Masterplan on surface water include the following.

- Construction activities have the potential to affect the surface water environment through disturbance of sediment and accidental release of pollutants into the water body.
- Dredging activities may introduce sediments into the surrounding marine water column. These could result in a variety of effects to the marine water quality in the vicinity of these dredging activities namely increased turbidity, chemical changes and the potential for low levels of contaminated sediment.

- The potential growth in operational activities may increase the likelihood of accidental pollution incidents affecting the Lower Liffey Estuary.

The following mitigation has been proposed to eliminate or reduce effects.

- DPC will continue to develop within the requirements of the Eastern River Basin District Management Plan programme of measures.
- Employment of good construction management practices such as pollution prevention and control.
- Development of a Dredging Mitigation Strategy (for capital and any increase in maintenance dredging).
- Monitoring of surface water quality and also discharge monitoring.
- DPC shall consider working with relevant statutory and non-statutory stakeholders to create an Integrated Environmental Management Plan for the port area and environs.

With mitigation, residual effects are not likely to be significant however, further project-specific design and construction planning considerations will be required to implemented early in the project development stage.

Groundwater

Key potential effects of the Masterplan on groundwater are given below.

- 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.
- Inappropriate practices during site operations which could lead to leakage from bulk storage of oils/fuels/chemicals and tank farm operations; deterioration of WFD 'Good' status; and, contamination of the groundwater body through leakage or accidental spillage of operational pollutants such as hydrocarbons (diesel, petrol, fuel oil, hydraulic oil, green diesel) and chemicals.

The following mitigation has been proposed to eliminate or reduce effects.

- 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 certain 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.
- It will be a requirement to carry out good construction and operational site management practices.
- 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.
- Consideration is to be given to an Integrated Environmental Management Plan for the port area.

The above mitigation, if implemented successfully is expected to remove significant risks to the groundwater environment, and the Dublin Urban Groundwater Body.

Noise and Vibration

Key potential effects of the Masterplan regarding noise and vibration are given below.

- Construction activities may increase noise levels in the vicinity any construction areas, and somewhat beyond depending upon the local noise environment and atmospheric conditions.
- Traffic noise emissions associated with construction may increase noise levels in the vicinity of the development and roads leading in and out of the area.
- Operational night-time 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 result in an increasing duration of Ro-Ro/Lo-Lo activity at night.
- Without mitigation, it is anticipated that there would be a moderate adverse effect for the residents of Coastguard Cottages (Pigeon House Road) and Clontarf Road.

The following mitigation has been proposed to reduce or eliminate effects.

- DPC will continue to liaise with residents with regards to any future complaints regarding night-time noise emissions.
- DPC shall consider the development of an Integrated Environmental Management Plan for the port area.
- 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.
- The need for construction mitigation should be considered, including limiting working hours and temporary noise barriers, as appropriate to the activity and potential receptors.

With construction mitigation in place, it is envisaged that any short-term negative effects would have a negligible residual effect overall.

In the medium to long term, it is considered that with regard to the potential for the development of any project in the direct proximity of receptors, there may be a minor adverse residual effect for these receptors (immediately adjacent to Dublin Port).

For those Masterplan options which are located a distance from receptors immediately adjacent to the port, it is envisaged that with the mitigation outlined above and given the current baseline, in the medium to long term, the additional impact from these projects would be negligible.

Air Quality and Climate

Potential effects of the Masterplan associated with air quality are described below.

- Additional air emissions could result from increased construction vehicle movements i.e. construction worker movements to and from site as well as construction material deliveries.

- Construction activities may give rise to nuisance dust emissions in the vicinity of the construction area.
- Future development and the increase in throughput resulting from greater operational efficiencies could result in a potential increase in air emissions.

The following mitigation has been proposed to reduce or eliminate effects.

- Dust suppression measures shall be employed during construction.
- 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.
- Air quality impact assessments shall be made during the future planning and development stages of the Masterplan Options.

Overall it is anticipated that in the effects of the Masterplan after mitigation will be negligible with regards air quality, given the current and future reported levels and trends.

Cultural Heritage

Potential cultural heritage effects of the Masterplan include:

- construction of the 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;
- temporary effects on the setting of architectural heritage resulting from noise and visual intrusion associated with construction activities; and
- construction of options may result in the partial or total removal of undesignated architectural heritage assets.

The following mitigation has been proposed to reduce or eliminate the above effects.

- Detailed design of future developments to avoid physical impacts on archaeological heritage assets, enabling preservation in their current form and condition..
- Where preservation in situ is not feasible, preservation by record is recommended to mitigate identified effects.
- Detailed design of future developments, to enable the preservation of assets in their existing condition. Effects on the setting of architectural heritage assets may also be reduced or removed by detailed design..
- Where effects 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.
- Opportunities for interpretation of cultural heritage assets within the proposed Public Amenities Area are also recommended for consideration during the detailed design stage.

With mitigation, there is likely to be minor to moderate adverse effects on archaeological heritage of high importance and minor adverse effects to architectural heritage assets of high importance.

Landscape

Key potential effects of the Masterplan on the landscape are described below.

- Although most of the construction activities would not be in the immediate view of the receptors, it is anticipated that there would be minor adverse short-term effects relating to construction activities..
- Reclamation of land and new buildings could increase the visual envelope of the port and in turn, expand its overall influence on the landscape..
- These effects may reduce the influence that other features such as views of the Clontarf coastline and sailboats along the north of the port have on the wider landscape.
- The view of the port will be enhanced from outside of port estate and from nearby residential areas leading to moderate benefits..
- 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.
- New cruise ship berths at North Wall Quay will provide a more visually appealing setting for passengers arriving to and from Dublin.

The following mitigation has been proposed for the Masterplan.

- Where possible, identify and use routes required for the delivery of construction materials which avoid residential areas.
- DPC will consider the development of a Port Wide Landscape Plan relevant to the port estate and the Masterplan.
- 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 any deterioration in the setting of the River Liffey, North Bull Island and Dublin Bay resulting from future developments.

Temporary minor short-term effects to the landscape and visual aspect of the port are anticipated to remain after mitigation. 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.

Visually, it is likely that the Masterplan will have a moderate beneficial medium- to long-term residual effect through boundary softening measures.

Population, Human Health and Deprivation

Key potential effects of the Masterplan on the population, human health or levels of deprivation are described below.

- Increased traffic in and around the port could result in congestion leading to a rise in air and noise emissions, deterioration in the visual amenity and inconvenience for local residents..
- Some benefits are achievable in the short term due to the potential for local employment opportunities in the construction of port developments.

- 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.
- Increased trade for local businesses and industry having further regional effects through strengthening the Dublin City economy. 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.
- Potential rise in noise emissions in particular associated with Lo-Lo facilities. Additional traffic and industrial processes can also result in a rise in air and noise emissions. Both noise and air pollution can have a damaging effect on human health.

The following mitigation has been proposed for the Masterplan to reduce or eliminate the potential for, or degree of, negative effects.

- 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 residents.
- Incorporate measures to protect and enhance the health and safety of staff working at the port and visitors when planning for new development.

Short-term construction residual effects include the presence of construction vehicles which could result in traffic congestion. Some minor benefits include temporary positions in the port during construction of new developments which could boost local employment opportunities.

Other benefits may 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.

Transport

Key potential effects of the Masterplan on transport are as follows.

- Construction of 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.
- If all Masterplan options were developed, in the long-term, there may be some congestion issues with regards to transportation.
- 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). Improved access will also be provided to cruise liner passengers and crew visiting the city.

The following mitigation has been proposed to address potential adverse effects and enhance others.

- DPC will develop a Transport 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.
- 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.
- In addition to land-based transport movements, undertake liaison with other marine-based users of the port such as leisure and fishing/trawling.

With mitigation, residual effects include the required presence of construction vehicles which may lead to temporary congestion on the roads around the port estate. This could result in delays for commuters and for public transport services.

With regard to sustainable travel opportunities, in the future it is anticipated that options for sustainable travel within and around the port will grow.

Waste Management

Key potential effects of the Masterplan on waste management are described below.

- 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.
- 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.

The following mitigation has been proposed to address potential adverse effects and enhance others.

- Review the current waste management plan 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 will give appropriate consideration to the potential to encounter contaminated soil arisings during the development of future projects.

With mitigation in place, as set out above, no significant residual effects are considered likely.

Cumulative Effects

The Masterplan will be implemented alongside development related to housing, economic land and others. On review, the majority of the potential cumulative effects require no further mitigation to be implemented. Those where mitigation is proposed include the following;

The Draft Poolbeg Planning Scheme is not envisaged to be constructed during the same period as the Masterplan however should this occur, a co-ordinated approach to traffic management should be considered. The Dublin Eastern Bypass, if approved will also require the same approach to traffic management and consideration to other cumulative effects.

The Dublin Waste to Energy Facility may be constructed and become operational during the Masterplan period. Under such circumstances, a co-ordinated approach to traffic management will be required to be considered. Liaison between DPC and Dublin Waste to Energy Ltd (DWTE) will be required if both projects are developed together, and liaison would also be appropriate for the development of an Integrated Environmental Management Plan.

Monitoring and Mitigation Proposals

Potential significant environmental effects resulting from the implementation of plans and programmes require mitigation measures to be put in place to reduce any potential effects. In conjunction with these mitigation measures, monitoring based on the indicators of each SEA Objective/Environmental aspect will be carried out to identify at an early stage any unforeseen effects.

Monitoring Programme

The SEA Directive requires that significant environmental effects 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 the table below.

Table 1: Monitoring Programme

Environmental Aspect	Indicators	Targets	By Whom
Population / Human Health and Deprivation	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 maintain it's key economic importance on a national and international basis.	Dublin Port Company
	Numbers of amenities provided which have benefits for the local communities	Increase in the number of amenities and facilities available to local residents.	Dublin Port Company
Biodiversity – Flora and Fauna	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.	Dublin Port Company NPWS, Inland Fisheries
Flood Risk and Coastal Management	Increase in the number of areas reporting flooding incidents.	Contribute to the management of flood risk within the port estate and adjacent vicinity.	Dublin Port Company, OPW, DCC
Water Quality (Surface and Ground)	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.	Dublin Port Company Eastern River Basin Management Plan (ERBMP) under the WFD.
	Increase in mains water usage detected.	Significant contribution to the reduction in mains waters consumption within Dublin.	Dublin Port Company
Noise	Increase in number of complaints relating to noise emissions from port activities and operations.	No significant increase in the effects resulting from port generated noise emissions on sensitive receptors.	Dublin Port Company
Air Quality	Increases in the number of reported non-compliances with legislated Air Quality Standards.	Contribute to achieving compliance with legislated Air Quality Standards.	EPA DCC Dublin Port Company
Climate Change	Increases in the carbon footprint relating to DPC activities and operations.	To contribute to the reduction of greenhouse gases (carbon emissions) in Ireland.	Dublin Port Company
Waste Management	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.	Dublin Port Company
Archaeological and Architectural 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	Dublin Port Company
Landscape	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.	Dublin Port Company
Transport	Increase in the level of intermodal transport options within the port estate.	Enhance the provision of a sustainable and integrated transport network within Dublin Port Estate.	Dublin Port Company

Conclusions and Next Steps

Conclusion

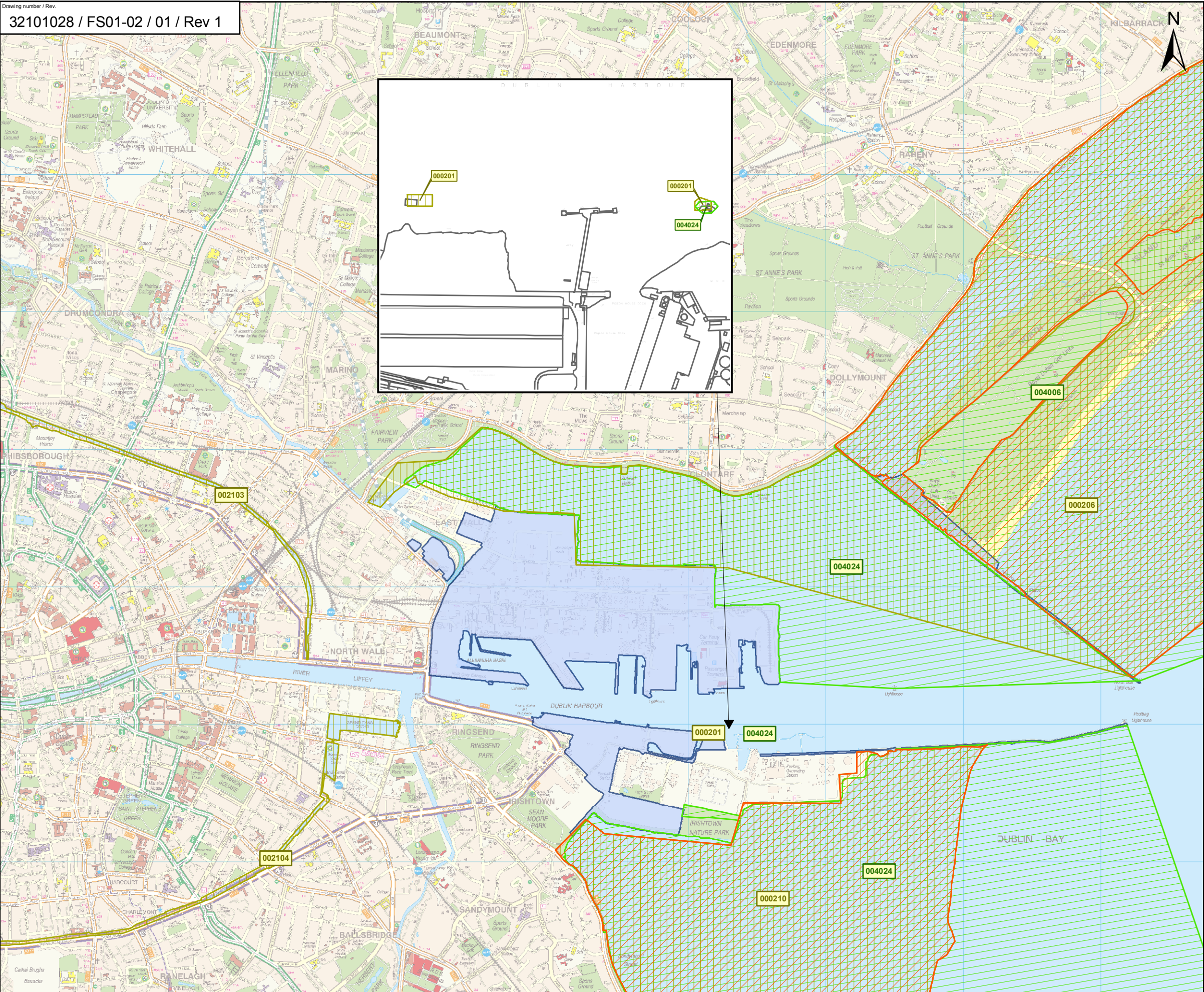
The SEA Environmental Report concluded that short-term effects, relating primarily to construction based effects, range from being negligible to minor adverse. In the medium to long term, moderate adverse effects are predicted for potential unknown archaeological remains and resulting works such as dredging within the harbour. However, overall, in the medium to long term, potential effects of the Masterplan are largely negligible with minor beneficial effects expected for some aspects.

Next Steps

The consultation on the Masterplan and SEA has now been concluded. Comments have been reviewed and followed up where necessary and having taken these into consideration, the SEA and Masterplan have been amended and updated where appropriate. The final Masterplan will now be adopted and published, alongside the final Environmental Report and Non-Technical Summary.

A Post-Adoption Statement will also be published, summarising how the SEA and consultation have influenced the development of the Masterplan.

Figures 1-3



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

1	FEB 12	ISSUE OF SEA	LM	DM	BK
0	OCT 11	ISSUE OF SEA DRAFT	LM	DM	BK
Rev.	Rev. Date	Purpose of revision	Drawn	Checked	Approved

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DUBLIN PORT COMPANY

Project
DUBLIN PORT MASTERPLAN
SEA ENVIRONMENTAL REPORT
NON-TECHNICAL SUMMARY

Drawing Title
FIGURE 1:
CONSERVATION DESIGNATION AREAS
IN THE VICINITY OF DUBLIN PORT

Drawing Status
For Issue

Scale
NTS @ A3
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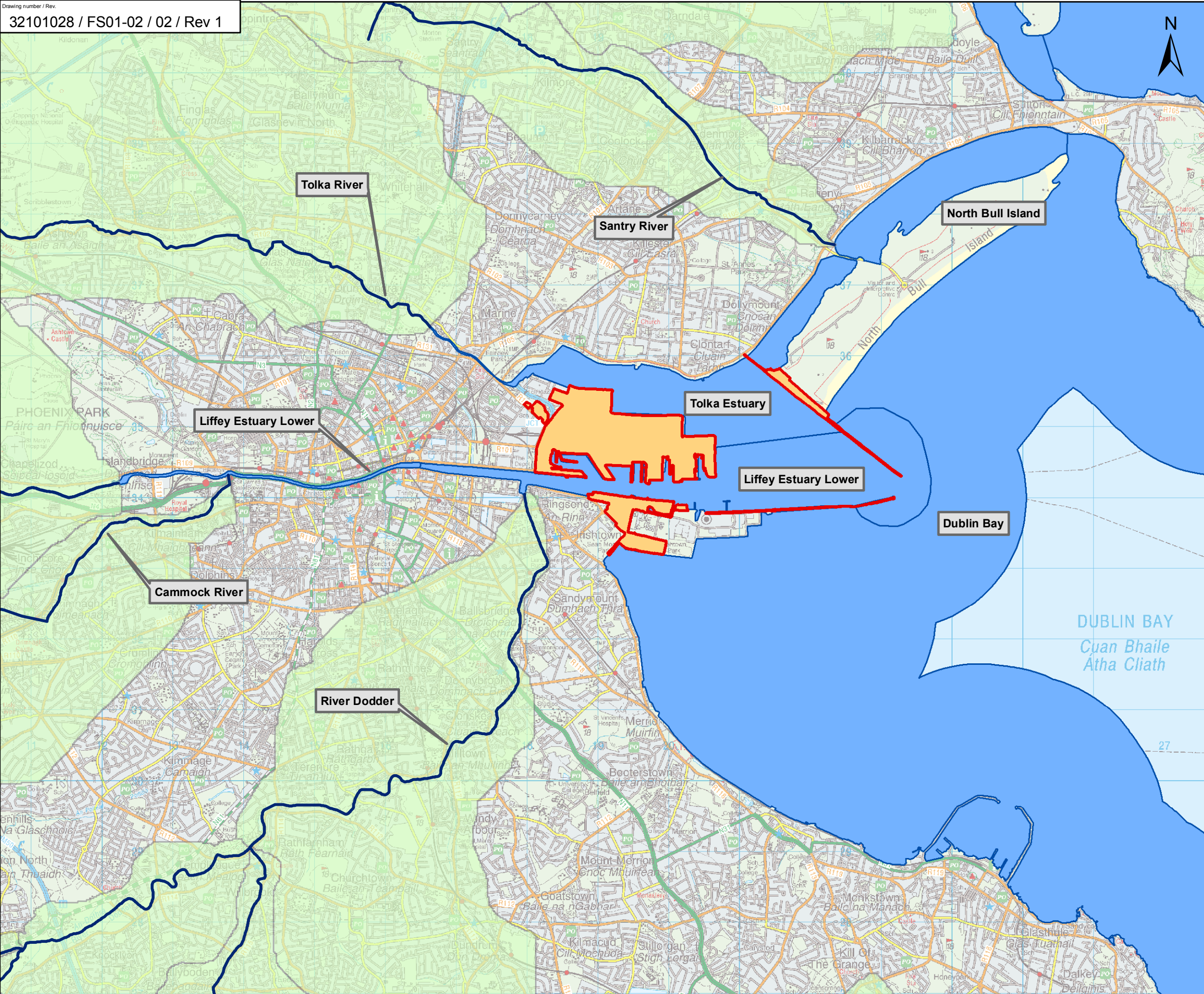
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LEGEND:

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

1	JAN 12	ISSUE OF SEA R	LM	DM	BK
0	OCT 11	ISSUE OF SEADRAFT ER	LM	DM	BK
Rev.	Rev. Date	Purpose of revision	Drawn	Checked	Approved

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DUBLIN PORT MASTERPLAN
SEA ENVIRONMENTAL REPORT
NON-TECHNICAL SUMMARY

Drawing Title
FIGURE 2:
SURFACE WATERBODIES IN THE
VICINITY OF DUBLIN PORT

Drawing Status
For Issue

Scale
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