

Environmental Impact Assessment Report

Non Technical Summary

Volume 1



3FM PROJECT NON-TECHNICAL SUMMARY

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1 INTRODUCTION AND PROJECT SCREENING

This document is the Non-Technical Summary (NTS) of the Environmental Impact Assessment Report (EIAR) prepared to assess the likely significant effects of the 3FM Project on the environment. The NTS aims to provide the reader with a concise summary of the content of the EIAR presented without technical jargon, hence understandable to anybody without a background in the environment or the project.

1.1 Context and Purpose of the EIAR

The EIAR has been prepared by RPS, on behalf of the applicant, Dublin Port Company (DPC), for the 3FM Project. The 3FM Project is the third and final Strategic Infrastructure Development (SID) project at Dublin Port from the Dublin Port Masterplan 2040, reviewed 2018, for which development consent is sought.

DPC is applying for a 15-year permission to facilitate the construction of the 3FM Project, given the scale of the proposed development and the overriding imperative to ensure that Dublin Port continues to operate effectively during construction which will require works to be staged in distinct phases.

In addition to permission sought under section 37G of the Planning and Development Act 2000, as amended (referred to throughout this EIAR as “the 2000 Act”), additional consents are required for certain marine works included in the 3FM Project, including a Dumping at Sea (DaS) Permit from the Environmental Protection Agency (EPA). Other consents will also be required for a range of activities including waste management, service connections and archaeological monitoring from the relevant consenting authorities.

The 3FM Project does not require a Marine Area Consent under the Maritime Area Planning Act 2021 as it falls within the time-limited exempting provisions of section 75(4) of that 2021 Act, as inserted by section 277 of the Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023.

This EIAR has been prepared to support the relevant assessments to be carried out by the respective competent authorities on all relevant applications related to development consent. Accordingly, this EIAR identifies, describes and assess in an appropriate manner, all the direct and indirect significant effects of the 3FM project, regardless of the content of any application for consent.

The primary objective of any EIAR is to identify the baseline environmental context of the proposed project, to identify the effects, if any, which the proposed project, if carried out, would have on the environment and to propose alternative options, where feasible. Where alternative options are not feasible, appropriate mitigation measures, where necessary, are proposed.

In preparing this EIAR, the following legal provisions and guidelines, amongst others, were followed:

- The requirements of EU EIA Directives and Irish law regarding Environmental Impact Assessment (including Part X of the Planning and Development Act (PDA) and Part 10 of the Planning and Development Regulations 2001, as amended (PDRs));
- European Commission Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU) (European Commission, 2017);
- The Planning and Development Act 2000 (as amended); and
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022).

In addition, specialist disciplines have had regard to other relevant guidelines and legislation where appropriate, as noted in the specific chapters of the EIAR. This EIAR includes all of the information that may reasonably be required to reach a reasoned conclusion on the likely significant effects of the 3FM Project on the environment, including all of the information specified in Annex IV of the EIA Directive, taking into account current knowledge and methods of assessment.

The compilation of the information necessary for the EIAR did not present any significant difficulties. In addition to published datasets, the preparation of the EIAR has drawn on the environmental monitoring programme which is currently in place for the construction of the following SID projects at Dublin Port:

- Alexandra Basin Redevelopment (ABR) Project, the first SID brought forward to planning from the Dublin Port Masterplan 2040, and which commenced construction in 2016; and
- MP2 Project, the second SID brought forward to planning from the Dublin Port Masterplan 2040, and which commenced construction in 2022.

The site-specific and up-to-date scientific data collected was used in the preparation of the EIAR for the project and serves to illustrate the depth of understanding of the environment in and around Dublin Port, including the inner Liffey channel (Dublin Harbour) and Dublin Bay, and the quality of the data on which that understanding is based.

The preparation of this EIAR was further assisted by the extensive environmental datasets collated during the preparation of the Strategic Environmental Assessment (SEA), for the purposes of the review of the Dublin Port Masterplan during 2017 and 2018.

Additional survey work has been undertaken in order to provide up-to-date baseline information to support the environmental assessments, in addition to the site-specific information from the existing databases from official sources.

1.2 The Dublin Port Masterplan 2040

Dublin Port is the largest freight and passenger port in Ireland, with all cargo handling activities being carried out by private sector companies operating in intensely competitive markets within the port.

For all of Ireland's major national ports, it is essential for the health and vitality of the national economy that capacity constraints do not emerge which could lead to supply chain inefficiencies. The Dublin Port Masterplan 2040 seeks to ensure that no capacity constraints emerge in Dublin Port between now and 2040.

The Dublin Port Masterplan 2040 sets out DPC's vision to transform Dublin Port into a highly land efficient port and an attractive community resource in its own right, accessible and permeable to the people of Dublin to enjoy and experience the port's heritage in all its diversity, from the natural environment, to arts, to local history.

Furthermore, where the Masterplan had originally envisaged a return to an eastern expansion of Dublin Port into the Tolka Estuary, the 2018 review came to the fundamental conclusion that DPC would no longer pursue this as an option. The Dublin Port Masterplan 2040 therefore aims to maximise the capacity on Dublin Port's

fixed brownfield land area before seeking to develop additional port capacity at another east coast location. DPC has published the detailed analysis behind this approach in the Dublin Port Post 2040 Dialogue Papers.¹

The Dublin Port Masterplan 2040, reviewed 2018, determined that the port's ultimate capacity was 77.2m tonnes of cargo throughput per annum by 2040 based on the brownfield land available to the port. Since then, however, there has been a permanent loss of 7ha of port land to State Services in the North Port Estate, primarily for the Office of the Revenue Commissioners, Customs Division as a result of additional customs checks consequent on the United Kingdom's exit from the European Union. The consequence of this loss of land has been to reduce the port's ultimate capacity to 73.8m tonnes of cargo throughput per annum by 2040.

DPC is in the process of carrying out a number of projects from the Dublin Port Masterplan 2040 to achieve the port's ultimate capacity of 73.8m tonnes of cargo throughput per annum by 2040. This development has focused, to date, on the north side of the River Liffey and at Dublin Inland Port.

The 3FM Project at Dublin Port has been designed in accordance with the Dublin Port Masterplan 2040. The proposed project focuses on the DPC-owned lands of the south port area on the Poolbeg Peninsula. Figure 3 in the Masterplan (reproduced in [Figure 1](#)) identifies the land uses and development projects on port lands which will allow the port to achieve its ultimate capacity of 73.8m tonnes of cargo throughput per annum by 2040.

The 3FM Project has evolved from the concept drawings of the Masterplan, driven by DPC's understanding of the key environmental constraints formulated by a decade of environmental monitoring, collaborative working with NGOs and Universities, and early consultation with key stakeholders.

The 3FM Project has six key elements:

1. A new public road and bridge called the **Southern Port Access Route (SPAR)** to link the North and South Port Estates.

The route will include a new bridge over the River Liffey. It will be located immediately east of Tom Clarke Bridge and north of the R131. The route will facilitate Heavy Goods Vehicles (HGVs), active travel users (pedestrians, cyclists, wheelers etc), blue light services and public transport users moving to and from the South Port and Poolbeg Peninsula. The SPAR will allow the 3FM Project to be rail enabled through rapid road shunting of freight by electric vehicle from the South Port Estate, across the Liffey, to rail intermodal facilities in the North Port vicinity. The SPAR will have a direct connection to the Dublin Tunnel (aka Dublin Port Tunnel) via the North Port road system.

2. A **new Lift-on Lift-off (Lo-Lo) container terminal** with an annual throughput capacity of 550,000 Twenty-foot Equivalent Units (TEU) or 5.34m tonnes.

The Lo-Lo container terminal will consist of two main components:

¹ Notably in [Paper 5 - The Conundrum of Planning for Long-Term Growth](#) – and in [Paper 7 - Options for the Greenfield Development of Additional East Coast Port Capacity](#).

- a. Terminal located north of the ESB's Generating Station on the eastern end of Poolbeg Peninsula with 650m of deep water berthage dredged to a depth of -13.0m CD (Chart Datum), plus associated cargo handling areas (Dublin Port Masterplan Area N). This terminal will accommodate larger Lo-Lo vessels of up to 240m length, primarily from Continental Europe.
 - b. Transit container storage yard located on waterside land currently used for bulk cargo handling (Dublin Port Masterplan Area L).
3. Replacement of the existing Lo-Lo container terminal, currently operated by Marine Terminals Limited (MTL), with a **new Roll-On Roll-Off (Ro-Ro) freight terminal** with an annual throughput capacity of 360,000 Ro-Ro units or 8.69m tonnes.

The Ro-Ro freight terminal will consist of two main components:

- a. Terminal located at existing Berths 42 – 45 including provision of two berths, each with a single tier Ro-Ro ramp, plus associated cargo handling facilities (Dublin Port Masterplan Area K).
- b. Terminal located on DPC-owned land on the southern side of the Poolbeg Peninsula (Dublin Port Masterplan Area O).

This combined terminal will accommodate larger Ro-Ro vessels of up to 240m length, primarily from Continental Europe.

4. Provision of a **325m diameter ship turning circle** in the river channel north of Pigeon House Harbour, dredged to a depth of -10.0m CD.

The ship turning circle will enable safe navigation and efficient manoeuvring of vessels up to 240m in length.

5. Maritime Village

Development of a new **Maritime Village** at Pigeon House Road and Berth 41.

This village will accommodate local rowing, sailing, and boat clubs and will provide a significantly enhanced public realm and facilities on the waterside. It will also accommodate the relocation of Port Harbour Operations from the North Port Estate.

6. Community Gain

Integrating Dublin Port with Dublin City and its people is a core objective of the Masterplan for Dublin Port. Development of proposed new public amenities on the Poolbeg Peninsula as part of the 3FM Project will provide **community gain** and contribute towards integrating the port with the city. These include:

Enhanced **recreational** amenity through:

- **7.0km of new or upgraded Active Travel Path** (cycle, pedestrian, wheelers etc.) **and 4.9km of new or upgraded footway** across the North Port Estate, SPAR and Poolbeg Peninsula, which will link with the 1.4km Liffey Tolka Greenway in the North Port Estate, and from there to the 4.0km Tolka Estuary Greenway currently under construction by Dublin Port. DPC will also provide Dublin City Council with a €5 million contribution for future upgrading of the existing coastal path along the southern perimeter of the Poolbeg Peninsula.
- Development of a sailing, rowing and maritime campus (Maritime Village) adjacent to the existing Poolbeg Yacht and Boat Club in conjunction with local yacht and boating clubs, including a public slipway and facilities for maritime skills training.
- Provision of Recreational Space
 - **Port Park and Wildflower Meadow** (2.5ha)
 - **Coastal Park** (1.6ha)
- Provision of 1.1ha extension to Irishtown Nature Park.
Enhanced **public realm** through:
 - Development of a new public plaza as a key part of the Maritime Village.
 - Extensive boundary softening works adjacent to the development sites forming part of the 3FM Project.**Community support** through:
 - Establishment of a new €2 million Community Benefit Fund for Education, Heritage & Maritime Training Skills projects within the Poolbeg area. The initial capital for the Fund will be administered by DPC in consultation with local stakeholders.

Heritage & Biodiversity enhancements through:

- Commissioning a new Public Access Feasibility Study regarding the Great South Wall so as to identify improved public interpretation, accessibility, facilities and conservation possibilities,
- Provision of up to €1 million funding to implement the study recommendations.
- Provision of an additional permanent marine structure (dolphin) to expand the available habitat and range of the Dublin Port tern colonies.
- Provision of Interpretative Markers to delineate the alignment of the Great South Wall (GSW)

A General Arrangement Drawing illustrating the main elements of the 3FM Project is presented in Figure 2.

Other significant ancillary works include:

- Improvements to the existing road network, linking and providing access to the port terminals, including new signal-controlled junctions and a new roundabout on Pigeon House Road;
- Improved pedestrian access from Irishtown to the proposed Maritime Village; and
- Demolition of the existing Poolbeg Oil Jetty and Sludge Jetty.

A detailed description of each element of the 3FM Project is presented in Chapter 5 of the EIAR and on the Planning Drawings.

The estimated capital cost of the 3FM Project is €1.1 billion (2024 costs).

Without the 3FM Project, Dublin Port will reach its capacity limit much earlier than 2040, perhaps as early as 2030. If this were to happen, there is a risk of a national port capacity shortage.

Post-2040, additional capacity at other new or existing east coast ports will be required so that, as Dublin Port approaches its ultimate capacity, excess volumes which Dublin Port cannot handle can be accommodated elsewhere.

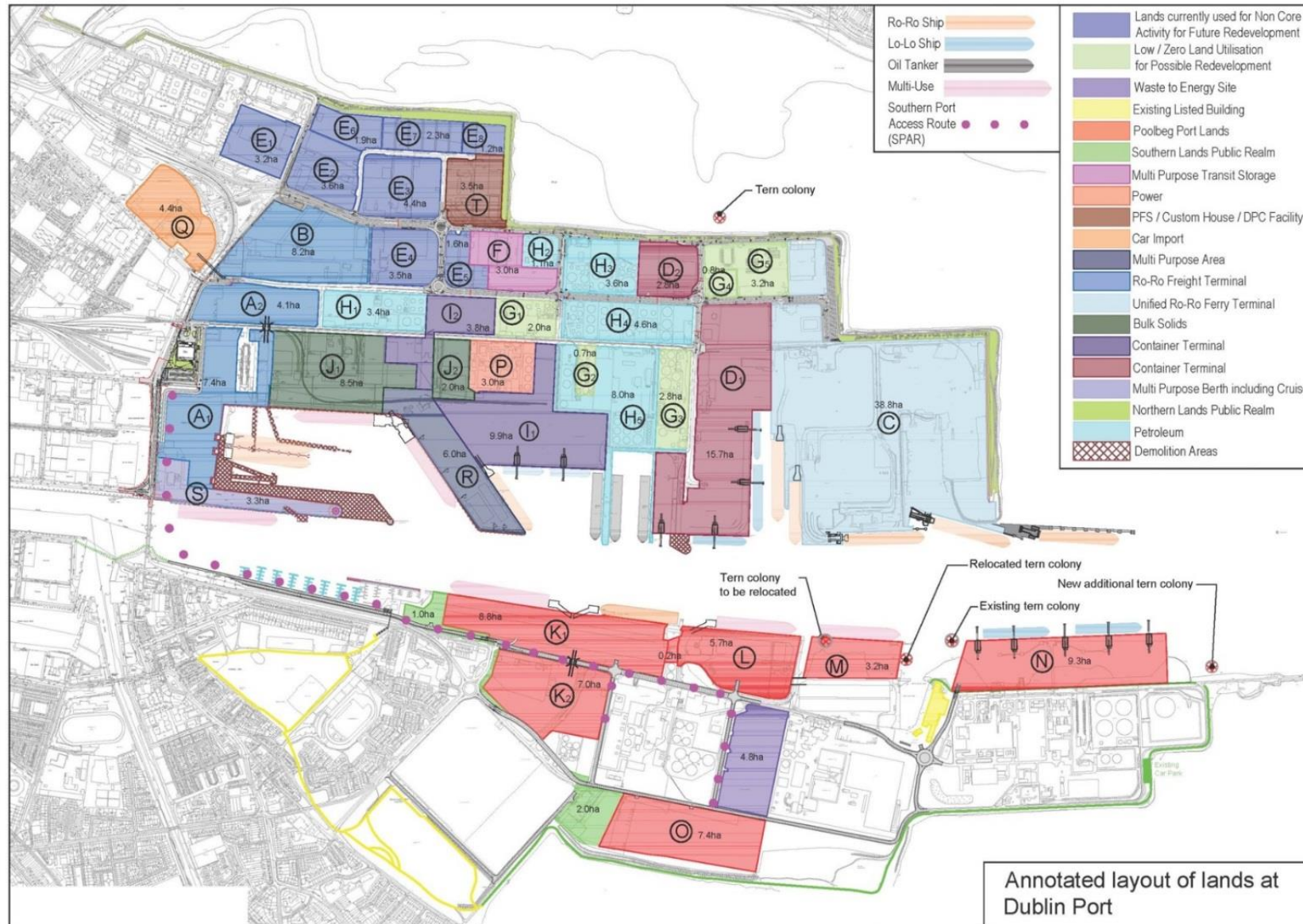


Figure 1 Dublin Port Masterplan 2040, reviewed 2018, Annotated Layout at Dublin Port (Reproduced from Figure 3 of the Masterplan)

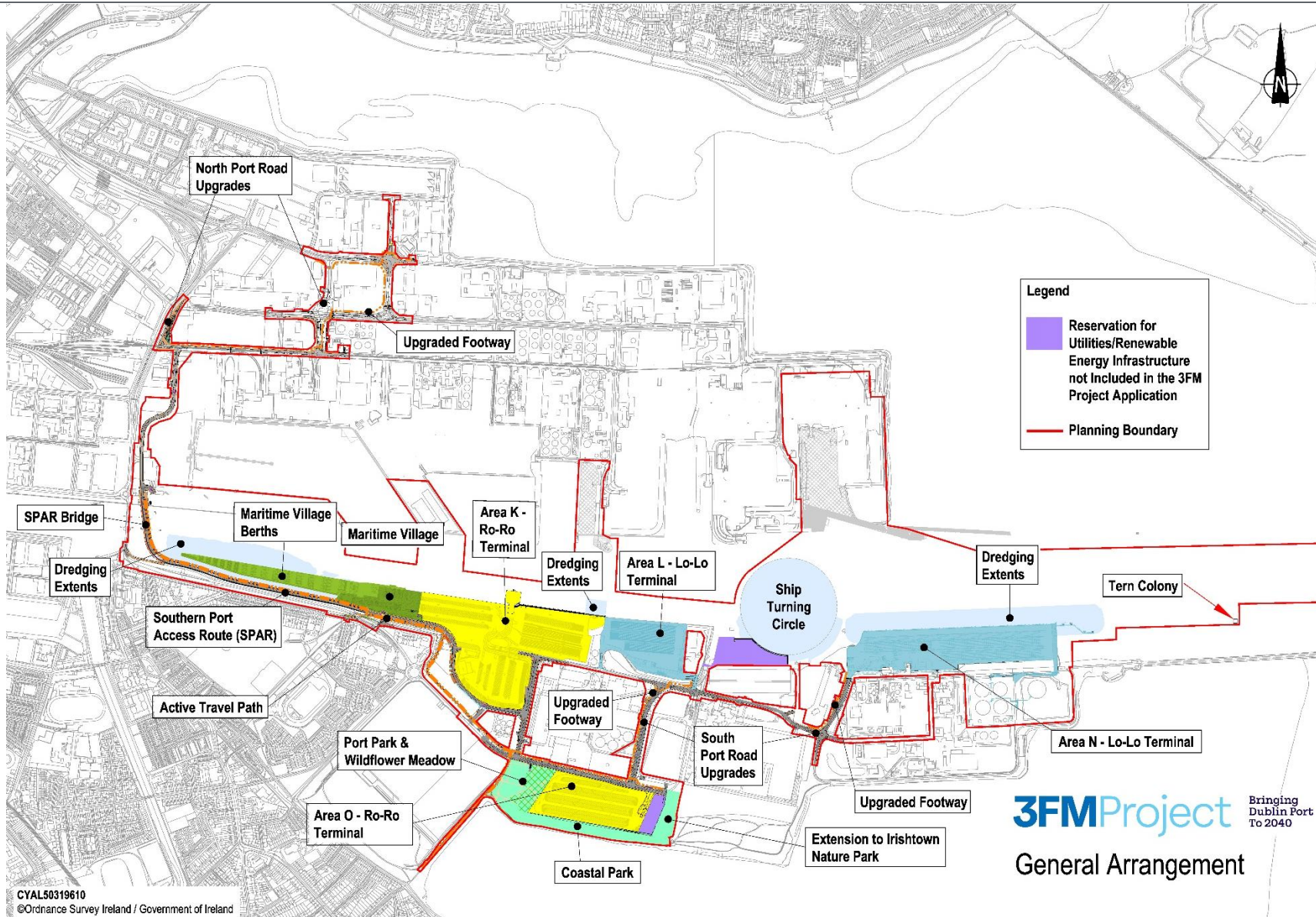


Figure 1 Main Elements of the 3FM Project

2 NEED FOR THE 3FM PROJECT

The 3FM Project is the third and final project to be brought forward from the Dublin Port Masterplan 2012 (reviewed 2018). Dublin Port Company (DPC) has already secured planning permission for two existing Masterplan Projects – the Alexandra Basin Redevelopment (ABR) Project in 2014, and the Masterplan 2 (MP2) Project in 2020.

- The 3FM Project concerns the development of required additional port capacity in the south port area on the Poolbeg Peninsula.
- The project will provide the additional infrastructure for freight required in the unitised modes (Ro-Ro and Lo-Lo).
- The 3FM Project will provide close to 20% of the capacity that will be needed by 2040 on the under-developed almost one-fifth of Dublin Port's lands located on the Poolbeg Peninsula. A range of different assessments and reports have identified that the additional capacity provided by this project is required to ensure that capacity constraints do not arise in the period to 2040.
- The 3FM Project will also complete the development of Dublin Port's overall road network to significantly remove port traffic from public roads in the vicinity of Dublin Port, particularly the Tom Clarke Bridge. The project will fulfil a number of national strategic objectives including connecting the south port area with the Dublin Tunnel and the M50/M1 through the construction of a new bridge across the River Liffey as a core part of the Southern Port Access Route (SPAR).
- The 3FM Project will complete a series of public realm and active travel projects on the Poolbeg Peninsula which mirror similar developments on the north side of the port to meet Masterplan 2040's objective to integrate Dublin Port with Dublin City.
- Sustainability is at the heart of the 3FM Project, not just in the proposed development of brownfield sites, but also in the context of the provision of additional public realm and active travel facilities, future provisioning for Luas connectivity to the Poolbeg Peninsula, and providing rail connectivity from the South Port Area to the National Rail Network through dedicated low carbon shunting services. The 3FM Project has also been proposed with key regard for biodiversity and the natural environment. Reduction in embodied carbon in the construction of the project will be achieved using low carbon concrete products (with 50% ground granulated blast-furnace slag (GGBS) cement) and steel products that use recycled steel.
- The 3FM Project is being proposed for a 15 year planning consent in the context of the complexity of developing a large scale project of this nature in a working port with different phases of the proposed project proceeding in a manner that does not interrupt the functioning of the Port for commercial, passenger and leisure purposes. DPC's experience in the previous Masterplan SID projects has demonstrated that a permitting period of this duration is required.

2.1 Project Rationale

2.1.1 Core Principles Underpinning the 3FM Project

The 3FM Project is advanced on the basis of a number of key principles that are central to understanding the need and rationale for the 3FM Project.

2.1.1.1 Port capacity must remain ahead of demand

To prevent wider constraints in the national economy, the capacity of Dublin Port must remain ahead of demand. The Issues Paper on the Review of National Ports Policy 2013 (Department of Transport, October 2023) noted that;

“Failure to proceed with investment in capacity, infrastructure, equipment and hinterland connectivity poses serious risks to the future success of Ireland’s ports and national economy” (page 18).

The Port Capacity Study (IMDO 2023) suggests that any failure to maintain sufficient port capacity could have a major negative impact on the national economy, starving it of the materials needed to continue strong growth. The Study further expressly states that Ireland should have sufficient port capacity for all cargo modes if planned developments are put in place in time.

The 3FM Project is just such a planned development. The 3FM Project has been recognised as a central element of the plans for the maximisation of the capacity at the port since the publication of the Dublin Port Masterplan in 2012. Key elements of the project, including the Southern Port Access Road, are also specifically referenced in the Project 2040/ National Planning Framework.

Long-term port demand forecasting is not an absolute science, given that it is inherently linked to forecasting national economic performance and population growth. There are also inevitable uncertainties in projecting the port’s throughput capacity far into the future as there will be changes that cannot be accurately projected in the respective demands for Ro-Ro and Lo-Lo capacity. Likewise, the proportion of Ro-Ro units that are containers could change in the years ahead. Dublin Port Company must by necessity plan on the side of caution when making port demand and capacity projections, particularly given the very extended timescales of delivering large port infrastructure projects. Whilst correctly acknowledging the limitations of long-term port demand forecasting, Dublin Port Company is confident that its projections are realistic. However, even if those projections transpire to have been somewhat optimistic, the proposed port infrastructure will still have to be delivered, albeit within a slightly longer timeframe than currently envisaged. On the other hand, the consequence of taking an unnecessarily conservative approach to demand projection could be a national port capacity shortage with significant economic consequences. Any national port capacity shortage could not be remedied quickly, given the very long design/ planning/ permitting/ construction period for delivering major port infrastructure. e.g. If granted planning permission and then constructed, the 3FM Project will have taken 20 years from the original commencement of planning and design work to project completion.

2.1.1.2 Assessment of demand and capacity should be soundly based and take account of the highest growth scenario

Given the significant economic consequences of the potential under-provision of port capacity identified above, it is important that an assessment of port demand and capacity should be soundly based upon a range of

different approaches and, as a Report by Indecon Consultants (Analysis of Relationships between Projected Volumes and Capacity at Dublin Port, Indecon Consultants, August 2023, see Appendix 2-2) indicates, should take account of the highest growth scenario which has been reasonably assessed. Thus, the capacity assessments upon which the design of the 3FM Project has been based have been calculated using a range of different assessments.

Masterplan 2040

While determining future capacity requires a range of different assumptions to be made, the analysis of port volumes from 1980 does provide a reasonable basis for examining future growth. The detail of this analysis is set out below.

IMDO Estimates (2023)

The Port Capacity Study was prepared by Arup/EY for the Irish Marine Development Office (IMDO) in June 2023. To determine the capacity of Irish ports to handle forecasted demand to 2040, a demand forecast model was developed to assess the likely throughput of trade goods over the period. . The Port Capacity Study states;

“Whilst the demand forecast model focuses on how GDP drives trade, the reverse is also likely to be true. This means that any failure to maintain sufficient port capacity could have a major negative impact on the economy, starving it of the materials it needs to continue strong growth. The same is true for exports, as failure to export would lead to reductions in foreign earnings and loss of trading opportunities for Irish exporters.” (Port Capacity Study, Arup, June 2023, Chapter 8-5)

The Port Capacity Study specifically addresses unitised modes in Dublin Port.

On Ro-Ro, the Study noted that demand in Dublin is likely to increase over time, with Dublin Port requiring approximately two million units per year in Ro-Ro freight capacity. On Lo-Lo, the Study noted that Dublin Port has the greatest Lo-Lo throughput nationally and that this is unlikely to change, which requires Dublin Port to increase its Lo-Lo capacity by 2027. The Study specifically notes that DPC is planning for such an increase, a core part of which is the 3FM Project.

The Executive Summary of the Port Capacity Study is attached at Appendix 2-1 to the EIAR.

Indecon Economic Consultants (2023)

In September 2023, Indecon carried out an analysis of the relationships between project volumes and capacity at Dublin Port. Its analysis indicated that port volumes are likely to continue to expand in line with the projected growth in the Irish economy in the medium term, as predicted by the Department of Finance.

The Indecon Report noted the overall imperative for Dublin Port to remain agile in responding to the trading needs of the Irish economy and recognised the importance for DPC of planning for a high growth scenario so that capacity is available before demand must be met. The Report notes that there would be very significant economic costs arising if the Port is unable to meet customer demand.

On unitised trade, the Report noted that Dublin Port is likely to operate at close to capacity for both Ro-Ro and Lo-Lo. The position in respect of Lo-Lo volumes was identified as being particularly acute, with the port operating

at peak capacity for the current decade (ie, 2021 – 2030), with enhancements (including 3FM) required to ensure sufficient Lo-Lo capacity at the port for 2040.

The Indecon Report also commented on the loss of land available to DPC for freight handling as a consequence of land being allocated to certain State authorities for various customs and border checks consequent on the United Kingdom's exit from the European Union. This reduction in land availability directly impacts on trade flows, causing projected Ro-Ro capacity to be reduced by approximately 140,000 units per year.

The Indecon Report is attached at Appendix 2-2 to the EIAR.

Port Policy Issues Paper (2023)

The Ports Policy Issues Paper references the IMDO Study when analysing Port Capacity and specifically notes that a failure to proceed with currently proposed port infrastructure projects will pose serious risks to Ireland's national economy.

The Ports Policy Issues Paper is attached at Appendix 2-3 to the EIAR.

2.1.1.3 Sustainability at the heart of 3FM

The rationale for the 3FM Project, and in particular the criteria that have informed the nature of the development proposals, are expressly predicated upon a number of key sustainability considerations, including:

- To seek to use brownfield lands in order to minimise the impact of port development on the natural environment. The 3FM Project involves the exclusive use of brownfield lands solely making use of existing industrial and port lands.
- No large-scale infill. In the Dublin Port Masterplan, DPC gave a commitment not to undertake additional significant infill within the Dublin Harbour area. The 3FM Project respects this commitment and has been designed to minimise the extent of infill required to give effect to the proposals. This is evident in Area N, where the additional berth capacity is provided by way of an open pile structure, which has been selected to minimise the impact on marine life and benthic resources.
- Detached from residential amenity. The core elements of the 3FM Project have been designed in a manner to reduce the impact on local residential communities, whether from the perspective of potential noise, visual amenities or emissions. This can be seen in the revised Project Scope which led to Area O being changed from a storage area where containers would be stacked three units high, to a much less visually obtrusive Ro-Ro Freight Terminal where containers will not be stacked at all. Similarly, the design of the Southern Port Access Route (SPAR) was configured in a way that minimises the potential impact on residents of York Road, and Area K was reconfigured to reduce any adverse impact on residents of Coast Guard Cottages
- Supportive of other sustainability initiatives – the project has also been configured to make a significant contribution to four other important sustainability initiatives:
 - DCC District Heating – the design of the project was configured to make land available within the original project site for DCC to develop a District Heating facility connected to the Dublin Waste to Energy Plant. This facility will form a separate planning application by DCC.

- Codling Wind Park (CWP) Project – the configuration of the 3FM Project made provision for land owned by DPC to be made available to CWP for the construction of a substation for Offshore Renewable Energy which it is proposed will be brought on shore from a wind farm in the Irish Sea. This substation will form a separate application from CWP and is not part of 3FM.
- Active Travel – the 3FM Project also makes provision for the development of new Active Travel routes, both within the context of the current application by DPC, but also through the provision of funding to DCC to construct additional routes. This will aid sustainable travel and recreation adjacent to the subject site.
- Public Park and Nature Reserve – the 3FM Project has been configured to accord with relevant zoning objectives to provide a new public park and an extension to the Irishtown Nature Reserve.
- Sustainable design and use of the SPAR – the SPAR will make a significant positive contribution to sustainability in a number of different respects. First it will aid in the reduction of emissions from commercial port traffic and other traffic by facilitating the free-flowing movement of HGV traffic from the Poolbeg Peninsula away from private roads and residential areas. This will reduce congestion and associated idling time on the R131 and East Wall Road, leading to decreased fuel consumption and emissions. The SPAR bridge has been designed so that it can be modified in the future to facilitate the potential extension of the LUAS from The Point to Poolbeg, should the NTA choose such a future routing. In addition, electric or other low carbon shunting vehicles will be used to interconnect, via the SPAR, between freight terminals in the southern Port Estate and the potential rail freight hub which may be developed by Iarnród Éireann in the vicinity of the North Port estate. Thus, the SPAR Bridge has been designed as a multi-modal transport bridge, rather than a conventional road bridge and will obviate the necessity to construct other footbridges/cycleways, a possible future LUAS bridge, and a rail interconnection bridge.
- The 3FM Project has also been designed and configured to comply with relevant Climate Action and Circular Economy obligations – details of the way the Project addresses both issues are set out in a separate chapter of the EIAR.

Maintain a working port during the construction works

It is a key aspect to the configuration and rationale for the 3FM Project that the proposed works are carried out in a working port which needs to continue to service the national economy throughout the construction process. The construction phasing of the 3FM Project has been designed to ensure that works do not impede the effective and safe operation of the Port during the construction period. This is a significant factor in the decision to seek a planning consent of 15 years.

2.1.1.4 Masterplan 2040 - Throughput Capacity Objectives

The throughput capacities in Masterplan 2040 are based on the objective, data-based projection that cargo volumes will continue to grow to 2040, as they have done over many decades.

The core assumption in Masterplan 2040 is that the average annual rate of growth over the 30 years from 2010 to 2040 will be 3.3%, bringing Dublin Port's throughput to 77.2 million gross tonnes.² This averaged annual rate of 3.3% compares to rates of growth over the two preceding 30-year periods period between 1950-1980 and 1980-2010 of 3.2% and 4.7% respectively (Table 1).

DPC has adjusted its 2040 capacity forecast downwards compared to the Masterplan, due to the projected permanent loss of port lands to State Services as a consequence of Brexit – the loss of these lands has reduced Ro-Ro capacity to an extent that necessitates the additional Ro-Ro facilities being provided as part of the 3FM Project. Taking account of this impact, DPC estimates that the port capacity at 2040 will now be 73.8m gross tonnes – assuming all components of the Masterplan are delivered.

Table 1 Dublin Port's, historical and projected growth rates over 30-year periods (1950 to 2040) and growth over 20 periods (1980 to 2040)

| Up to Year | 30 year average annual growth rate |
|------------|------------------------------------|
| 1980 | 3.2% |
| 2010 | 4.7% |
| 2040 | 3.3% |

| Year | Gross tonnes | Growth over previous 20 years |
|------|--------------|-------------------------------|
| 1980 | 7.9m | x 2.3 |
| 2000 | 21.0m | x 2.6 |
| 2020 | 36.9m | x 1.8 |
| 2040 | 77.2m | x 2.1 |

As outlined previously, it takes in the order of twenty years to bring major port infrastructure from the concept stage to completion and Table 1 shows that cargo volumes in each of the twenty-year periods to 2020 have roughly doubled. The Masterplan assumption of 3.3% growth per annum implies that volumes will double again in the twenty years to 2040.

The main driver for past growth in Dublin Port's cargo volumes has been population increase and economic growth. Between 1950 and 1980, the population increased from 3.0 million to 3.4 million. In the thirty years to 2010, it increased further to 4.6 million.

By 2020, it had reached 5.0 million and the CSO predicts that there will be substantial increases to 2040 and beyond (Table 2).

² Overall port volumes are measured in gross tonnes. This allows the volumes in the different unitised and non-unitised cargo modes to be aggregated into a single statistic.

It is important to note that the Masterplan 2040 capacity objectives, as originally published and when the Masterplan was reviewed in 2018, have been adjusted to take account of the subsequent allocation of North Port lands to State authorities for Brexit-related border and customs checks.

The impact of the loss of these lands for port purposes has led to an estimated reduction in 2040 capacity of 3.38m tonnes to produce a revised 2040 throughput of 73.78m tonnes³.

Table 2 Population estimates 1950 to 2020 and population projections from 2031 to 2051 ('000), (CSO, 2020)

| Year | Estimate | Projection | |
|------|----------|------------|---------|
| | | Minimum | Maximum |
| 1950 | 2,969 | - | - |
| 1960 | 2,832 | - | - |
| 1970 | 2,950 | - | - |
| 1980 | 3,401 | - | - |
| 1990 | 3,506 | - | - |
| 2000 | 3,790 | - | - |
| 2010 | 4,555 | - | - |
| 2020 | 4,977 | - | - |
| 2031 | - | 5,221 | 5,615 |
| 2041 | - | 5,433 | 6,177 |
| 2051 | - | 5,578 | 6,693 |

For its part, the National Planning Framework assumes that the population will increase to 5.7 million by 2040.⁴

As a consequence of the high level of persistent underlying growth, major economic disruptions such as the 2008 collapse or the more recent impacts of Brexit, Covid-19, and economic instability post Russia's invasion of Ukraine, manifest themselves as aberrations on the long-term growth curve (Figure 2). The primary long-term impact of Brexit on Dublin Port has been the loss of port lands which have been allocated to the State authorities for customs and border checks – representing a permanent loss of capacity.

³ This equates to the Masterplan 2040 target of 77.16m tonnes, but reduced by 3.38m tonnes to allow for the assumed permanent loss of seven hectares of freight yards to State Brexit facilities. There are currently 14 hectares of land in use for such facilities, and it has been assumed that 50% of these lands will ultimately be returned for use as transit freight storage yards.

⁴ [NPF](#), Page 24

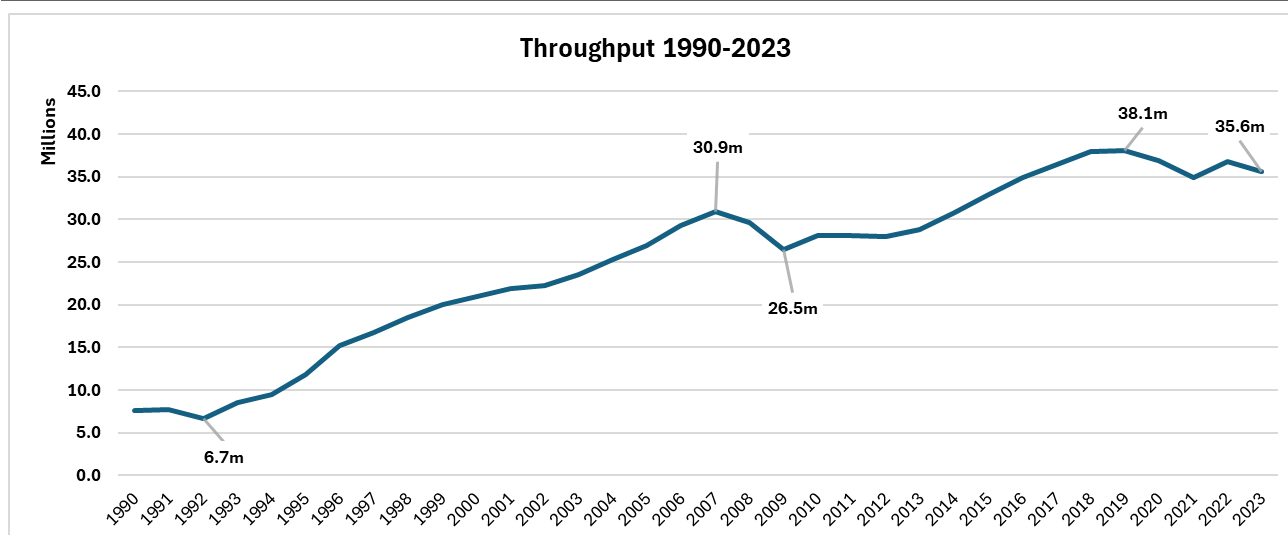


Figure 2 Trends in Dublin Port’s cargo volumes (m Tonnes), 1990 to 2023

DPC’s approach in Masterplan 2040 is to maximise the throughput on Dublin Port’s fixed brownfield land area before seeking to develop additional port capacity at another east coast location. DPC has published the detailed thinking behind this approach in the Dublin Port Post 2040 Dialogue.⁵

This analysis beyond 2040 reinforces the need to complete the development of Dublin Port as envisaged in Masterplan 2040 by now bringing forward the 3FM Project.

The 3FM Project is specifically focussed on providing capacity to cater for the unitised modes of Ro-Ro and Lo-Lo freight, where the average annual growth in the number of units (trailers and containers) over the 30 years to 2040 is assumed to be 4.1% and 3.0% respectively (Table 3).

Table 3 Masterplan 2040 volume growth assumptions by cargo mode to 2040

| | 2010 '000 gross tonnes | 2040 '000' gross tonnes | | AAGR |
|---------------------|---------------------------|----------------------------|---------------|-------------|
| | Actual | Original | Revised | Revised |
| Ro-Ro | 16,403 | 41,920 | 54,287 | 4.1% |
| Lo-Lo | 6,317 | 10,480 | 15,270 | 3.0% |
| Bulk Liquid | 4,009 | 4,000 | 4,000 | 0.0% |
| Bulk Solid | 2,054 | 3,500 | 3,500 | 1.8% |
| Break Bulk | 96 | 100 | 100 | 0.1% |
| Total tonnes | 28,879 | 60,000 | 77,157 | 3.3% |
| Ro-Ro ('000 units) | 701 | 1,737 | 2,249 | 4.0% |
| Lo-Lo ('000 units) | 377 | 635 | 926 | 3.0% |
| Totals | 1,078 | 2,372 | 3,174 | 3.7% |
| Lo-Lo ('000 TEU) | 641 | 1,080 | 1,574 | 3.0% |

⁵ Notably in [Paper 5 - The Conundrum of Planning for Long-Term Growth](#) – and in [Paper 7 - Options for the Greenfield Development of Additional East Coast Port Capacity](#).

Whereas overall port volumes are measured in gross tonnes, given that the 3FM Project is designed to provide capacity for trailers and containers in the unitised modes of Ro-Ro and Lo-Lo, it is more relevant to consider the annual capacity to be provided by the project in terms of units (for both Ro-Ro and Lo-Lo) and, at times, TEU (for Lo-Lo).⁶

Masterplan 2040 assumes that, by 2040, the number of trailers and containers that will pass through Dublin Port in the Ro-Ro and Lo-Lo modes will be 3.2 million. Adjusting for the loss of 7 ha of land to Brexit facilities in the North Port, this figure reduces to 3.0 million.

The 3FM Project is proposed to provide annual capacity for 684,000 units, or 22% of all units, by constructing two terminals:

- Ro-Ro: 360,000 units; and
- Lo-Lo: 324,000 units.

2.1.1.5 3FM Project - Unitised Throughput Capacities

The 3FM Project envisages the development of eleven parcels of Dublin Port lands on the Poolbeg Peninsula (Appendix 2-2) to, firstly, provide a total annual capacity for 684,000 unit loads (trailers and containers) and, secondly, to provide infrastructure and facilities to support the objective to re-integrate Dublin Port with Dublin City:

- Four parcels - identified as Area K, Area L, Area N and Area O – to be developed to provide additional port capacity.
- Seven areas totalling 9.6 hectares to provide public spaces to meet the Masterplan objective to integrate Dublin Port with Dublin City and to provide space for district heating⁷ and the on-shore substation of a major ORE project⁸.

The total extent of the land area to be developed in the 3FM Project is 41.5 hectares as summarised in Table 4.

Table 4 Summary of 3FM Project land areas

| Land Type | Area (ha) |
|----------------------------------|-------------|
| Port operations | 31.9 |
| Public spaces and non-port users | 9.6 |
| Total land area | 41.5 |

⁶ **Containers** come in standard lengths of 20', 40' and 45'. The TEU – or twenty foot equivalent unit – provides a common unit to allow measures of capacity to be aggregated when considering storage volumes in container terminals or the carrying capacities of container ships. The conversion factor between units and TEU used in Dublin Port is 1.7.

Trailers, on the other hand, are, for the most part, 13.6 metres long (equivalent to 45').

⁷ Separate planning application by Dublin City Council

⁸ Separate planning application by ORE project developer

The 31.9 hectares to be developed or redeveloped to provide port capacity are split into two components as shown in [Table 5](#):

- Ro-Ro terminal of 18.2 hectares with an annual capacity of 360,000 units; and
- Lo-Lo terminal of 13.7 hectares with an annual capacity of 324,000 units

Table 5 Summary of land areas and berth lengths in the 3FM Project for port operations

| Ro-Ro Terminal | |
|-----------------------|---------------|
| Area K | 12.9 hectares |
| Area O | 5.3 hectares |
| Land area | 18.2 hectares |
| Berth length | 500 metres |
| Lo-Lo Terminal | |
| Area N | 9.1 hectares |
| Area L | 4.6 hectares |
| Land area | 13.7 hectares |
| Berth length | 650 metres |

[Table 6](#) shows the expected increase in unitised freight capacity and ship numbers as a result of the 3FM Project from 2023 to 2040.

Table 6 Expected increase in unitised freight capacity and ship numbers in Area K and Area N as a result of the 3FM Project

| | Area K | | Area N | |
|--------------------------------------|----------------------|---------------|---------------|-------------|
| | 2023 | 2040 | 2023 | 2040 |
| Berthage | 710m | 500m | - | 650m |
| Berth Usage (cargo per 100 metre pa) | 34,930 teu | 72,000 units | - | 84,615 teu |
| Land Area | 14.9 ha | 12.9 ha | - | 9.1 ha |
| Land Usage (cargo per hectare) | 16,650 teu | 20,000 units | - | 40,000 teu |
| Land Capacity (cargo pa) | 248,000 teu (actual) | 258,000 units | - | 364,000 teu |
| Capacity Utilisation | 76% | 100% | - | 100% |
| Average cargo per week | 4,769 teu | 4,960 units | - | 7,000 teu |
| Ships per week | 6 | 8 | 0 | 10 |

Area K currently operates as a Lo-Lo Terminal. In 2023 six Lo-Lo ships per week utilised the berths (Berth 41-45). Under the 3FM Project, the Lo-Lo activities in the South Port Estate will be transferred to a new Lo-Lo Terminal at Area N. By 2040, ten Lo-Lo ships per week are expected to utilise the new berths at Area N.

Area K will be refunctioned as a Ro-Ro Terminal under the 3FM Project. The effective berth length will be reduced to 500m from 710m as a result of Berth 41 being transferred to the proposed Maritime Village and to make space for new Ro-Ro ramps. By 2040, eight unaccompanied Ro-Ro ships per week are expected to utilise the berths at Area K.

Area L is currently utilised for bulk cargo (Berth 46 and 47). Under the 3FM Project, a significant portion of this site will be refunctioned as a Lo-Lo Container Storage Yard. This will result in a reduction in the number of bulk cargo ships utilising the site. In 2023, an average of three ships per week utilised these berths. By 2040, it is expected that an average of one ship per week will utilise the berths as a result of the refunctioning from bulk cargo to container storage.

The net change will result in circa ten additional ships per week utilising the berths at the South Port.

The 9.6 hectares for public spaces and non-port uses include lands for public areas (4.1 hectares), an extension to the Irishtown Nature Park (1.1 hectares), Dublin City Council district heating centre (0.6 hectares), on-shore substation site for ORE project (2.0 hectares), and an expansion of the existing area occupied by rowing and sailing clubs to create a Maritime Village of 1.8 hectares (Table 7). The latter will also have 2.7 hectares of marine berthing areas.

Table 7 Summary of land and maritime areas in the 3FM Project area for non-port operations

| Areas | Size |
|---|---------------------|
| Sailing and rowing campus (Maritime Village) including berths | 1.8 hectares |
| Port Park, Coastal Park and Wildflower Meadow | 4.1 hectares |
| Extension to Irishtown Nature Park | 1.1 hectares |
| Public realm and community gain | 7.0 hectares |
| DCC District Heating area | 0.6 hectares |
| Sub-station for ORE project | 2.0 hectares |
| Total area for non-port operations | 9.6 hectares |

For the proposed new Ro-Ro terminals, Area K and Area O are 18.2 hectares in extent. Table 8 below shows the annual throughput which DPC could reasonably be expected to achieve from Area K and Area O as 360,000 units per annum.

Table 8 Capacity of Area K and Area O for Ro-Ro

| Area | Annual capacities | # | Units p.a. |
|----------------|--------------------------|------|------------|
| Berths | 200,000 units per berth | 2 | 400,000 |
| Terminal areas | 20,000 units per hectare | 18.2 | 360,000 |

To put this Ro-Ro capacity into context, the Ro-Ro throughput of Rosslare Europort and Port of Cork in 2023 were 197,583 units and 6,792 units respectively.

The key point is that land capacity at Area K and Area O is the first constraint that would be hit before berth capacity becomes an issue.

In the case of Area N and Area L (13.7 hectares), although these are separated from each other, it is intended under the 3FM Project that they would provide land capacity for the new 650m container berth to be developed

at Area N. Table 9 below compares the capacity of this berth to the land throughput capacity of Area N and Area L combined.

Table 9 Capacity of Area N and Area L for Lo-Lo

| Area | Annual capacities | # | TEU p.a. | Units p.a. |
|----------------|-------------------------------------|---------------|----------|------------|
| Berths | 100,000 TEU per 100 metres of berth | 650 metres | 650,000 | 382,000 |
| Terminal areas | 40,000 TEU per hectare | 13.7 hectares | 550,000 | 324,000 |

As in the case of the proposed Ro-Ro terminal, the limiting capacity constraint for the proposed Lo-Lo terminal is the land area available.

Area N on its own could not provide the land capacity necessary to service the capacity which the 650m berthage would provide, and, as a consequence, Area L is proposed as a transit container storage area to support Area N.

The configuration presented for the 3FM Project has significantly evolved since the project was first presented, consequent on community and stakeholder consultation and internal design modification. Most notably, the proposed use of Area O, which had originally been identified for use as a Lo-Lo transit container storage yard with stacked containers, has now been changed following engagement with the surrounding communities to a much less visually obtrusive yard for parking Ro-Ro trailers. Following a detailed public consultation process, and in the context of a consideration of alternatives, DPC recognised that the use of Area O for a transit single height Ro-Ro yard represents a more effective utilisation of the lands. To give effect to this change, Area L, which had been identified in the DPC Masterplan as land suitable for intensive cargo handling activities in the period to 2040, is now being brought forward for development as part of the 3FM Project application. A full detail of the evolution of the project and the change of Scope is set out in the Alternatives Chapter of the EIAR.

2.1.1.6 Maximising the Utilisation of Port Infrastructure and Landside Access Connections

The physical infrastructure to be provided by the 3FM Project and by other masterplan projects will only provide the capacity required by Masterplan 2040 if it can operate without capacity constraints being reached. This requires complementary measures in three areas:

- Land utilisation in Dublin Port
- Landside access
- Inland port facilities

Land utilisation

As stated earlier, DPC’s approach to the development of Dublin Port is founded upon a commitment to proper planning and sustainable development. This extends to the view that the utilisation of existing brownfield port lands should be maximised before additional port capacity is developed at a greenfield location elsewhere on the east coast of Ireland. The Poolbeg Peninsula already contains Ireland’s greatest concentration of major utility operations. The current adjacencies to the proposed 3FM Project include one of the largest sewage works in Europe, the largest incinerator in Ireland, two power stations, and the National Oil Reserve tank farms. There

are also proposed projects to locate major battery storage facilities, the main on-shore sub-station for the Codling ORE Project, and a large district heating plant for Dublin City Council.

The footprint of Dublin Port is fixed by the commitment in Masterplan 2040 not to expand the 260ha land area of the port by any further infill into Dublin Bay. Taken together with the port capacity target of 73.78⁹ million gross tonnes per annum by 2040, this sets an objective to attain a throughput of 290,000 gross tonnes per hectare per annum. This is twice the land utilisation achieved in 2019.

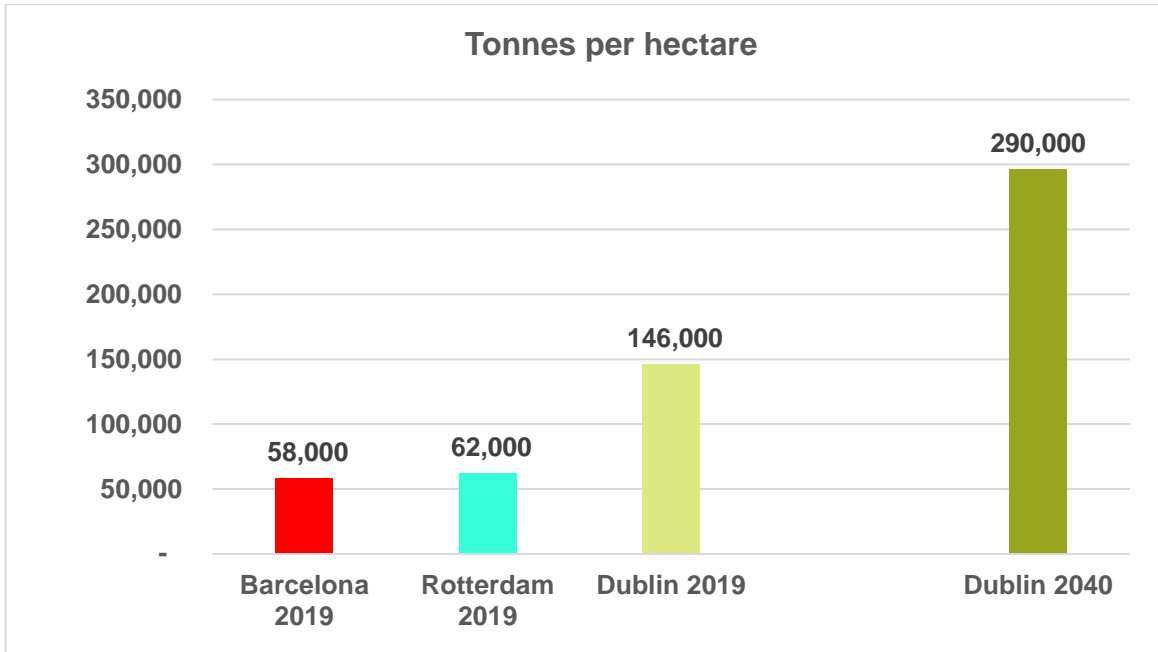


Figure 3 Port land utilisation comparisons

To put this into perspective, Figure 3 shows the land utilisation achieved in the multi-modal ports of Barcelona (58,000) and in Rotterdam (62,000) in 2019.

Whereas a doubling in land utilisation to 290,000 gross tonnes per hectare per annum over a period of 20 years is an ambitious target, there are impressive benchmarks in ports elsewhere which suggest that what is proposed is feasible. For example:

- The Port of Dover attained a land utilisation of 1.2 million gross tonnes per hectare in 2019 due to the very high proportion of Ro-Ro freight that was accompanied.
- In Valparaiso in Chile, TPS attained 1.0 million gross tonnes per hectare in 2019 in its container terminal.

These various comparisons – with Barcelona, Rotterdam, Dover and Valparaiso – show, on the one hand, that DPC’s land utilisation targets are ambitious but, on the other, that they are attainable.

Given that the land area of Dublin Port is fixed, the faster cargo moves through the port, the greater its capacity. If Dublin Port’s ambitious land utilisation targets are to be achieved, then the dwell times of trailers and containers need to be reduced. This reduction will be driven by changes in operation of logistics chains and a

⁹ This equates to the Masterplan 2040 target of 77.16m Tonnes, but reduced by 3.38m Tonnes to allow for the assumed permanent loss of 7 hectares of freight yards to state Brexit facilities.

gradual shift to 24/7 operation. We also anticipate further development of inland ports, primarily by the private sector.

DPC recognises that the intensification of land utilisation identified above can only be achieved in circumstances where the developments required to achieve these targets accord with the principles of proper planning and sustainable development. The 3FM Project Planning Application is supported by detailed environmental assessments of the impacts of the proposed development to address how impacts can be avoided or effectively mitigated.

In general, terminals in Dublin Port have historically provided too much free or low-cost storage for trailers and containers. This is an inefficiency which supply chain operators benefit from without cost to them.

However, since DPC published the Franchise Policy in 2014 and, following the initial developments at Dublin Inland Port, DPC has begun to introduce more stringent regimes in certain terminals in Dublin Port, with implementation of a significant reduction in free periods for containers and trailers in 2020. Dublin Port recognises the critical importance of ensuring that port lands are being fully utilised by encouraging the faster movement of unitised product through the port. Reducing dwell times will remain an important aspect of this initiative and already two Lo-Lo operators in the Port have implemented strict dwell time controls with free periods for import trailers reduced down to four days. The ambition is to reduce these dwell times further for all unitised operations in the port from four days, then to three, and eventually to two days. Cargo that remains past these periods will face a significant escalation of charges.

Over the coming years, DPC will continue to use economic measures to change the behaviour of supply chain operators to increase the effective capacity of Dublin Port's unitised terminals. This approach has worked elsewhere, is beginning to work in Dublin Port and will, in time, allow the land utilisation targets of the Franchise Policy to be achieved or exceeded:

- Ro-Ro: 20,000 unaccompanied units per hectare per annum; and
- Lo-Lo: 40,000 TEU per hectare per annum.

One of the direct consequences of Brexit has been a reduction in the percentage of accompanied Ro-Ro trailers and an increase in the percentage of unaccompanied ones, putting increasing pressure on freight transit yard areas.

Landside access

There are four potential capacity limits for any port:

- Channel;
- Berths;
- Land area; and
- Access.

In the case of berths and land area, the development options in Masterplan 2040 are sufficient to meet the target capacity required by 2040 of 73.78 million gross tonnes per annum, 90% of which is accounted for by the 3.0 million trailers and containers in the unitised modes of Ro-Ro and Lo-Lo.

The final factor which could limit Dublin Port’s throughput capacity is land access. Dublin Port is rail-connected, but at present 99% of all freight moves in and out of the port by HGV.

In 2022, Dublin Port, undertook an extensive Origin-Destination survey of freight movements to and from the port. This involved surveying c. 35% of all HGVs and was an update on previous surveys conducted in 2001 and 2011 (Figure 4).

Key findings were:

- 73% of the port’s HGVs have an origin or destination within 90km of Dublin Port; and
- 61% of the HGVs have an origin or destination within 40km of Dublin Port.

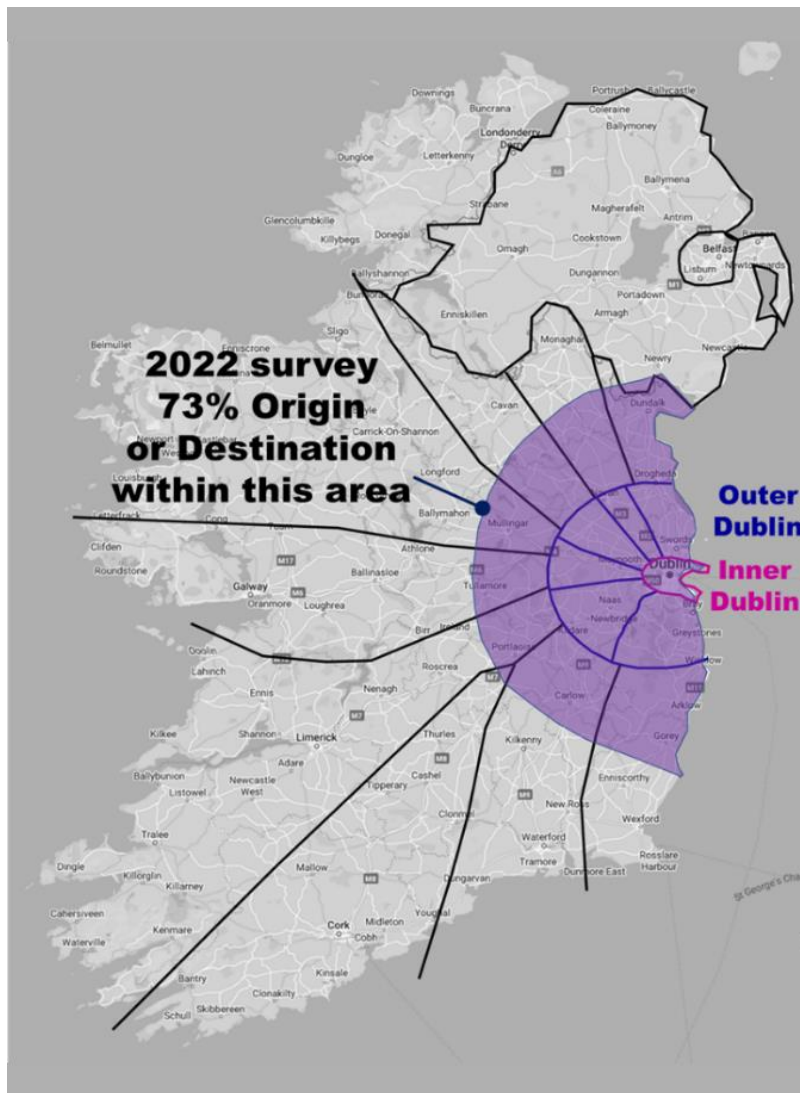


Figure 4 Percentage of Dublin Port HGVs having an origin or destination within 90km of the port

Dublin Port remains committed to investment that facilitates increased rail freight, but given the origin/destination concentration of freight in the Greater Dublin and Leinster area, the impact of rail freight on total port tonnage is likely to remain relatively low.

Dublin Port Tunnel provides the single access point for Dublin Port to the national motorway network and the port throughput capacity that Masterplan 2040 is designed to deliver must be matched by the landside access capacity both in the tunnel itself and on the motorway network. The level of detail in the 2022 Origin-Destination

survey enabled DPC to estimate how port related HGV traffic develops across the M50 as it heads to and from the Dublin Port Tunnel. Using the data, and TII's 2022 published network data for the M50, it was estimated that, across the length of the M50 from Junction 17 (M11) to Junction 3 (M1), HGV traffic to and from the port makes up 1.7% of total vehicle numbers. To put this in some context, vehicle numbers of all types on the M50 reach c. 150,000 per day at the busiest point on the network.

Inland Terminals

DPC's dwell time and digitalisation initiatives will create a demand within supply chains for inland terminals to which cargo can be moved from Dublin Port.

In parallel with progressing with the 3FM Project, DPC is proceeding with the project to develop the second site of 22 hectares at Dublin Inland Port to provide capacity for the storage of laden containers and trailers.

In addition to this, DPC anticipates private sector operators responding to the new realities in Dublin Port and to DPC's lead by developing other inland terminal facilities. Separately, Irish Rail has signalled the potential future development of inland intermodal freight terminals in its Rail Freight 2040 Strategy. Further detail on the consideration of strategic transport connectivity scenarios, including rail freight is set out in Chapter 4 of this EIAR (4.3.3)

2.1.1.7 National Port Capacity Context

The development of Dublin Port under Masterplan 2040 seeks to ensure that sufficient port capacity continues to be available over the next 20 years to cater for growth in unitised trade. Because of Dublin Port's large share of the country's unitised traffic, this is of national importance.

Dublin Port is the country's largest port for both Ro-Ro and for Lo-Lo and, when the volumes in the two modes are combined, Dublin consistently accounts for between 70% and 80% of all trailers and containers passing through Irish ports

Before Brexit, Dublin's share grew to 84% of this traffic and even post-Brexit Dublin's share remains very high at 79%.

Dublin Port's large share of unitised volumes arises for the same reasons of geography that cause Dublin Airport to account for such a large share of national air passenger travel.

In addition to having a consistently high share of all unitised freight, Dublin Port's volumes have shown consistent high levels of growth for many years ([Figure 5](#)).

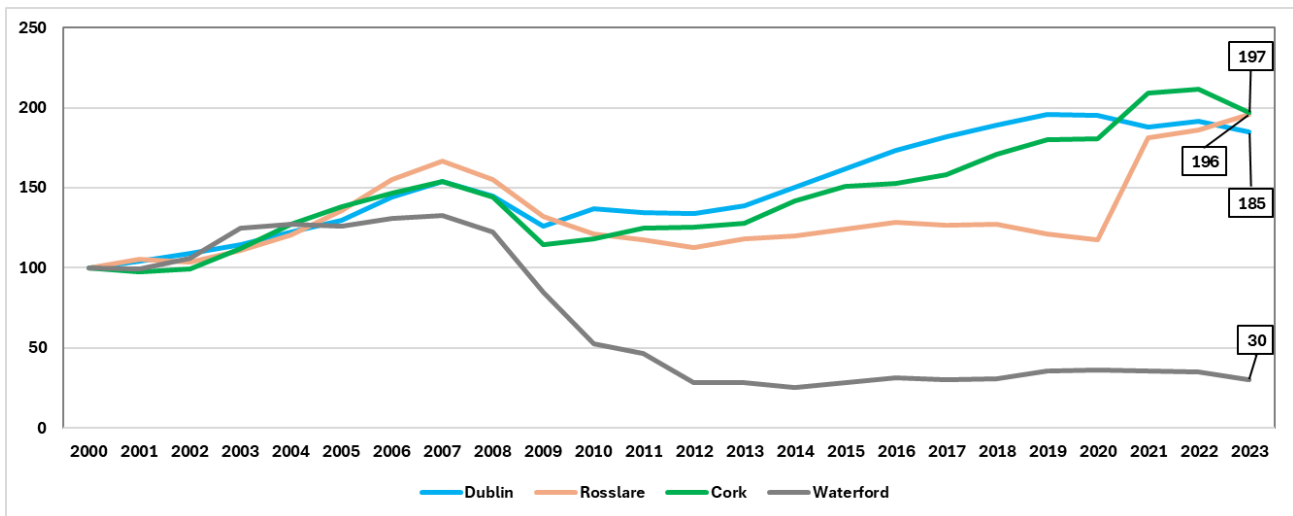


Figure 5 Trends in unutilised volumes, 2000 to 2023

Whereas the rationale for the 3FM Project is based on the projected capacity requirements in Dublin Port by 2040, the national importance of the project is recognised in the Ports Policy Issue Paper which notes that national capacity will not be assured unless all currently planned projects are delivered. This includes the 3FM Project.

Against this background, a failure by DPC to bring the 3FM Project forward would exacerbate an already evident risk of a national port capacity shortage between now and 2040.

2.1.1.8 Timescale to Deliver the 3FM Project

Based on DPC’s recent experience with constructing large infrastructure projects in Dublin Port, it is prudent to plan on it taking three years from the date of application for planning permission to the start of construction works.

In this scenario, the target commencement date for construction of 3FM would be 2027, with a completion date in 2040.

A 15-year planning permission is required, similar to the duration granted in respect of the MP2 Project. This is because of the scale and complexity of the 3FM Project and the need to ensure that Dublin Port continues to operate effectively during its construction - requiring works to be delivered in distinct phases. The delivery of large projects via a series of sub-projects is the approach specified in Masterplan 2040. A critical issue is the need to avoid significant temporary disruption in port capacity during construction of 3FM – as any such loss, even if only for a few years, could have major economic consequence.

Chapter 5 ‘Project Description’ of the EIAR and its associated Appendices contain detailed information on the overall delivery programme for the project and an indicative construction sequencing programme. Key drivers of the lengthy programme are :

- Need to create a new jetty for National Oil Reserves Agency/ ESB plus a Turning Circle in the Liffey Channel before elements of the new Lo-Lo Container Terminal at Area N can be constructed.

- Very extended construction period to deliver that new Area N Container Terminal – due to the size of this 9.1 hectare open pile structure. An open pile structure has been selected to minimise the impact on marine life and benthic resources. The scale and complexity of this construction requires over seven years alone to deliver.
- Need to complete Area N, so as to then be able to relocate container handling operations from the existing MTL Terminal to this new area, before work can then begin on the southern viaduct section of the SPAR, the Maritime Village, and development of Area K.
- Need to deliver Maritime Village construction over a number of phases.
- The proposed Ro-Ro Terminal Yard at Area O and the proposed Lo-Lo Terminal Yard at Area L will be used for landside and marine construction logistics for up to the first 10 years of the 3FM project duration. They can only then be developed for their final 3FM use.
- Allowance for necessary time to secure additional related consents such as Dumping at Sea Permit – based on experience from Dublin Port’s previously granted SID permissions for the ABR and MP2 projects.

The consequence of the above is that the indicative project delivery programme shows significant works to be completed after Year 10 – including elements of the SPAR, Maritime Village, Area K, Area O, Area L, and Port Park.

The environmental appraisals presented in this EIAR have taken into account the environmental implications of a 15-year permission and conclude that there is no environmental impediment to the granting of a 15-year permission. A summary is presented below:

- The 3FM Project is the third and final Strategic Infrastructure Development (SID) project at Dublin Port from the Dublin Port Masterplan 2040, reviewed 2018. The environmental appraisals have been undertaken within the context of the Strategic Environmental Assessment (SEA) prepared for the Dublin Port Masterplan which is based on an assessment of incremental time periods from 2018 to 2040.
- In particular, the traffic and transportation appraisal considers a combination of port traffic growth and construction traffic volumes over a 15-year period. These combined traffic volumes have been used in the environmental appraisals for noise, air quality and human health.
- The 3FM Project is focussed on the redevelopment of brown-field sites within the existing Dublin Port Estate. There are no terrestrial habitats, flora & fauna of conservation value within the application boundary of the site. Prolonged construction activities over a 15-year period will therefore have no impact on terrestrial biodiversity, flora & fauna as no natural changes are expected within that period of time.
- The 3FM Project has been engineered to ensure that any potential impact on the surrounding Natura 2000 sites is at a de minimis level. The construction period of 15-years has been assessed in the biodiversity, flora & fauna appraisals.

2.1.2 Conclusions

Masterplan 2040 sets the objective for Dublin Port Company (DPC) to provide the cargo handling capacity required in Dublin Port by 2040. The 3FM Project will provide the final tranche of capacity (20%) needed for the volumes of Ro-Ro and Lo-Lo freight to meet this objective.

The project would also contribute to the second objective of Masterplan 2040 – to integrate Dublin Port with Dublin City – in three ways:

- Creating large new areas in the public realm on the Poolbeg Peninsula.
- Creating active travel corridors through the Poolbeg Peninsula and connecting these across the River Liffey to link into active travel networks on the north side of Dublin Port.
- Removing all port-related HGV traffic from public roads in the vicinity of Dublin Port on both sides of the River Liffey.

The project would also provide certainty that DPC can deliver the port capacity needed in Dublin Port – the largest port in the national port system – within the shared timeframes of Masterplan 2040 and the National Planning Framework.

The need for the 3FM Project has been identified in assessments carried out by DPC, but also echoed in a range of national assessments and reports commissioned to review national port capacity. A failure to proceed with the 3FM Project will adversely impact on national port capacity for unitised freight and will frustrate a range of different objectives set out in EU, national, regional and local policies.

2.2 Spatial Planning Policy

2.2.1 Relevant European Planning and Development Policy

2.2.1.1 Trans-European Transport Network (TEN-T)

The Trans-European Transport Network (TEN-T) is comprised of critical transport infrastructure across the European Union. The infrastructure of the TEN-T network consists of the infrastructure for railway transport, inland waterway transport, road transport, maritime transport, air transport and multimodal transport and relates to railway lines, roads, inland waterways, maritime shipping routes, ports, airports and railroad terminals. The components of the TEN-T network and infrastructure requirements across the network are set out in Regulation (EU) 1315/2013¹⁰, known as the “TEN-T Regulation”. A proposal for a revision of the TEN-T policy was tabled in December 2021, aiming to create better alignment with the European Green Deal, and the Sustainable and Smart Mobility Strategy. An amended proposal was made in July 2022 by the European Commission in response to the Russian invasion of Ukraine, proposing the extension of four corridors to Ukraine and Moldova to accelerate change toward a standard European railway gauge, promoting European integration.

The network is made up of the Comprehensive Network and a sub-set of infrastructure designated as the Core Network. The Core Network is the most strategically critical part of the system. Transport infrastructure in the Core Network is required to be completed to the standard set out in the TEN-T Regulation by 2030 at the latest. The Comprehensive Network is a wider chain of infrastructure which the TEN-T Regulation requires to be completed by 2050.

Dublin Port is a Core Port of the TEN-T network and is a designated node on the Atlantic and North Sea-Mediterranean Core Network Corridors. The TEN-T programme envisages coordinated improvements to European transport infrastructure thereby creating integrated and intermodal long-distance, high-speed corridors. ‘Motorways of the Sea’ are considered the maritime pillar of the TEN-T network and contribute towards realising a European maritime transport space without barriers, connecting Core Network Corridors by integrating the maritime leg and also facilitating maritime freight transport with neighbouring countries.

White Paper: Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system

This White Paper from the European Commission builds upon a 2001 White Paper on Transport, examining how the EU might achieve its greenhouse gas emissions reductions, specifically focusing on transport. It was adopted in 2011, in the context of the European Union’s 2020 Growth Strategy. The vision described spans a 40-year period, up to 2050, with interim goals for 2020 and 2030. The Paper aims to reduce transport emissions by 60% by 2050, while growing the sector, stating that “curbing mobility is not an option” (page 5) given the interconnected and globalised nature of the EU economy and single market. A strong emphasis is placed on moving vast quantities of goods and passengers at once, avoiding individual transport methods until the final miles of the journey. Infrastructure investment is a prominent feature, highlighting that investment cannot be delayed owing to the significant time lag between commencement and delivery, in addition to lengthy service

¹⁰ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02013R1315-20190306>

lives of stock such as trains and ships. Ports are highlighted as being a crucial agent in decarbonisation of freight, enabling more efficient waterborne transport, serving as important entry points into the European market.

European Green Deal

In December 2019, the European Commission presented the European Green Deal (EGD), a policy package that aims to improve the sustainability of the EU's economy, by turning environmental challenges into opportunities across several policy areas. EU leaders agreed that the EU should achieve carbon-neutrality by 2050.

In December 2020, as an intermediate step towards the 2050 goal, EU leaders agreed to more than (55%) halve (compared to 1990 levels) the EU's greenhouse gas emissions by 2030, as set out in the Climate Action Plan 2030.

In June 2021, the Council adopted the European climate law – a key element of the EGD. With it, EU countries are legally obliged to reach both the 2030 and 2050 climate goals. The climate law sets the framework for actions to be taken by the EU and the member states to progressively reduce emissions and ultimately reach climate neutrality in the EU by 2050. At this time the Council also endorsed the new EU strategy on adaptation to climate change presented by the Commission. The strategy outlines a long-term vision for the EU to become a climate-resilient society that is fully adapted to the unavoidable impacts of climate change by 2050. Within the EGD is a proposal to revise the Combined Transport Directive (TEN-T) to allow for better utilisation, including rail and waterborne transport, short-sea-shipping (transportation by sea between EU/EEA/Candidate countries' ports). The EGD includes a target to reduce transport-related greenhouse gas emissions by 90% by 2050. The Sustainable and Smart Mobility Strategy will give certainty of direction and show a roadmap towards the mobility of the future. The Strategy will build on the EGD, the 2030 Climate Target Plan and the evaluation of the 2011 White Paper - Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system.

Marine Spatial Planning Directive (2014/89/EU)

In 2014 the adoption of Directive 2014/89/EU established an EU-wide framework for maritime spatial planning. Ireland transposed the Directive through the European Union (Framework for Maritime Spatial Planning) Regulations 2016. The Minister for Housing, Local Government and Heritage formally established the National Marine Planning Framework (NMPF) on 20th May 2021.

As a result of this directive, several legislative changes have been made with regards to marine spatial planning in Ireland. The Maritime Area Planning Act 2021 was introduced, updating the Irish planning system to facilitate increasing development demand in the maritime environment. This Act introduces statutory bodies, including the Marine Area Regulatory Authority (MARA).

2.2.2 Relevant National Planning and Development Policy

2.2.2.1 Project Ireland 2040

By 2040, there is projected to be approximately one million additional people living in Ireland. This population growth will require new jobs, new homes, heightened cultural, and social amenities, enhanced regional connectivity and improved environmental sustainability. Project Ireland 2040 sets out to deliver these.

The National Planning Framework (NPF) and the National Development Plan 2021-2030 (NDP) combine to form Project Ireland 2040, which is accompanied by the National Marine Planning Framework (NMPF), a maritime equivalent to the NPF. The NPF sets out Government's vision and strategy for the development of Ireland to 2040. The NMPF delivers a clear policy context for managing Ireland's territorial waters. While the NDP provides the enabling investment and capital expenditure projections to implement these strategies. In combination, these plans form Project Ireland 2040, which when executed will bring about improvements and growth to support a growing country.

2.2.2.2 National Planning Framework

The NPF, published in July 2018, is the primary articulation of spatial, planning and land use policy in Ireland. It is the uppermost policy in the Irish planning hierarchy, from which subsequent policies and frameworks are derived. The framework recognises the vital role ports play in supporting the Irish economy stating:

"As an island nation, we depend on the quality and efficiency of our ports to a far greater extent than many of our trading partners. To maintain economic growth, we must be capable of delivering additional port capacity in a timely and predictable manner". (page 102)

The framework recognises National Ports Policy stating:

"National ports policy requires Tier 1 and Tier 2 ports, or ports of national and regional significance, to lead the response in meeting Ireland's future port capacity requirements. There are major redevelopment projects taking place at our Tier 1 ports (i.e. Dublin, Cork and Shannon-Foynes) at present. These developments will result in a greater concentration of traffic through these ports, with implications for shore-based and marine-based infrastructure.

The long-term international trend in ports and shipping is toward increased consolidation of resources in order to achieve optimum efficiencies of scale. This has knock-on effects in terms of vessel size, the depths of water required at ports and the type and scale of port hinterland transport connections.

Tier 1 ports are located within close proximity to Dublin, Cork and Limerick and the role of these ports will be considered and addressed in tandem with long-term infrastructural requirements as part of the relevant Regional Spatial and Economic Strategy and concurrent and subsequent metropolitan area or city/ county development plan processes". (pages 102-103)

The NPF provides a set of growth enablers, National Strategic Outcomes (NSO) and National Policy Objectives (NPO) with which regional and local planning policy must align.

NPO 40 states:

"Ensure that the strategic development requirements of Tier 1 and Tier 2 Ports, ports of regional significance and smaller harbours are addressed as part of Regional Spatial and Economic Strategies, metropolitan area and city/county development plans, to ensure the effective growth and sustainable development of the city regions and regional and rural areas". (page 103)

NSO 6 outlines "High-Quality International Connectivity". The framework notes that, nationally, infrastructure objectives have been identified to improve land transport connections to the major ports. Infrastructure requirements pertaining to Dublin Port are identified as:

“Facilitating the growth of Dublin Port through greater efficiency, limited expansion into Dublin Harbour and improved road access, particularly to/from the southern port area”. (page 37 & 145)

Considering the wide scope of the 3FM Project, other policy areas of importance warranting enhanced consideration include provisions for improved connectivity and infrastructure, promoting active travel and improving social and cultural facilities and opportunities, all of which combine to see communities supported and bettered.

NPO 27 states:

“Ensure the integration of safe and convenient alternatives to the car into the design of our communities, by prioritising walking and cycling accessibility to both existing and proposed developments, and integrating physical activity facilities for all ages.” (page 82)

Similarly, it is identified within the NPF that the “expansion and improvement of the bus, DART and Luas/Metro” in Dublin is “critical to Ireland’s competitiveness” (page 36).

National Strategic Investment Priorities are derived from the NSOs, within which are significant crossovers with the aims of the 3FM Project, including environmentally sustainable public transport, airports, ports, culture, heritage and sport.

The Minister for Housing, Local Government and Heritage announced on 20th June 2023 that the process to undertake the first revision of the NPF has commenced . A Roadmap will be published outlining the process and timeline for this revision. The revision will be informed by Census 2022 and will attempt to address issues arising due to prevailing social and economic trends. This process was subsequently deferred by Government on 5th March 2024 to allow for better data to be garnered from Census 2022.

The Draft First Revision to the National Planning Framework (Draft NPF) was published for public consultation on 10th July 2024. The Draft NPF continues to recognise and support the National Ports Policy and acknowledges the importance of Ireland’s ports. Much of the current NPF has been carried forward to the Draft NPF, and includes NSO 4 (NSO 6 in the current NPF), NPO 51 (NPO 40 in the current NPF) and key future growth enablers for Dublin.

The Draft NPF also continues to promote modal shift, active travel and improving social facilities.

Submissions regarding the Draft NPF are being accepted between 10th July 2024 and 17:00 on 12th September 2024. Submissions will inform the revised NPF.

2.2.2.3 National Marine Planning Framework

Marine Spatial Planning (MSP) in Ireland is underpinned at the highest level by the European Marine Spatial Planning Directive (Directive 2014/89/EU) (MSPD). Ireland's first marine spatial plan, National Marine Planning Framework (NMPF), published in June 2021, serves as a parallel to the NPF, and enables the Government to set a clear direction for managing Irish seas, clarify objectives and priorities and direct decision makers, users and stakeholders towards strategic, plan-led, and efficient use of marine resources. The NMPF has been prepared with an ecosystem-based approach and has been informed by best available knowledge.

With respect to Key Issues for Marine Planning the NMPF states that:

“Ports and shipping are the country’s trading lifeline. Safeguarding access to ports, harbours and navigation channels is vital to the national economy. The safety and security of shipping and ports must be taken into consideration when considering all other applications for activity or development in the vicinity of ports or shipping channels. Consideration within proposals of features of importance in areas of shipping as well as within port and harbour jurisdictions can be enhanced through reference to the most up to date nautical charts.

Brexit has brought into renewed focus the importance of Ireland’s ports as nodes in the logistics chain and in keeping Ireland connected internationally. As the economy grows, the ability of our ports to respond by adding capacity and adjusting to new environmental and technological demands is imperative to ensure the sustainability of our economic success. Marine development should not be permitted where it would restrict access to, or future expansion of, commercial ports or the development of new ports, which may be needed in the future.” (page 154)

The NMPF recognises that all Tier 1 ports are currently engaged in significant phases of infrastructure investment in relation to their masterplans. The framework states:

“Dredging is essential to maintain channels and deepen berths especially as the sector is moving to ever-larger ships with greater capacity. Dredged material may be disposed of at marine sites licensed by the EPA or, if possible, used for alternative purposes such as land reclamation or beach nourishment to minimise disposal at sea. Locations of disposal sites may change over time for a variety of reasons, for example the exhaustion of site capacity, monitoring requirements, or the need for new sites in additional locations. Designated areas are required to dispose dredged material to ensure that ports subject to silting can be kept operational and maintain their depths, in particular when urgent dredging is required after storm activity. Identification of new dredge disposal sites should be supported by robust feasibility and site selection, and should include a review of existing sites in the context of climate adaptation.” (page 155)

In terms of growth the NMPF states:

“Freight volumes are expected to continue to increase over the coming decades, while vessel sizes are also predicted to grow and vessel types set to further diversify. In this context accessibility, capacity and navigational safety will be significant challenges for all players and port development will trend seawards. Allocation of sufficient space for future growth, the strategic identification of long-term port locations and development of existing ports all need to be factored into long-term economic and spatial planning (terrestrial and marine).” (page 155)

With respect to interactions with other activities the NMPF notes that all marine sectors rely on ports and shipping activities. It observes inter alia that integration and alignment is needed between terrestrial and marine planning processes to ensure that ports link with public transport to encourage sustainable travel, where it is financially viable to do so, and terrestrial planning should co-ordinate with and support ports with the necessary transport links and suitable road networks. (page 156)

Ports, Harbours and Shipping objectives include:

- *“Safeguard the operation of ports as key actors in the economic wellbeing of the State through the provision of safe and sustainable maritime transport.*
- *Facilitate a competitive and effective market for maritime transport services.*

- *Sustainable development of the ports sector and full realisation of the National Ports Policy with a view to providing adequate capacity to meet present and future demand, and to adapt to the consequences of climate change.*
- *Ensure that the strategic development requirements of Tier 1 and Tier 2 Ports, ports of regional significance, and smaller harbours are appropriately addressed in regional and local marine planning policy”. (page 150)*

The NMPF seeks to ensure that all activities and required infrastructure and maintenance efforts are supported and uninterrupted by other maritime development, owing to the national strategic importance of Irish ports, especially Dublin Port, given that it accounts for almost 50% of all trade in the State.

2.2.2.4 National Development Plan

The implementation of the NPF will be fully supported by the Government’s investment strategy for public capital investment. The National Development Plan 2021-2030 (NDP) identifies the strategic priorities for public capital investment in order to underpin the implementation of the NPF and NMPF.

The NDP identifies strategic priorities for public capital investment in order to underpin the implementation of the NPF and NMPF.

The NDP highlights several road projects that were proposed under previous NDP that are subject to further approvals, which explicitly includes “M50 – Dublin Port South Access Road”.

NSO 6 “High-Quality International Connectivity” seeks to target continued investment in port and airport connections to the UK, EU and the rest of the world. Given that Ireland is an island, this is considered by the NDP to be integral to underpinning Ireland’s international competitiveness. The NDP notes that major capital infrastructure programmes are currently ongoing in Tier 1 Ports, namely Dublin, Cork and Shannon Foynes. These will enhance national and international connectivity, provide for future increases in trade and national port capacity requirements by facilitating more vessels, larger sized vessels and increased tonnage and throughput. The NDP adds that none of these projects receive exchequer funding. However, strengthening access routes to Ireland’s ports through investment to upgrade and enhance the transport network to improve journey times is and remains a government priority.

The NDP outlines the importance of investing in cultural projects, with the Department of Tourism, Culture, Art, Gaeltacht, Sport and Media leveraging its sectoral remit to improve citizen wellbeing. This is an underpinning principle of improving communities and social cohesion.

2.2.2.5 National Ports Policy

The National Ports Policy is the statement of domestic policy underpinning the development and operation of Ireland’s ports. Ports are divided into Ports of National Significance (Tier 1), Ports of National Significance (Tier 2) and Ports of Regional Significance.

Within the National Ports Policy, Dublin Port is a Port of National Significance (Tier 1), where Tier 1 ports are responsible for 15% to 20% of overall tonnage moved through Irish ports annually (of which Dublin Port handles 44%), and which have clear potential to lead the development of future port capacity in the medium and long term.

Referring specifically to the Dublin Port Masterplan, which includes the 3FM Project, the policy confirms that:

“The Government endorses the core principles underpinning the company’s Masterplan and the continued commercial development of Dublin Port Company is a key strategic objective of National Ports Policy”. (page 25)

The policy highlights that the relationship and interaction between the commercial ports sector and the planning and development system is extremely important in ensuring continued sustainable development of the ports sector. It continues that:

“The provision of adequate and efficient capacity into the future is a crucial Government strategic objective”. (page 43)

To this end the policy states:

“Therefore, Government expects the Ports of National Significance (Tier 1) to lead the response of the State commercial ports sector to future national port capacity requirements.....It is the Government’s position that those ports considered to be of national significance must be capable of the type of port capacity required to ensure continued access to both regional and global markets for our trading economy”. (page 44)

With respect to the planning policy hierarchy the policy confirms:

“National and Regional Planning Guidelines should also recognise the importance of the three categories of ports and allow for their continued development. To this end, the Department contributes as necessary to the development of Regional Planning Guidelines in order to ensure that the goals of National Ports Policy are recognised in the planning hierarchy”. (page 45)

To this end, the Department contributes as necessary to the development of Regional Planning Guidelines in order to ensure that the goals of the National Ports Policy are recognised in the planning hierarchy, highlighting the important role that ports play both regionally and nationally.

2.2.2.6 Review of National Ports Policy 2013 – Issues Paper

On 19th October 2023, the first phase of public consultation was announced for the Review of the National Ports Policy. The consultation was based on an issues paper that was published alongside the commencement of the public consultation period. The public consultation period ended on 15th January 2024, and the results will inform a revised National Ports Policy, which is estimated to be issued as a draft in Q4 2024 for consultation, followed by final adoption in Q1 2025.

The issues paper that guided the consultation covers many different aspects worth considering when drafting a revised National Ports Policy including the challenges posed by events such as Brexit, COVID-19, and the Russo-Ukrainian conflict.

2.2.2.7 Irish Ports Capacity Study

The Irish Ports Capacity Study assesses the capacity within the national context, as is required per the National Ports Policy. The study considers demand, capacity, connections and risks associated with the Tier 1 ports, Tier 2 ports, identified ports of regional significance and relevant ports in Northern Ireland.

The analysis takes into account estimated demand and capacity of the identified ports and considers whether there is sufficient capacity to meet the needs of Ireland’s industry and commercial activities.

2.2.2.8 Climate Action Plan 2024

The Climate Action Plan 2024 (CAP24) is the third revision to the series of national climate action plans. CAP24 builds upon previous iterations and details a roadmap to reduce Ireland's emissions by half by 2030 and to net-zero no later than 2050. Measures such as carbon budgets and sectoral emissions ceilings are included to aid in achieving Ireland's emissions targets. CAP24 underpins many other policy documents, ensuring that emissions reductions are encompassed throughout, such as the identification of the role of enhanced spatial and land use planning as a means to reduce emissions through well-connected consolidation of activities.

CAP24 was issued for public consultation on 21st February 2024, which closed for public comment on 5th April 2024. Following this consultation, CAP24 was approved by Government on 21st May 2024, superseding the Climate Action Plan 2023.

Under CAP24, a key element relates to emission reductions in the transport sector. It is noted that the transport sector must reduce its emissions to remain within the stipulated carbon budget of 54 MtCO₂eq. (2021 to 2025) (page 233). Among the key actions identified are enhanced rail connectivity to ports and the improvement of public transport and active travel infrastructure.

2.2.2.9 Ireland's Road Haulage Strategy 2022–2031

This strategy focuses on generating efficiencies and improving standards, while helping to create secure employment and assisting the sector to move to a low-carbon future. This strategy sets out the measures and supporting policies which are needed to deliver on these objectives, in particular for decarbonisation and in developing the skills base to ensure the long-term viability of the industry.

2.2.2.10 National Sustainable Mobility Policy

The National Sustainable Mobility Policy (NSMP) is the national policy setting out a strategic framework for both active travel and public transport, which supports Ireland's commitment to reducing carbon emissions by 51% by 2030. The policy sets out support for safe and sustainable travel modes, by shifting to a people-based-focus.

2.2.2.11 National Cycle Network Plan

This plan sets out an inter-urban cycle network (incorporating the regional and national greenways network, as appropriate), with a view to enabling greater levels of cycling and walking amongst leisure users, tourists, and commuters. The National Cycle Network represents a step-change in active travel infrastructure in Ireland. The provides a phased programme that will see the delivery of approximately 3,500km of cycle facilities by 2040.

2.2.2.12 Draft All-Island Strategic Rail Review

The All-Island Strategic Rail Review (the Review) is a joint project between the Department of Transport in the Republic of Ireland and the Department for Infrastructure in Northern Ireland. The purpose of the report is to inform all future development of the railway network on the island in a cohesive manner between now and 2050. The Review was initially launched in 2021, however the publishing of the draft report was subject to delays owing to the absence of the Northern Irish Executive. The draft report was published for public consultation on 25th July 2023.

The draft Review notes that current modal share for rail in terms of freight total tonne kilometres is just 1%. It is considered that the Island of Ireland could support up to 10% modal share by rail for freight, when looking to other European states with comparable conditions.

2.2.2.13 Planning Policy Statements

Planning Policy Statement

The Planning Policy Statement (PPS) outlines the principles on which the Irish planning system operates. It was published in 2015 by the Department of the Environment, Community and Local Government.

Marine Planning Policy Statement

The Marine Planning Policy Statement (MPPS) underpins the Marine Planning system in Ireland. It was published in November 2019 and accompanies the Planning Policy Statement (PPS) which relates to the terrestrial planning system. The MPPS sets out an outline for an Irish marine planning system that will adequately protect the marine environment, enable appropriate development in marine areas and meet EU obligations in relation to marine planning. Additionally, it describes the need for a planning enforcement system at a marine level. Arising directly from the MPPS is legislation such as the Marine Area Planning Act 2021, which addresses the objectives set out in the MPPS.

2.2.3 Relevant Regional Planning and Development Policy

2.2.3.1 Regional, Spatial and Economic Strategy for the Eastern and Midland Region

The Regional, Spatial and Economic Strategy (RSES) for the Eastern and Midland Region including the Metropolitan Area Spatial Plan (MASP) for Dublin was published in June 2019 and finalised in January 2020. The RSES is a strategic plan and investment framework to shape the future development of the region to 2031 and beyond.

2.2.3.2 Transport Strategy for the Greater Dublin Area, 2022 to 2042

The Transport Strategy for the Greater Dublin Area, 2022 to 2042, prepared by the NTA sets out how transport will be developed across the Greater Dublin Region (covering Dublin, Meath, Wicklow and Kildare) up to 2042 (GDA Transport Strategy).

The strategy has been developed to be consistent with the spatial planning policies and objectives set out in the RSES. These objectives in turn are consistent with the NPF and the NDP as set out in Project Ireland 2040. This strategy is also based on national policies on sustainability as set out in climate action and low carbon legislation, and in climate action plans.

The strategy highlights that Dublin Airport and Dublin Port are two of the most important economic assets in the state. It acknowledges that it is the responsibility of the NTA, through this strategy, to ensure that the landside transport network meets the requirements of these international gateways. In relation to Dublin Port, while the volumes of passenger trips generated are significantly lower than those generated by the Airport, they are of primary economic importance. The location of the port is also a factor which places additional emphasis on the need to cater appropriately for goods vehicles. This strategy incorporates additional road access for the South Port, protection of the national road network, public transport, HGV management and demand management

measures across the city-region which will facilitate more efficient operations of Dublin Port, in tandem with the requirements of the wider city. Additionally, there is a requirement for Dublin Port to be fully integrated into the regional transport system in order to facilitate passengers who wish to travel by ferry without the use of a private car.

2.2.3.3 Sustainable Freight Distribution Framework: Greater Dublin Area (GDA)

The Sustainable Freight Distribution Framework: Greater Dublin Area (SFDF) was published by the NTA in November 2022 and sets out an approach to develop a strategy for “the efficient, safe and sustainable movement of goods based around the following key themes; Stakeholder Engagement, Freight Data, Infrastructure, Technology & Decarbonisation and, Operational & Planning Considerations”.

2.2.3.4 Greater Dublin Area Cycle Network Plan

The Greater Dublin Area Cycle Network Plan complements the GDA Transport Strategy and was published in 2013. The network forms a key component of the overall transport network for the region. Covering the full Greater Dublin region, it sets out a comprehensive cycle network for development during the period of the GDA Transport Strategy. The proposed network has comprehensive cycling infrastructure covering key routes throughout the city centre. Some secondary routes pass through Port lands, or adjacent streets. The plan is currently undergoing a revision process, and a draft publication has been produced for consultation purposes . Consultation feedback informed updates to the draft plan, which is currently being considered by the Minister for Transport.

2.2.4 Relevant Local Planning and Development Policy

2.2.4.1 Dublin City Development Plan 2022-2028

The Dublin City Development Plan 2022-2028 (the Development Plan) is the primary statutory land-use planning policy document guiding development within Dublin City. Dublin Port is wholly situated within the boundaries of Dublin City. The Development Plan is emphatically supportive of the role that Dublin Port plays in the city and the country.

Green Infrastructure and Recreation

The Development Plan identifies natural assets as an “*essential resource for conserving biodiversity and for creating a healthy, low carbon, resilient and connected city*” (page 302). Spaces that are considered natural assets include parks, open space, the coastline and riversides. Historically within the Dublin City Council administrative area, there has been a lack of green space owing to a long past of urbanism and development. As a result, the Development Plan ensures that existing open space and natural assets are protected, and supported to improve and expand where appropriate, in addition to requiring more green infrastructure in new developments.

Dublin City Council has identified a strategic approach to managing green space, pursuing a network-based approach where possible, which “*can secure a spectrum of environmental, social, and economic benefits for the city thereby, contributing to urban sustainability, climate resilience and providing a good quality of life for people*” (page 305).

Strategic Development Regeneration Area

Chapter 13 – Strategic Development Regeneration Areas provides policy and objectives to target specific areas within the city for regeneration designated as Strategic Development Regeneration Area (SDRA). SDRA 6 Docklands is approximately 520ha and covers a visually and culturally significant area of the city. The SDRA covers southern port lands also. Within the SDRA, are two separate Strategic Development Zones (SDZ) – North Lotts and Grand Canal Dock and Poolbeg West. SDZs are governed by Planning Schemes with respect to planning decisions, which supersede the Development Plan. Areas within the Docklands SDRA that are not covered by the SDZs are instead directed by guiding principles set out in the Development Plan.

Transport & Movement

The Development Plan provides for new street/road infrastructure and improvements to existing streets/roads which will be required over the period of the plan. These are required to improve the efficiency and safety of the street/road network or to open up areas for development. The Plan highlights that new bridge infrastructure will also facilitate the continued development of the city such as the Dodder Public Transport Bridge, which is linked to development of the Poolbeg West Strategic Development Zone (SDZ) and pedestrian/cycle bridges, which will improve connectivity between the north and south docklands areas.

The Plan states that the Port Tunnel is a road traffic tunnel which forms part of the M50 motorway and serves as a key route for heavy goods vehicles (HGVs) travelling to and from Dublin Port. Dublin City Council, working together with Transport Infrastructure Ireland, recognises the need to safeguard the structural integrity of the existing Port Tunnel from developments. Other road projects in addition to SMT30 are listed under SMT027 and include Sean Moore Road, bridge from North Wall Quay at Point Depot (Point Bridge) and the widening of Tom Clarke Bridge.

Land Use Zoning

Map F of the Development Plan indicates the land use zoning objectives pertaining to the development site and include Z7 – Employment (Heavy), Z9 – Amenity/Open Space Lands/Green Network and Z14 - Strategic Development and Regeneration Areas (SDRAs). The Development Plan also lists uses that are permissible and non-permissible within each zone. There will be a presumption against uses not listed under the permissible or open for consideration categories in zones Z1, Z2, Z6, Z8, Z9, Z11, Z12 and Z15. Other uses will be dealt with in accordance with the overall policies and objectives in this plan.

The Development Plan clarifies that certain small areas of land within the city are unzoned or not covered by a specific zoning objective. These lands are illustrated in white on the zoning maps accompanying the plan and usually correspond with the location of the city's roads, bridges, train lines, or other key infrastructure installations. Development proposals in respect of these unzoned lands will be considered in accordance with the policies and objectives of the plan. Regard will also be had to their compatibility with adjacent land-uses and zonings.

Built Heritage

The Development Plan highlights that there are several issues facing the city regarding built heritage, such as the need to balance competing demands between the needs of a modern city in terms of growth and the protection of the city's character. Policy BHA33 of the Plan states:

“Dublin Port Heritage Quarter: To support the vision of the Dublin Port Company for the Flour Mill and surrounding heritage assets of the port to deliver a new cultural heritage quarter and maritime museum for the city, that documents Dublin’s rich maritime history and the social history of the Dock workers.” (page 376)

The Development Plan states that works to a protected structure must be of the highest standard and demolition of a Protected Structure, including structures within its curtilage is only permissible *“in exceptional circumstances”*.

SEVESO Directive Sites

Map F of the Development Plan identifies the locations of ‘Seveso’ designated sites. Appendix 8 of the Development Plan provides a list of Seveso sites in the city including their respective consultation zone. Activities are listed in an ‘Upper Tier’ and others in a ‘Lower Tier’. Those on the Poolbeg Peninsula include:

Upper Tier

- National Oil Reserves Agency Ltd./ NORA, Shellybanks Road, Ringsend, Dublin 4 (300m from perimeter).
- National Oil Reserves Agency Ltd., Poolbeg Tankfarm, Pigeon House Road, Dublin 4 (300m from perimeter).

Lower Tier

- Synergen Ltd. t/a ESB Dublin Bay Power, Pigeon House Road, Ringsend, Dublin 4 (300m from perimeter).

Development Management Standards

The development management guidelines specific to Dublin Port outline a number of considerations with which the planning authority examine during the assessment of proposals within Dublin Port. The Development Plan is relevant in terms of assessing whether the proposed development is consistent with the proper planning and sustainable development of the area in which it is proposed to be located. The key strategic policies and objectives of Dublin City Council considered relevant to this proposed development relate to endorsing the improvement of port infrastructure in order to facilitate economic growth and policies relating to the protection of the natural and built environment.

The North Lotts and Grand Canal SDZ Planning Scheme

The North Lotts and Grand Canal SDZ Planning Scheme was approved by An Bord Pleanála on 16th May 2014 and includes lands adjacent to Dublin Port to the west. The proximity of Dublin Port to the Planning Scheme lands and the opportunity to maintain the maritime character of the area and integrate better with Dublin Port is recognised in the Planning Scheme.

Poolbeg West SDZ Planning Scheme

The Poolbeg West SDZ Planning Scheme has been prepared on foot of the Planning and Development Act 2000 (Designation of Strategic Development Zone: Poolbeg West, Dublin City) Order 2016. The Planning Scheme for the SDZ, including modifications was approved by An Bord Pleanála on 9th April 2019 after appeal on the original adoption of the scheme.

The Poolbeg West Planning Scheme lands are south of the Liffey. Approximately half of the SDZ lands are owned by Dublin Port Company.

Dublin Port Masterplan 2040

The Dublin Port Masterplan 2040 is a key document guiding future development within the port up to 2040. The Masterplan is a non-statutory plan which has been framed within the context of EU, national, regional and local development plan policies and is explicitly endorsed (or is expressly recognised) in the National Ports Policy, National Marine Planning Framework, National Development Plan, Regional Spatial and Economic Strategy for the Eastern and Midland Region, Dublin City Development Plan 2022-2028, North Lotts and Grand Canal Dock Planning Scheme and Poolbeg West Planning Scheme.

The Masterplan presents a vision for future operations at the port and critically examines how the existing land use at Dublin Port can be optimised for merchandise trade and passengers (including cruise ships).

The 3FM Project is the vehicle by which a number of the elements envisaged for each of the areas set out in the Masterplan will be delivered.

3 PROJECT CONSULTATION & SCOPING

The development proposals advanced in the 3FM Project reflect the significant levels of consultation that have taken place since 2017 on the future of Dublin Port.

Building on the consultation carried out during the process to review the Dublin Port Masterplan 2040 and the Dublin Port Post 2040 Dialogue Papers, DPC and their consultants, RPS, carried out further extensive consultation on the 3FM Project in the course of developing the current proposal.

This included a programme of public consultation undertaken between November 2021 and April 2023 to seek the views of the wider public on the 3FM Project and the proposed community gain initiative to be advanced as part of the project.

DPC reflected on the feedback received during the public consultations and sought to refine the 3FM Project Proposal in light of the concerns, expectations and requirements brought forward during the consultation exercise.

The following update on the 3FM Project was made as a direct response to the public consultation process and engagement with key stakeholders:

- DPC undertook a review of the consideration of alternative layout options which forms a key part of the planning application and assessment process. This resulted in a significant layout change concerning the provision of Lo-Lo storage capacity on the Poolbeg Peninsula.
- It had been originally proposed that a Lo-Lo storage facility would be located in lands directly south of the Dublin Waste to Energy facility, referred to in the Dublin Port Masterplan as Area O.
- Following the consultation process and extensive engagement with relevant stakeholders, it became apparent that another location, Dublin Port Masterplan Area K which was identified for development at a later date within the lifespan of the Masterplan, could be used to provide similar capacity.
- As a consequence, Area O lands has been reconfigured as follows:
 - A portion of lands at the eastern end of Area O will be allocated to the Irishtown Nature Park in accordance with zoning requirements. This land represents an additional 1.1ha to the Nature Park.
 - An additional portion of Area O will be made available to Dublin City Council to facilitate the provision of a District Heating Scheme adjacent to the Waste to Energy plant. This is the preferred location for Dublin City Council for the associated District Heating Energy Station. The planning approval for the District Heating Energy Station will be part of a separate planning application by Dublin City Council and will not form part of the 3FM Project application.
 - To facilitate the movement of the Lo-Lo activities at Area O to another port location, a portion of the Area O lands will be used for a transit Ro-Ro trailer yard to provide storage capacity to maximize the efficiency of the proposed Ro-Ro Terminal at Dublin Port Masterplan Area K. This port use will not involve any stacking of containers or trailers. The Ro-Ro operation will not be visible behind an existing bund and future green buffer zone.

- As a consequence of these changes, an additional area of land to the west of Area O which had formerly been designated for the District Heating Scheme will become a wildflower meadow and be directly adjacent to the new Port Park. This will represent a new public park and recreation area of 2.5ha.
- All of these proposals conform with the appropriate zoning for the Area O lands under the Poolbeg West SDZ.

These changes reflect the meaningful and effective consultation process which has taken place on the 3FM Project and demonstrates the manner in which DPC has considered the inputs from a range of sources, including public representatives, local community groups, relevant stakeholders and the public.

Detailed scoping has been undertaken in respect to the 3FM Project by engaging in consultations with prescribed and other authorities, bodies and stakeholders and through public consultation, in accordance with the European Commission's 2017 "Environmental Impact Assessment of Projects Guidance on Scoping" and the EPA's "Guidelines on the information to be contained in Environmental Impact Assessment Reports (May 2022).

Through the scoping process which has been carried out in the preparation of this EIAR, the issues which are likely to be important during the environmental impact assessment have been identified. The scoping process has identified the sources or causes of potential environmental effects, the pathways by which the effects can happen, and the sensitive receptors, which are likely to be affected, and has defined the appropriate level of detail for the information to be provided in the EIAR.

All environmental topics have been comprehensively addressed within the EIAR.

4 ASSESSMENT OF ALTERNATIVES

At strategic level, the Dublin Port Post-2040 Dialogue papers and the Masterplan identified the 3FM Project as a key element to implement, and underpin, the Masterplan's fundamental approach of providing the port's ultimate capacity by 2040 (73.8m tonnes of cargo throughput annually), by maximising the utilisation of Dublin Port's brownfield lands. The assessment process in support of the port's dialogue papers and the Masterplan identified that the development at this site and in this area of the port is the most sustainable location and layout and therefore the desired approach from a strategic point of view.

The 3FM Project is concluded to be an essential final step in achieving Dublin Port's throughput objective. The provision of the Southern Port Access Route, Lo-Lo container terminal, Ro-Ro unaccompanied freight terminal, ship Turning Circle, public amenities and utilities infrastructure would allow optimisation of land-use on the port's land in the South Port Estate. Such facilities need access to berths and must therefore be located accordingly.

At outline design level, the evolution of both the proposed marine and landside structural works, and the associated dredging works, was considered to achieve the 3FM Project's objectives. The 3FM Project design evolution was carried out by RPS, supported by navigational and operational studies and with an integrated approach alongside the RPS planning and environmental teams.

The design team's approach to developing and progressing the scheme design was based on examining layouts of key infrastructure elements that avoided or minimised any adverse environmental impacts while meeting the requirements of the project brief. This design process and evolution was carried out in the context of a do-nothing (Option 0) scenario as a baseline case with stakeholder engagement, specialist planning and environmental inputs, specialist studies and site investigation information used to refine the design layouts.

There is a strong relationship between the infrastructural elements of the 3FM Project which required that all these elements were examined considering a wide range of environmental matters along with navigational safety within the port. Design took place in parallel through the design progressions to determine interactions, particularly at boundaries, and also in combination, in order to also determine the needs of the dredging and disposal and piling activities.

- **Option 1** - The initial design was based on the Masterplan, reviewed 2018 and developed via an iterative process. There are potential negative construction phase impacts associated with some environmental topics in the early stages of the project, which are more than the do-nothing option. However, these are generally temporary and/or short-term impacts which can be further mitigated by design and process constraints such as working hours, timing/phasing of operations, method of construction and rate of construction. There are potential positive construction phase benefits due to employment opportunities. Potential negative operational phase impacts were identified in relation to the turning circle, infilling and a new access road which were addressed in later design progressions. Potential minor negative impacts in the operation phase were associated with increased operations. However, notably operation phase impacts associated with congestion issues in the vicinity of the port are reduced in comparison to the do-nothing option. Operationally the positive impacts are that, in contrast to the do-nothing (Option 0), this draft general arrangement (Option 1) achieves the port's ultimate capacity by 2040 (73.8m tonnes of cargo throughput annually), providing noteworthy societal, economic & human health benefits, with associated operation phase environmental benefits.

- **Option 2** - Both the construction and operational phase impacts for Option 2 are lesser than those associated with Option 1 due to key design for the turning circle, access road and transportation (including design that does not compromise potential future LUAS route alignments) and utilities. There are negative construction phase impacts associated with some environmental topics in the early stages of the project which are generally similar to, but lesser than, those for Option 1. However, noteworthy improvements are gained by the avoidance of impacts on cultural heritage and also reduction of the biodiversity, flora & fauna impacts. The remaining negative construction phase impacts are generally reduced to minor, temporary and/or short term and can be further mitigated by design and process constraints (working hours, timing/phasing of operations, method and rate of construction). There remain positive construction phase benefits due to employment opportunities. Minor negative operational phase impacts were identified again associated with increased operations, but in contrast, operation phase impacts associated with congestion issues in the vicinity of the port are reduced in comparison to the do-nothing option. Operationally Option 2 achieves the port's ultimate capacity by 2040 (73.8m tonnes of cargo throughput annually), offering the associated positive impacts that this affords. Emerging impacts were developed during consultation with key stakeholders and from feedback from the first consultation room which related to infilling (to be addressed on completion of site investigation) and traffic movements and the Maritime Village configuration which also were addressed in later design progressions.
- **Option 3** - The impacts improved compared to those associated with Option 2 due to the key design changes identified during this evolution for evolution of road and active travel route upgrades, Maritime Village and Lo-Lo container terminal design iterations to enhance amenity and reduce environmental impact. There remain negative construction phase impacts associated with some environmental topics in the early stages of the project which are generally similar to Option 2 which are generally minor, temporary and/or short term and can be further mitigated by design and process constraints (working hours, timing/phasing of operations, method and rate of construction). There remain positive construction phase benefits due to employment opportunities. Minor negative operational phase impacts were identified again in relation to Option 3 increased operations, contrasted by reduced operation phase impacts associated with congestion issues. Operationally, Option 3 achieves the port's ultimate capacity by 2040 (73.8m tonnes of cargo throughput annually), offering the associated positive impacts that this affords. Design uncertainty remained due to the outstanding marine site investigation results which influenced the structural form of the Lo-Lo container terminal and the SPAR Road along the shoreline. At Area O a further boundary refinement was also identified for consideration during consultations.
- **Option 4** - The construction and operation impacts improved compared to those associated with Option 3 due to the key design changes identified during this evolution. The key design changes were: a layout alternative using Area L for container storage and Area O as a Ro-Ro Freight Terminal which reduced operational impact with reduced industrial usage and further enhanced biodiversity and visual aspects of the project by further enhancing landscaping treatments and giving a greater area over to the Irishtown Nature Reserve; the selection of open piled design for the Lo-Lo container terminal and SPAR viaduct, which reduced potential negative impacts; and, the inclusion of further mitigation such as providing a noise barrier and low carbon alternative construction methods and materials, restoration of sections of the Great South Wall. The remaining minor negative construction phase impacts associated with some environmental topics in the early stages of the project are generally similar, but lesser than those of Option 3.

Improvements are gained by the offsetting of construction impacts on cultural heritage by wall restoration on other stretches. These remaining minor, temporary and/or short-term impacts can be mitigated by design and process constraints contained in the CEMP such as working hours, timing/phasing of operations, method and rate of construction. There remain potential positive construction phase benefits due to employment opportunities. Potential minor negative operational phase impacts associated with increased operations contrasted to reduced operation phase impacts associated with congestion issues. Operationally Option 4 achieves the port's ultimate capacity by 2040 (73.8m tonnes of cargo throughput annually), potentially offering the associated positive impacts that this affords.

The general arrangement for Options 0 – 4 are presented in [Figure 6](#) to [Figure 10](#).

The environmental assessments developed a suite of avoidance, prevention, reduction, or offsetting mitigations, to be accommodated within the final outline design which reduced potential negative impacts during construction and operational phases to minor potential impacts. The minor negative construction impacts are addressed by mitigation measures. The minor negative operation phase impacts on aquatic ecology and climate are mitigated by ongoing monitoring and substitution of materials respectively. The climate impacts are reduced in comparison to Port demand increase without the infrastructural investment as represented in the do-nothing option. Option 4 has also developed potential positive impacts due to construction phase employment and those in the operational phase associated with the following environmental topics; biodiversity, flora & fauna and visual & landscape and also improve noise, land, soils, geology & hydrogeology and water quality.

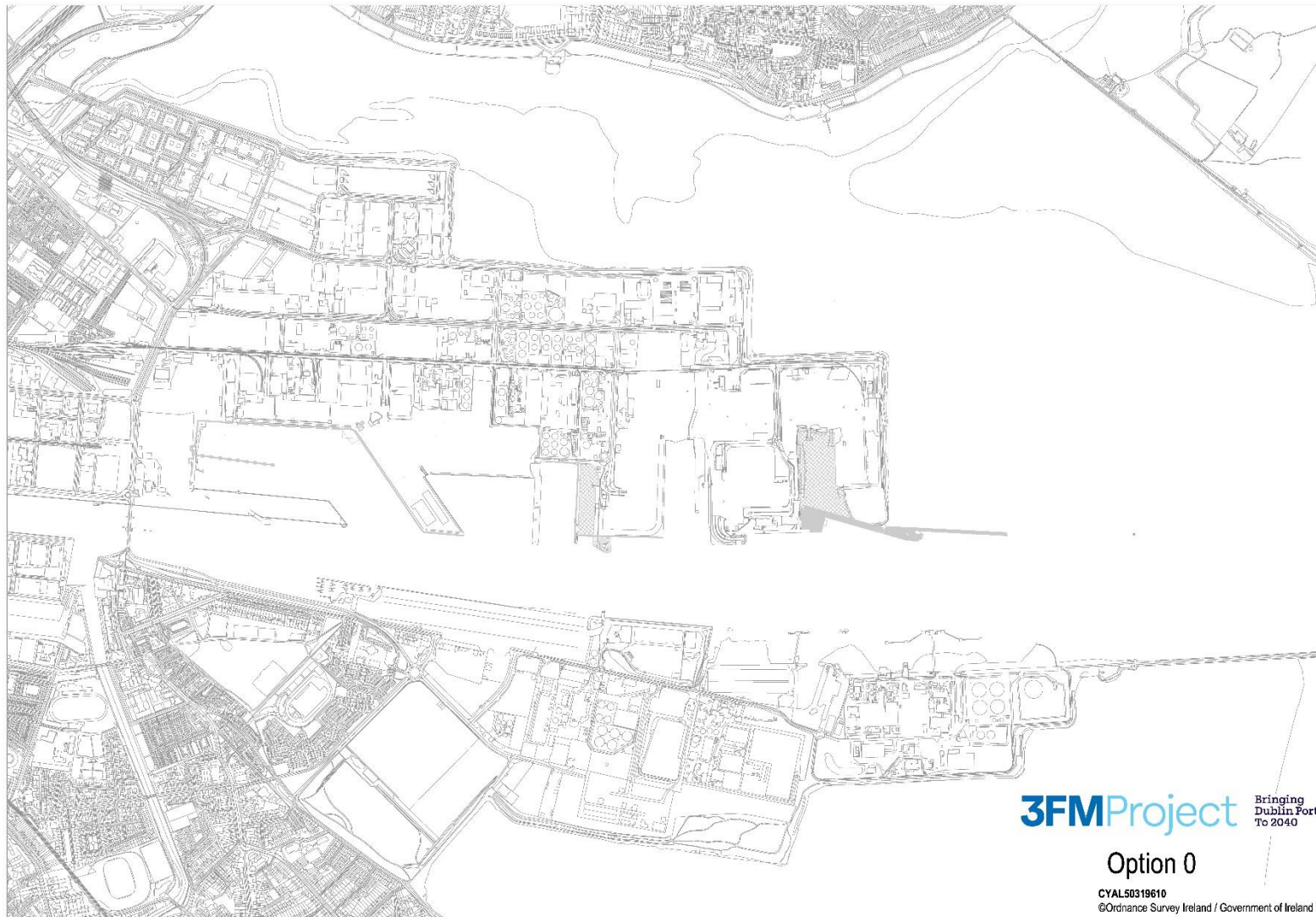


Figure 6 Do-nothing General Arrangement **Option 0**

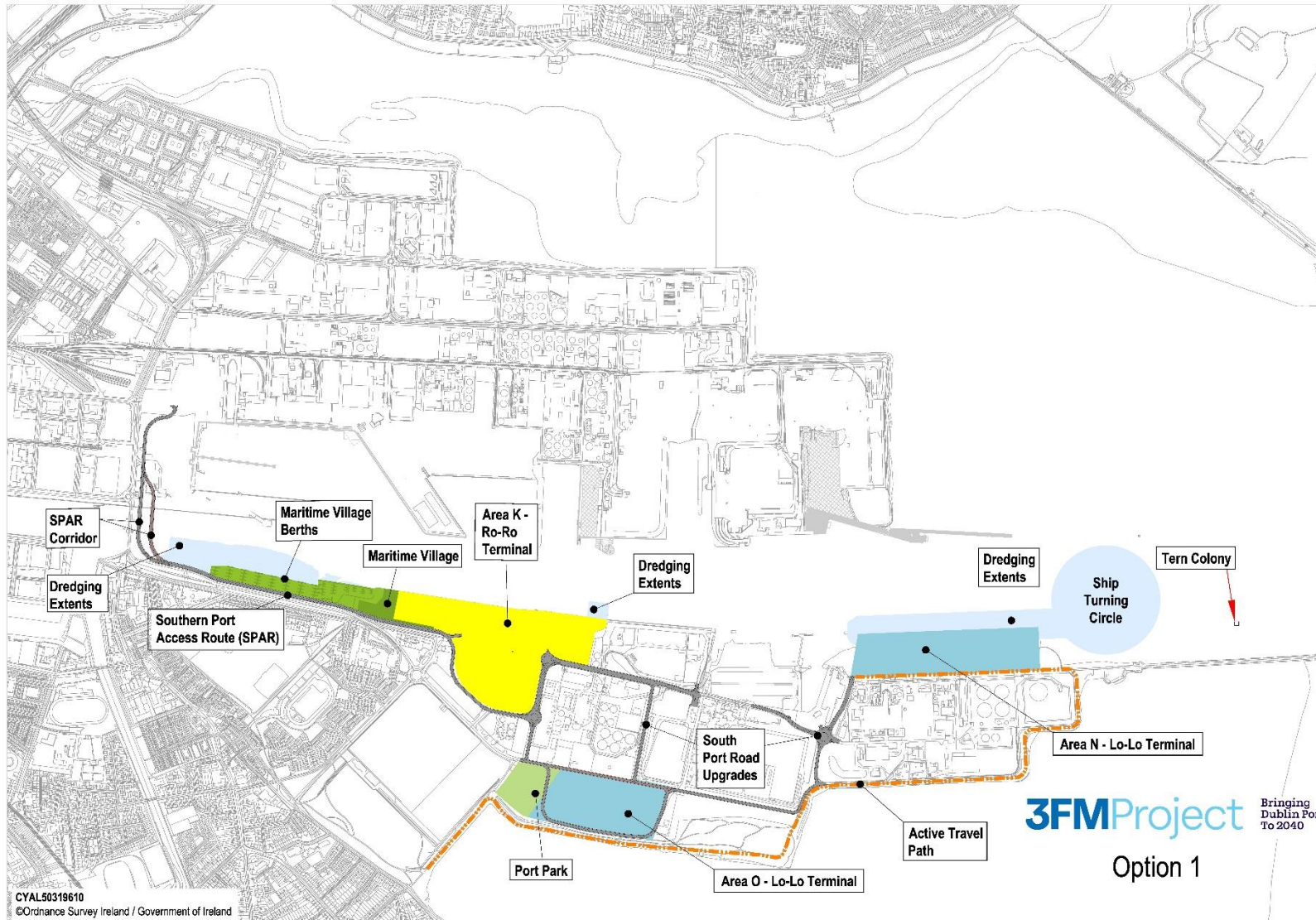


Figure 7 General Arrangement Option 1 March 2020

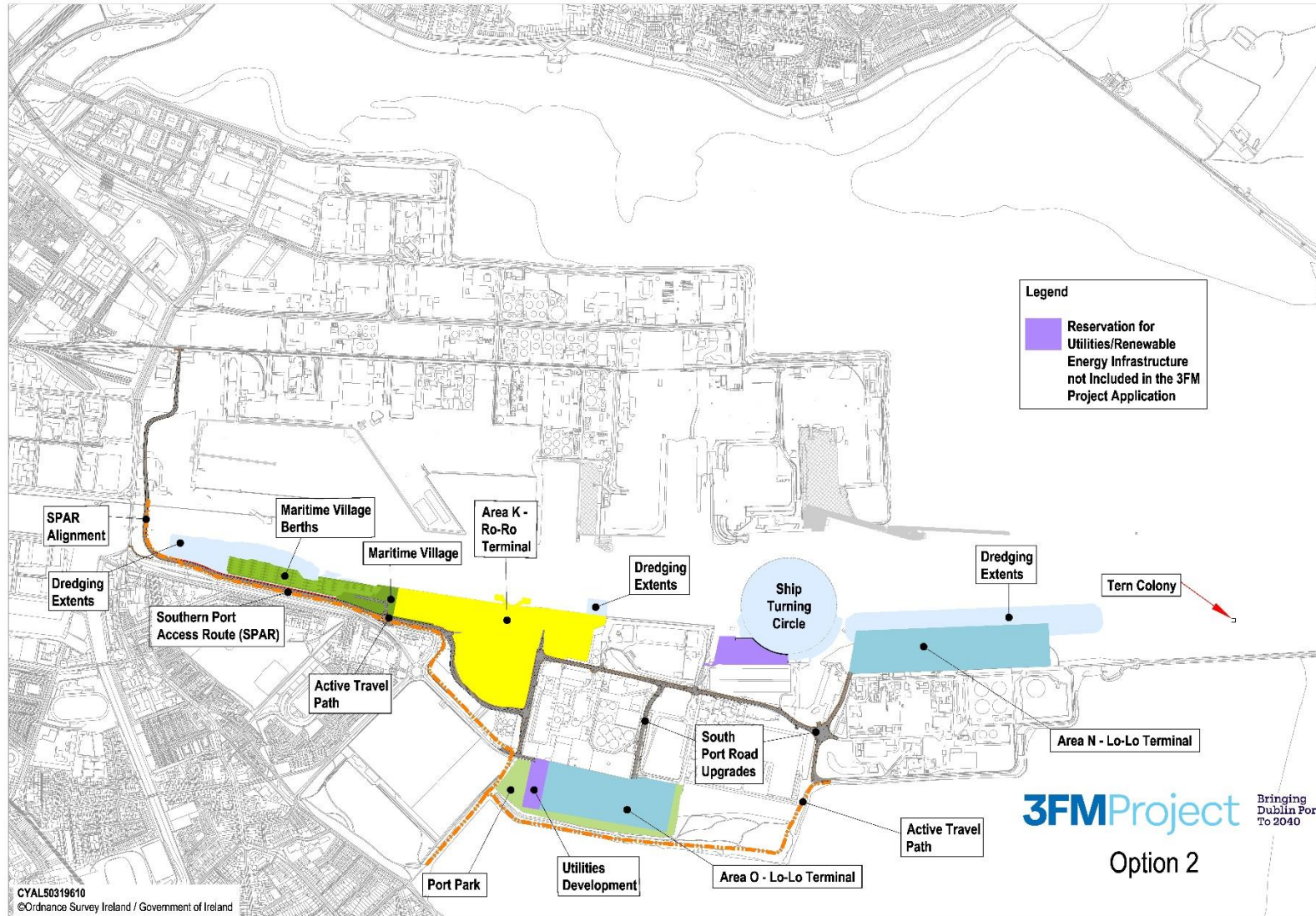


Figure 8 General Arrangement Option 2 November 2021

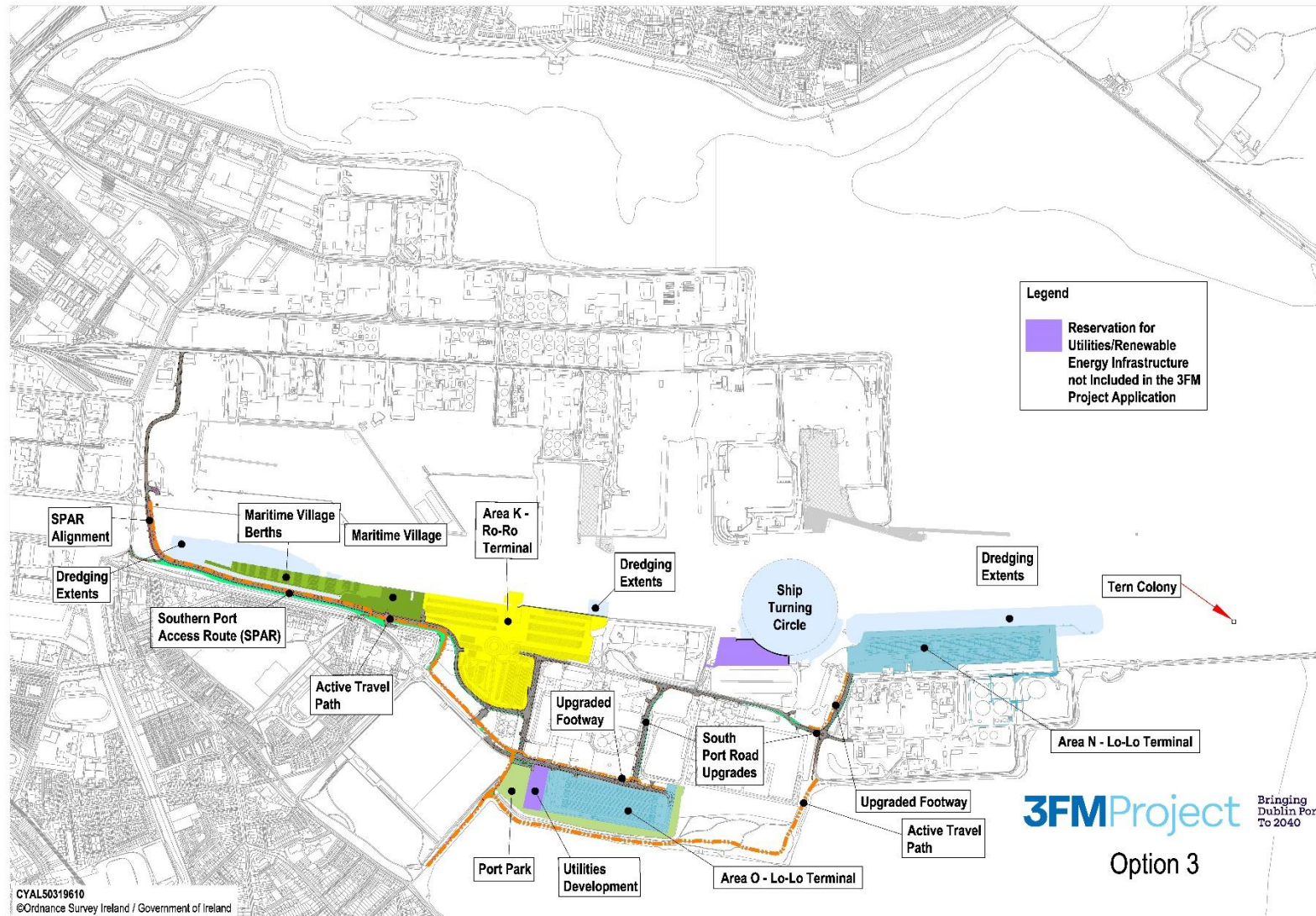


Figure 9 General Arrangement **Option 3** February/March 2023

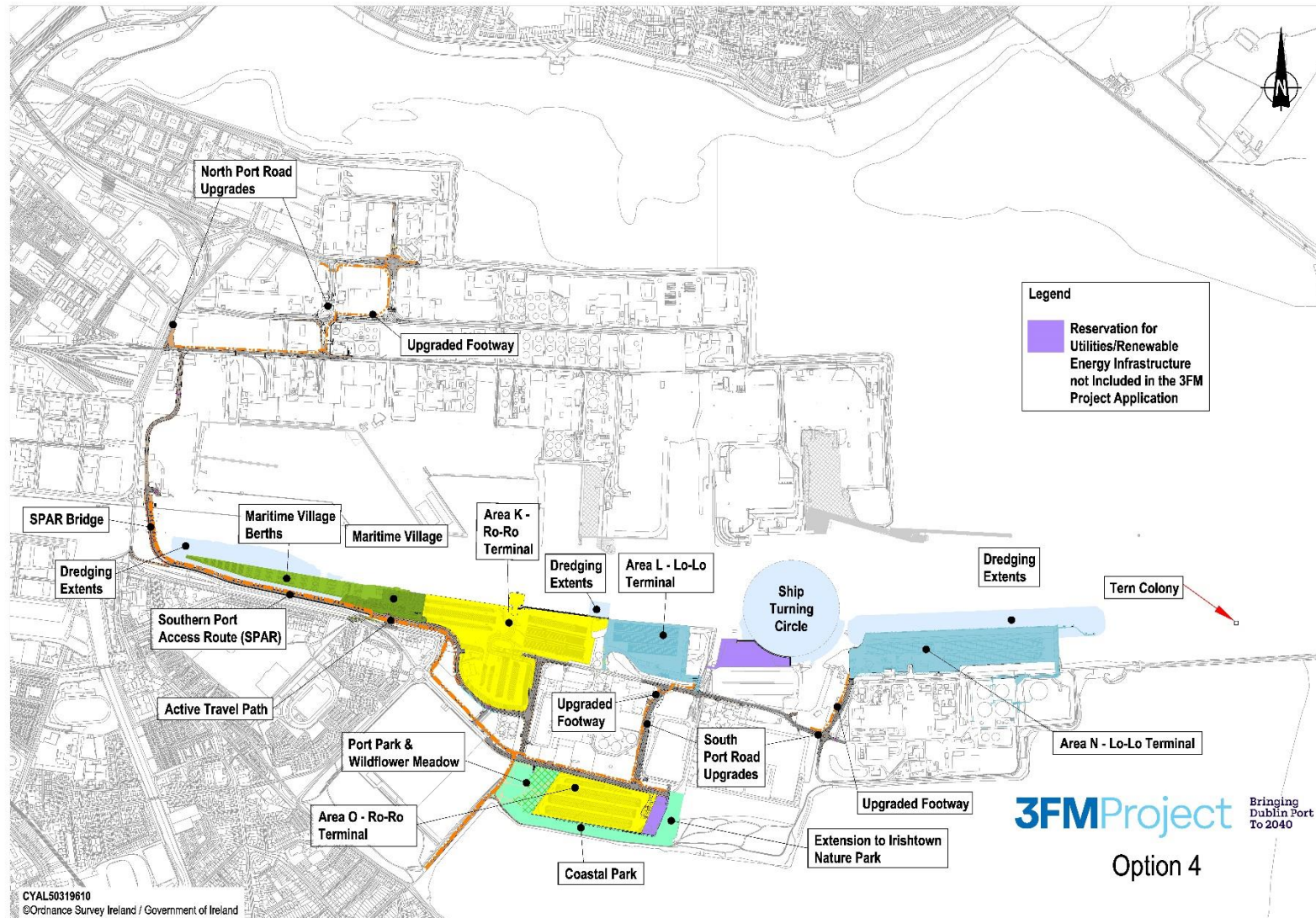


Figure 10 General Arrangement **Option 4** December 2023

Alternative construction methods for dredging and disposal activities and for piling activities which apply across several of the 3FM Project key infrastructure elements were also considered.

- **Dredging & Disposal/Re-use Works** - A number of alternative dredging and disposal options were examined including: do-nothing; beneficial re-use; disposal on land; incineration and disposal at sea. The option identified for suitable (Class 1) materials was a combination of disposal at sea and re-use with computational modelling undertaken to determine appropriate method, rate, timing and location of these activities. The disposal of the Class 2 element of dredged sediment from the Maritime Village / Marina will, in order of preference, be:
 - Filled to Berth 52/53 under a revised IE licence subject to availability of receptor capacity;
 - Recovered at a soil recovery or soil treatment facility in Ireland subject to testing of the sediments in line with the selected facility licence at the time of the works;
 - Recovered at a soil treatment facility in Great Britain or northern Europe; or
 - Disposed of at a licenced landfill facility in Ireland.

No noteworthy environmental impacts of the design choices were identified.

- **Piling Works** – there are a number of 3FM Project elements that require piled foundations. Alternatives were examined including: do-nothing; alternative materials and associated alternative technologies, with different associated construction forms (such as concrete piles and gravity walls). The further alternatives assessment selected Tubular Steel Piles (open jetty structures and crane rails), with Steel Sheet Piles and Steel Combi-Walls (infilled jetties and quay walls) for the marine structures. A combination of vibrodriving and impact driving methods was selected. Landside structures and buildings utilise conventional driven and bored pile foundations. A number of potential environmental impacts of these choices are less favourable than the do-nothing scenario, however these may be mitigated with good practice, which is demonstrated by the ongoing ABR Project piling works. The positive impacts of this aspect of the Project upon the prosperity of the population (regionally and nationally, as well as socially and economically) were the reason for choosing to pursue this design.

The key design evolutions, which were supported by environmental considerations under the assessment of alternatives for the 3FM Project elements, are set out below:

1. **Southern Port Access Route (SPAR)** a new opening bridge across the River Liffey was developed along with new and upgraded roads and junctions that considered a range of operational, construction and environmental factors. The route will facilitate HGVs, active travel users (pedestrians, cyclists, wheelers etc), blue light services and public transport users moving to and from the South Port and Poolbeg Peninsula. The SPAR will allow the 3FM Project to be fully rail enabled through rapid road shunting of freight by electric vehicle from the South Port Estate, across the Liffey, to rail intermodal facilities in the vicinity of the North Port Estate. The SPAR will have a direct connection to the Dublin Tunnel (aka Dublin Port Tunnel) via the North Port road system. The bridge is elevated above design flood levels, aesthetically considered, and importantly links the north and south port areas affording capacity for port growth. The SPAR section along the shoreline adjacent to the east link toll plaza changed in form from an embankment to a viaduct offering reduced construction time and environmental benefits due to minimisation of infill and permanent loss of habitat. Road vertical alignments also considered environmental factors, visual considerations meant a section was reduced in elevation to retain existing views of the seascape, and noise mitigations and low

carbon alternative construction methods and materials were introduced into the final design iteration. A refined series of access junctions also considered movements within the port. Alternative designs considered active travel provision and potential future light rail configurations again to improve the amenity of the 3FM Project. Consideration of the crossing of the Great South Wall led to the proposals to restore stretches elsewhere within DPC-owned lands and to develop a conservation management plan and vision for the Great South Wall through the 3FM Project.

2. **Lo-Lo container terminal** the new facility provides additional port capacity and evolved in terms of layout and structural form to address construction and environmental considerations. The layout of Area N which provides 650m of deep water berthage accommodated bird roosting and feeding constraints and cultural heritage concerns. The selected open piled structural form for the Terminal also minimised infilling avoiding permanent loss of habitat and impacts on coastal processes and water quality. In addition, the relocation of this facility (away from its former location in Area K) affords an improved environment to residents in the vicinity of Area K whilst not impacting receptors at Area N or Area L. The layout of the transit container storage yard (initially at Area O and then relocated to Area L) created opportunities to complete the Masterplan by reducing current industrial usage in Area L and therefore created environmental improvement opportunities at Area O whilst avoiding potential noise and visual impacts to receptors in that vicinity.
3. **Ro-Ro freight terminal** the new facility provides additional port capacity, its evolution provides for reinforcement and reuse of existing quay walls with an operational layout which accommodated boundaries modified to the west (increasing the Maritime Village) and the east (accommodating existing services). Alternative site access and freight/container configurations reduced traffic movements across the line of the Great South Wall and located container stack operations remote from receptors. A transit Ro-Ro freight terminal located in Area O, minimised settlement and methane gas release risk from this former municipal site and also created environmental improvement opportunities in accommodating DCC's district heating scheme, augmenting Irishtown Nature Reserve (avoiding initial potential impacts by avoiding a new access road), open space including Port Park, a coastal park and a wildflower meadow and also provided landscaping and screening opportunities.
4. **Ship turning circle** this changed location to avoid impact to the Great South Wall and also accommodated the Port's navigation movements, roosting bird populations and structural form to accommodate the offshore wind sector. The consideration of the turning circle also resulted in the development of a Tern Colony Management Plan and provision of an additional tern colony. It is important to note that this element facilitates the safe and efficient manoeuvring of the shipping to the North Port Estate as well as the proposed 3FM development in the South Port Estate.
5. **Maritime Village** was an environmental gain afforded as part of the 3FM Project, it was developed, in consultation with stakeholders, to accommodate local rowing, sailing, and boat clubs and will provide an enhanced public realm and facilities on the waterside. It will also accommodate the relocation of Port Harbour Operations from the North Port. The number of berths and water facilities have been increased for future use and the land based facilities enhanced to form a focal point of community gain. The initial concept for the Maritime Village considered environmental constraints including the location of the Great South Wall and the concept was developed to create a family of separate buildings for sailing, rowing, local boat owners, community and maritime training facilities. The overall facilities were architecturally designed incorporating high quality material finishes, public realm features and landscaping.

6. **Community Gain**, integrating Dublin Port with Dublin City and its people is a core objective of the Masterplan for Dublin Port, these elements combine to form an environmental gain afforded as part of the 3FM Project. Development of proposed new public amenities on the Poolbeg Peninsula will provide **community gain** and contribute towards integrating the port with the city. These include:

Enhanced **recreational amenity** through:

- 7km of Active Travel Path (cycle, pedestrian, wheelers etc) and 4.9km of new or upgraded footway for the North Port, SPAR and Poolbeg Peninsula, which will link with the 1.4km Liffey Tolka Greenway in the North Port, and from there to the 4.0km Tolka Estuary Greenway currently under construction by Dublin Port. The design of the Active Travel Path considered planning criteria and movement policies as well as environmental constraints and opportunities to enhance the project for users and stakeholders. The routes included stop points and a character area, with designed surface and edge treatments and lighting and hard and soft landscaping. DPC will provide Dublin City Council with a €5million contribution for future upgrading of the existing coastal path along the southern perimeter of the Poolbeg Peninsula.
- Development of a sailing, rowing and maritime training campus (Maritime Village) adjacent to the existing Stella Maris Rowing, Poolbeg Yacht and Boat Club in conjunction with local yacht and boating clubs and local boat owners, including a public slipway and facilities for maritime skills training.
- Provision of Open Space with a Port architecturally design and landscaped to include parkland, sport pitch and pavilion features and Wildflower Meadow (2.5ha) and Coastal Park (1.6ha).
- Provision of 1.1ha extension to Irishtown Nature Park.

Enhanced **public realm** through:

- Development of a new public plaza as a key part of the Maritime Village.
- Extensive boundary softening works adjacent to the development sites forming part of the 3FM Project.

Community support through:

- Establishment of a new €2 million Community Benefit Fund for Education, Heritage & Maritime Training Skills projects within the Poolbeg area. The initial capital for the Fund will be administered by DPC in consultation with local stakeholders.

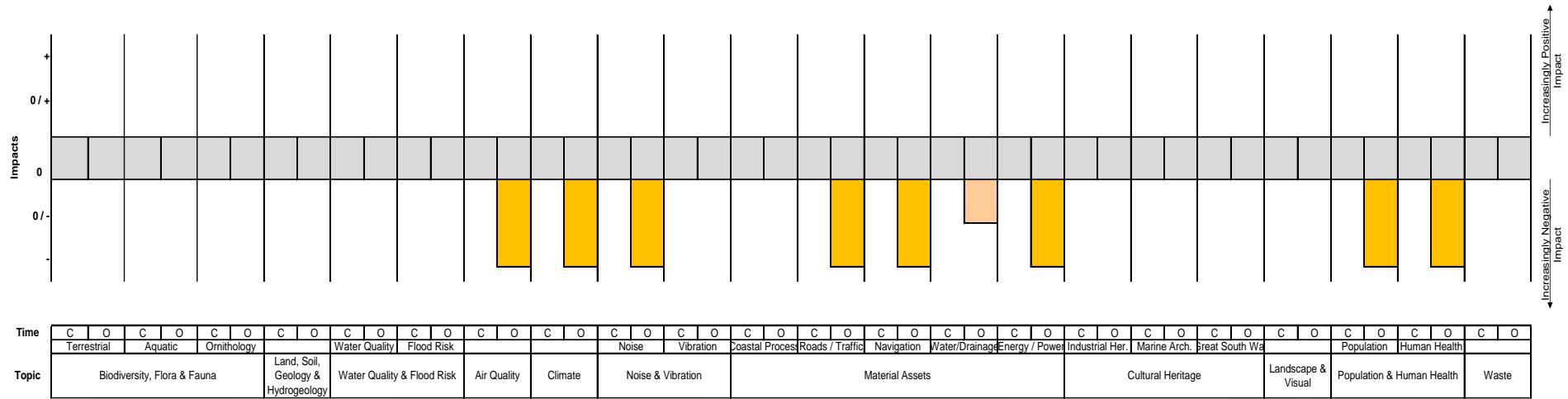
Heritage & Biodiversity enhancements through:

- Commissioning a new Public Access Feasibility Study regarding the Great South Wall so as to identify improved public interpretation, accessibility, facilities and conservation possibilities,
- Provision of up to €1 million funding to implement the study recommendations.
- Provision of an additional permanent marine structure (dolphin) to expand the available habitat and range of the Dublin Port tern colonies.

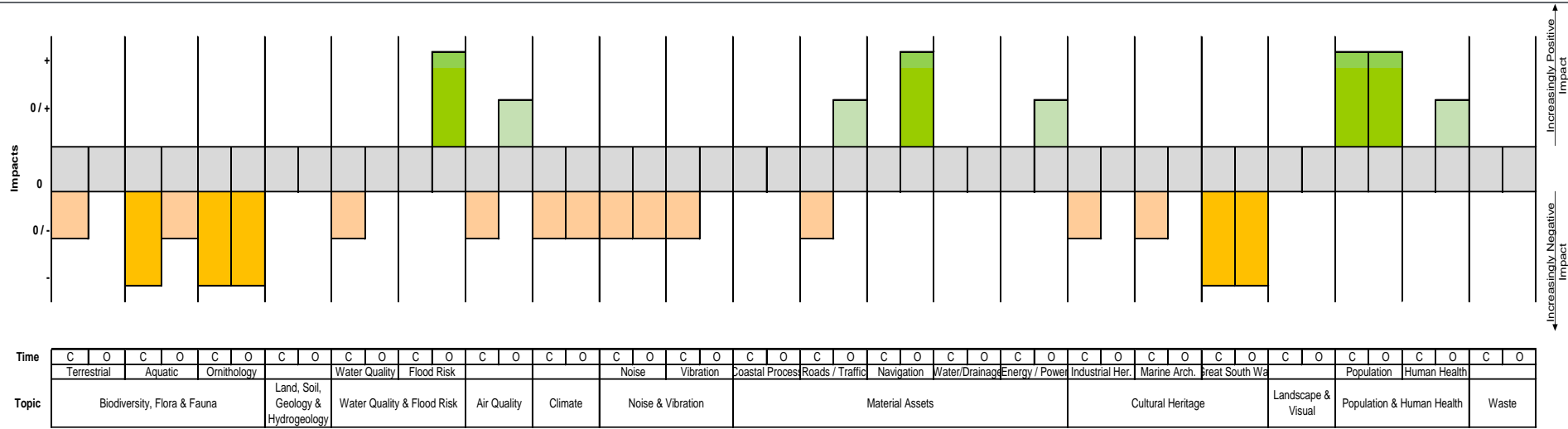
During the design evolution these changes resulted in an improving trend with each alternative reducing potential negative impacts due to layout and design changes and also the inclusion of mitigation measures developed by the environmental impact assessment process. These changes and mitigations also enhanced potential positive environmental benefits for each alternative, noting that the most noteworthy of these are linked to the positive impacts that the 3FM Project affords in terms of material assets, population & human health, air quality and improved flood risk management. The results of the assessments are presented in [Figure 11 \(a-e\)](#).

Key for all Summary Impacts Tables:

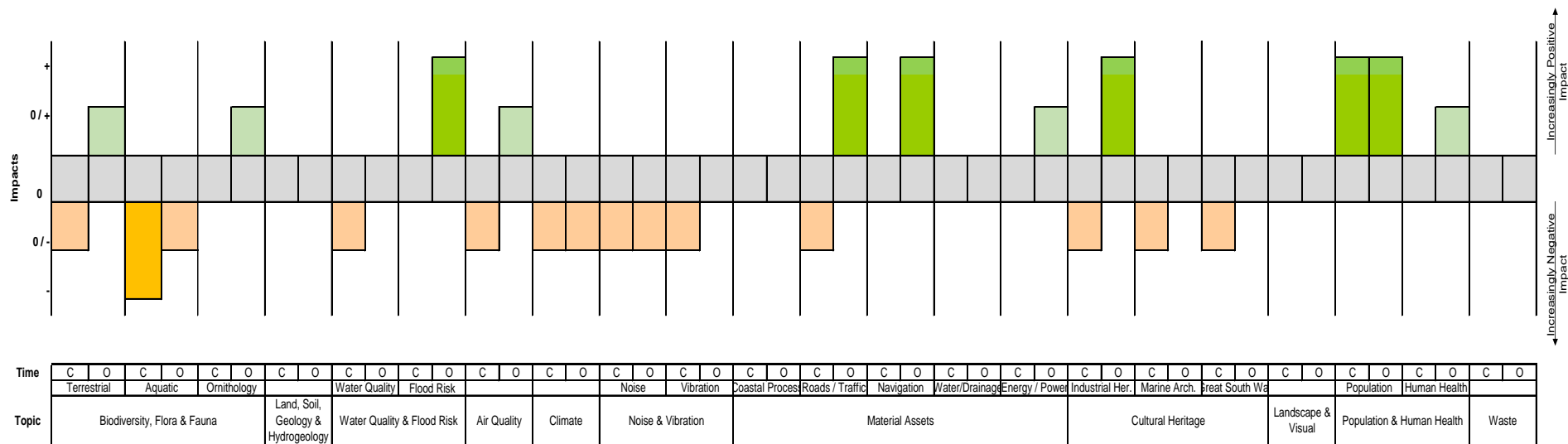
- +** *positive potential impacts*
- 0/+** *positive to neutral potential impacts*
- 0** *neutral potential impacts*
- 0/-** *neutral to negative potential impacts*
- *negative potential impacts.*



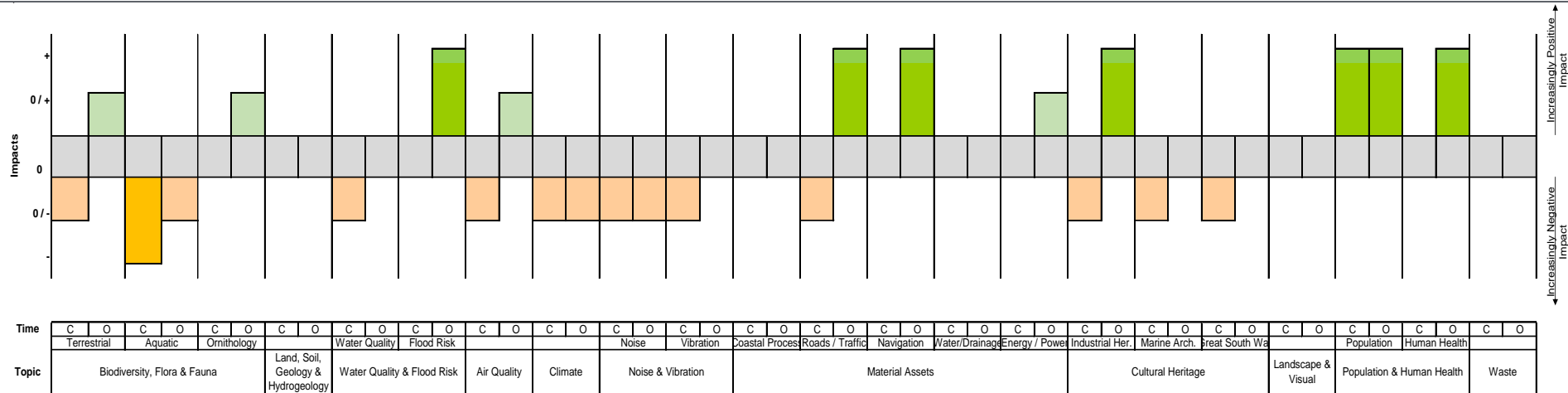
a) Option 0



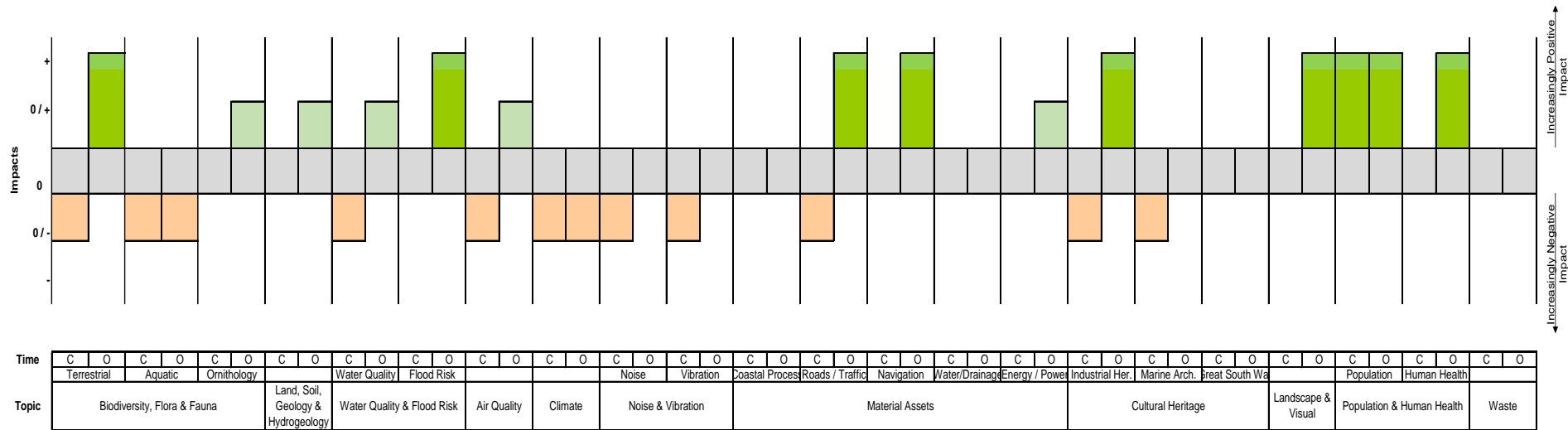
b) Option 1



c) Option 2



d) Option 3



e) Option 4

Figure 11 (a-e) Project Design and Process Design Evolution Environmental Assessment

Option 4 is considered the best environmental option due to its delivery of the most positive potential benefits combined with the least minor negative potential impacts. Assessment of the design progressions demonstrates a number of environmental benefits and no additional potential impacts with this final alternative.

Potential construction phase impacts for Option 4 are associated with biodiversity, flora & fauna, water quality & flood risk, air quality, climate, noise & vibration, material assets and cultural heritage. However, improvements are gained by the offsetting of construction impacts on cultural heritage by wall restoration on other stretches and biodiversity, flora & fauna due to redesign of the Lo-Lo container terminal and SPAR viaduct. The remaining potential negative construction phase impacts are all minor, temporary and/or short term and can be mitigated by design and process constraints contained in the CEMP such as working hours, timing/phasing of operations, method of construction and rate of construction. There remain potential positive construction phase benefits due to employment opportunities for population & human health.

Potential minor negative operational phase impacts were identified again in relation to Option 4 biodiversity, flora & fauna and climate associated with the increased operations. Again, notably operation phase impacts associated with congestion issues in the vicinity of the port in terms of noise & vibration, climate, air quality are reduced in comparison to the do-nothing option. Operationally draft general arrangement (Option 4) achieves the port's ultimate capacity by 2040 (73.8m tonnes of cargo throughput annually), potentially offering the associated positive impacts that this affords, in particular the inclusion of mitigation measures improve operational phase impacts for biodiversity, flora & fauna and visual & landscape and also improve noise, land, soils, geology & hydrogeology, air quality and water quality.

The key environmental differences delivered by the design evolution are:

Biodiversity, Flora & Fauna

- increased benefit via the provision of additional lands to the Irishtown Nature reserve, additional open spaces and a wildflower meadow plus the inclusion of landscaped areas.
- reduction in potential impacts due to the monitoring regime putting in place for marine mammals throughout the construction period.
- reduction in potential impacts due to the selection of open piled design on the SPAR viaduct and Area N also with reduction of potential impact on bird roosting and feeding areas due to layout changes at Wharf N.
- reduction in potential impacts due to the relocation of the turning circle to Area M (avoiding relocation of the tern colony and also reducing dredging and infill footprints and associated marine habitat and food source impacts) and development of an additional Tern Colony site.
- reduction of potential impact on the SPA for Brent geese (due to repositioning of access arrangements), this layout change also increased the opportunity to introduce perimeter landscaping with planted strips increasing biodiversity.

Noise

- reduced potential impact by relocating existing container facilities to Areas N and L and providing noise mitigation at Area K.

Material Assets

- positive operation phase impact associated with the use of the SPAR and to the public road network associated with improved distribution of port related traffic on the road network and improved active travel of the Poolbeg Peninsula and the 3FM Project has been designed so that it does not compromise potential future LUAS route alignments. COMAH assessment has also resulted in avoidance of areas where the public would be at risk from existing facilities in refining these transportation assets.
- accommodation for future utilities within the Masterplan area.

Cultural Heritage

- reduced potential impact on the heritage value of the area by moving the turning circle to Area M, avoiding the risk of ships turning and causing erosion at the Great South Wall, reinforced by the development of a conservation management plan and vision for the Great South Wall through the 3FM Project, keeping the line of the wall clear of permanent structures and restoring sections of the wall in Dublin Port Company ownership, and also the removal of the sludge jetty improving the seascape.

Landscape & Visual

- positive operation phase impacts associated with design of enhanced screening for the greenways and public realm amenity areas which ensure that views of industrial port activity are screened from public view and also the removal of the sludge jetty improving the seascape.
- development of the active travel route with stop points and sections along the waterside, and in particular, the Maritime Village which includes community spaces and amenities.

Population & Human Health

- positive operation phase impacts associated with the extension/upgrade of the Southern Greenway and increased social amenity areas including a larger Maritime Village, park areas and the active travel routes.

Lands, Soil, Geology & Hydrogeology

- reuse of former industrial areas reduce potential pollution pathways and using the former municipal site for single height freight/container storage reducing the risk of settlement and methane gas release.

There are no impacts at construction or operational phases for waste. For air quality and climate there are improvements over the do-nothing option and also for water quality & floods whilst there are potential short term impacts during construction which can be mitigated (as has been demonstrated during previous Dublin Port construction projects) there is a gain in providing new infrastructure to accommodate increased flood levels in future climate change scenarios again compared to the do-nothing scenario.

Whilst some areas have been offered to alternative uses in the greater public interest, the Masterplan throughput has been achieved by intensification of the use on remaining lands therefore not reducing the Project's societal benefits. It should also be noted that all do-something options offer benefits in terms of relocation of the Lo-Lo activities away from residents, improved road infrastructure avoiding HGV congestion and the addition of amenity facilities (the Maritime Village, Port Park and the active travel corridors).

Option 4 is therefore the preferred option as it is considered the best environmental option due to its delivery of the most positive potential benefits combined with the least minor negative potential impacts. This is the option that the 3FM Project EIAR assesses.

5 PROJECT DESCRIPTION

5.1 Location of the project

Dublin Port is the largest port in Ireland, situated on Ireland's eastern coastline, as shown in Figure 12. The South Estate of Dublin Port comprises 58ha. The North Estate of Dublin Port comprises 207ha. Together they make up the 265ha Dublin Port Estate, which is entirely within the ownership of Dublin Port Company (DPC). The South Estate therefore represents approximately 20% of the Dublin Port Estate. DPC also has 44ha of lands at Dublin Inland Port near Dublin Airport. Therefore, the entire Port Estate comprises 309 ha.

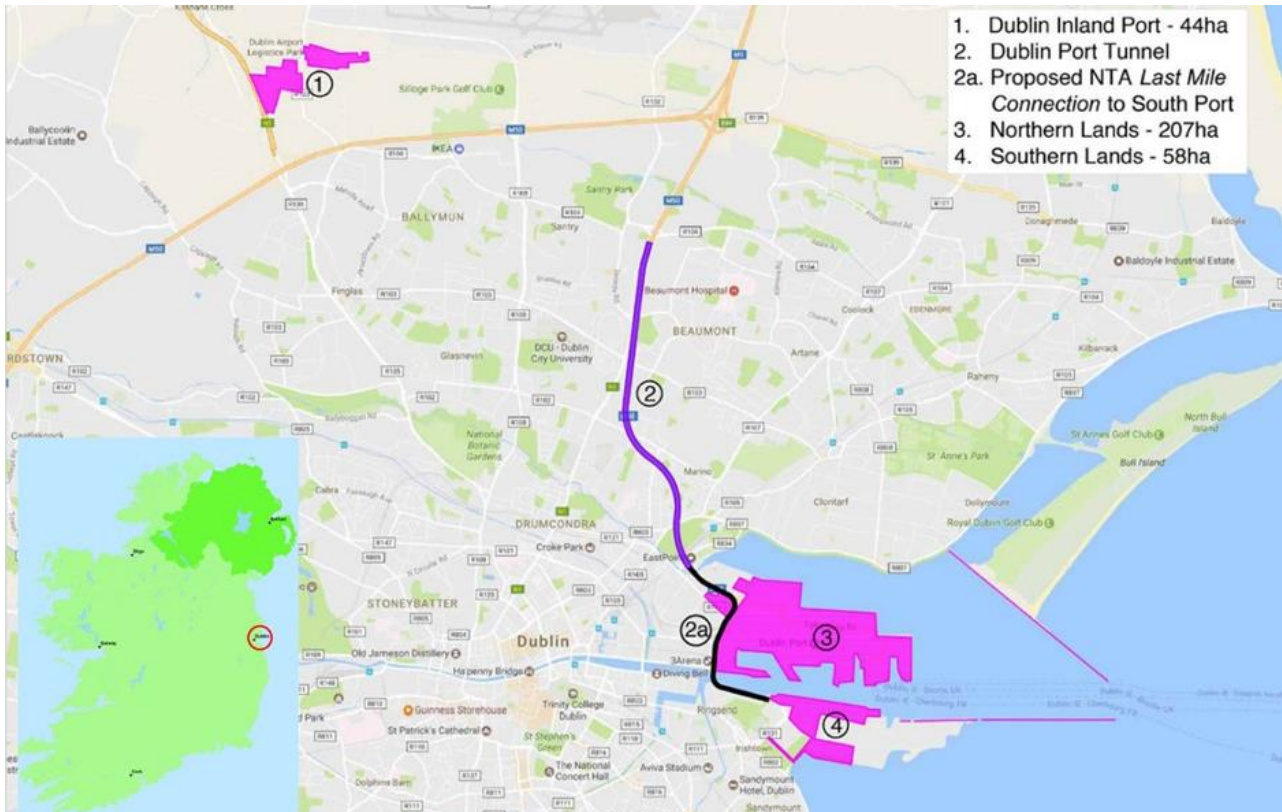


Figure 12 Site Location Map (reproduced from the Dublin Port Masterplan 2040, reviewed 2018)

The majority of the works proposed as part of the 3FM Project are located on the Poolbeg Peninsula. Road improvements, however, are also required in the vicinity of the North Estate to facilitate the movement of HGV traffic between the Poolbeg Peninsula and the Dublin Tunnel. Figure 13 shows DPC land ownership on the Poolbeg Peninsula and also the locations of numbered berths along the quays. The Great South Wall (GSW), which runs through the spine of the peninsula, together with Pigeon House Precinct represent key heritage assets within the Poolbeg Peninsula. The Dublin Port Heritage Conservation Strategy (2024) and Masterplan 2040 reinforce DPC's commitment to ensuring that development is socially and culturally sustainable, and in line with the Sustainable Development Goals (SDG). DPC also actively participates with AIVP, a worldwide network that supports joint city-port sustainable development strategies, and is committed to achieving the goals of the AIVP 2030 Agenda. This commitment has resulted in a Historic Urban Landscape (HUL) approach that recognises distinct heritage assets, and the landscape setting and context of these assets. HUL is a UNESCO concept established through a framework approach. These key heritage assets have informed the engineering design of all the elements of the project and their locations are shown in Figure 14.

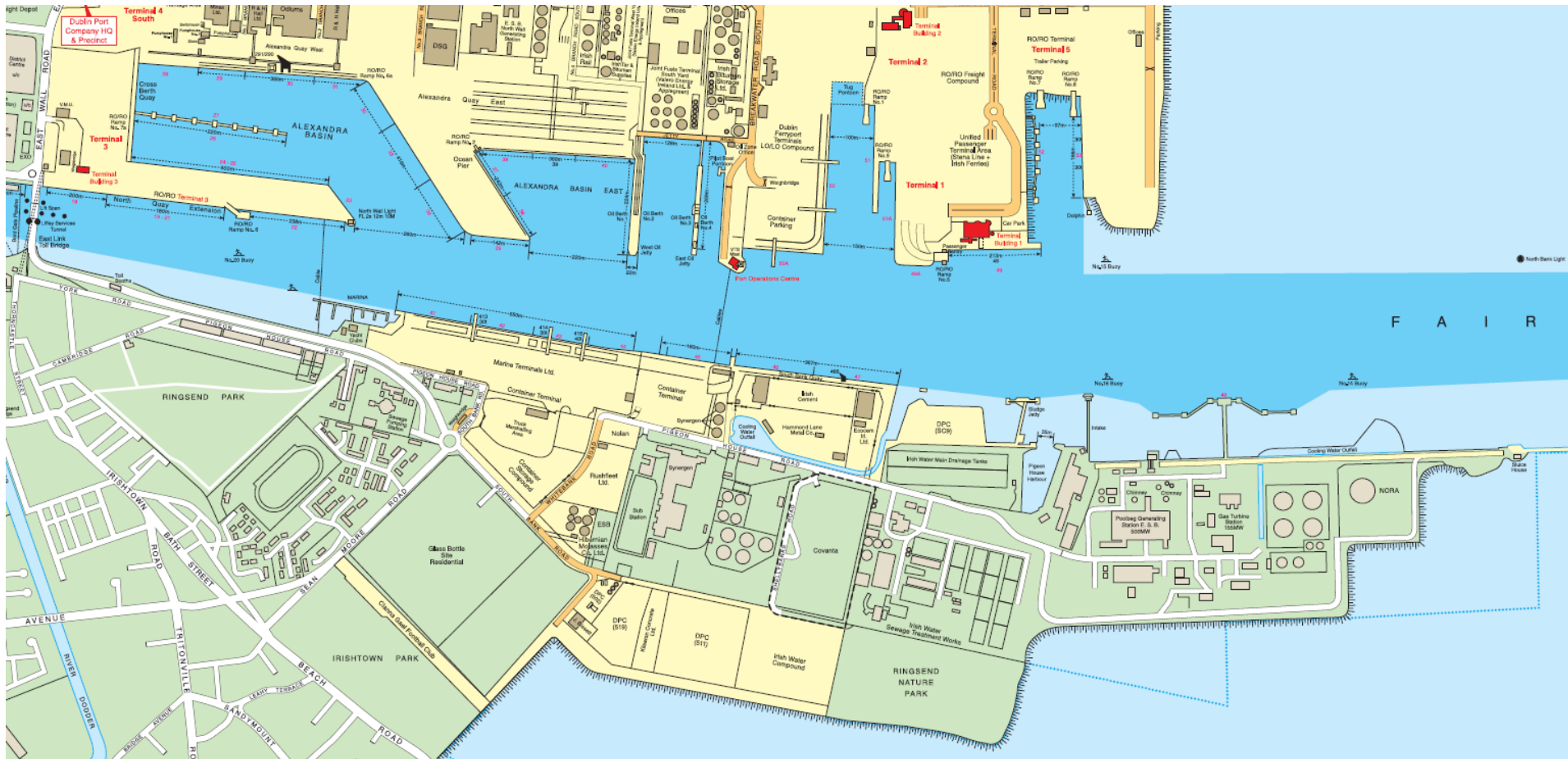


Figure 13 Location of South Estate of Dublin Port, Poolbeg Peninsula (generalised colour scheme - yellow owned by DPC, green owned by others, with berth numbers in Southern Lands enlarged)



Figure 14 Aerial Image showing key heritage assets within the Poolbeg Peninsula - Great South Wall (GSW) and Pigeon House Precinct

5.2 Proposed Development Works

An overview of the works proposed as part of the 3FM Project is presented below. A series of Computer-Generated Images (CGIs) are used throughout the text to provide a visual interpretation of that being described.

An aerial overview CGI of the 3FM Project is shown in [Figure 15](#).



Figure 15 CGI Aerial View of the Proposed 3FM Development, looking southeast

The 3FM Project has six key elements:

1. Construction of a new public road and bridge called the **Southern Port Access Route (SPAR)** to link the North and South Port Estates ([Figure 16](#) and [Figure 17](#)).

The route will include a new opening bridge over the River Liffey and a viaduct running parallel to the south bank of the River Liffey. The bridge will be located immediately east of Tom Clarke Bridge. The route will facilitate Heavy Goods Vehicles (HGVs), active travel users (pedestrians, cyclists, wheelers etc.), blue light services and public transport users moving to and from the South Port and Poolbeg Peninsula. The SPAR will allow the 3FM Project to be fully rail enabled through rapid road shunting of freight by electric vehicles from the South Port Estate, across the Liffey, to rail intermodal facilities in the vicinity of the North Port Estate. The SPAR will also have a direct connection to the Dublin Tunnel (aka Dublin Port Tunnel) via the North Port road system.



Figure 16 CGI Aerial View of Proposed SPAR River Liffey crossing and Tom Clarke Bridge in the foreground



Figure 17 CGI View along the SPAR 5m active travel route, looking east

2. Construction of a **new Lift-on Lift-off (Lo-Lo) Terminal** with an annual throughput capacity of 550,000 Twenty-foot Equivalent Units (TEU) or 5.34m tonnes (Figure 18 to Figure 20).

The Lo-Lo Terminal will consist of two main components:

- A terminal located north of the ESB's Generating Station on the eastern end of Poolbeg Peninsula. The terminal will have 650m of deep water berthage dredged to a depth of -13.0m CD (Chart Datum), plus associated cargo handling areas (Dublin Port Masterplan Area N). This terminal will accommodate Lo-Lo vessels of up to 240m length overall, primarily from continental Europe, on a new open-piled wharf. The works will require the demolition of the existing Poolbeg Oil Jetty which will be replaced by a new oil transfer facility at the eastern end of the wharf.
- The terminal above will operate in conjunction with a transit container storage yard located on waterside land currently used for bulk cargo handling (Dublin Port Masterplan Area L).



Figure 18 CGI View of Proposed Area N – Lo-Lo Terminal, looking southeast



Figure 19 CGI Water Level View of Proposed Area N – Lo-Lo Terminal, looking south

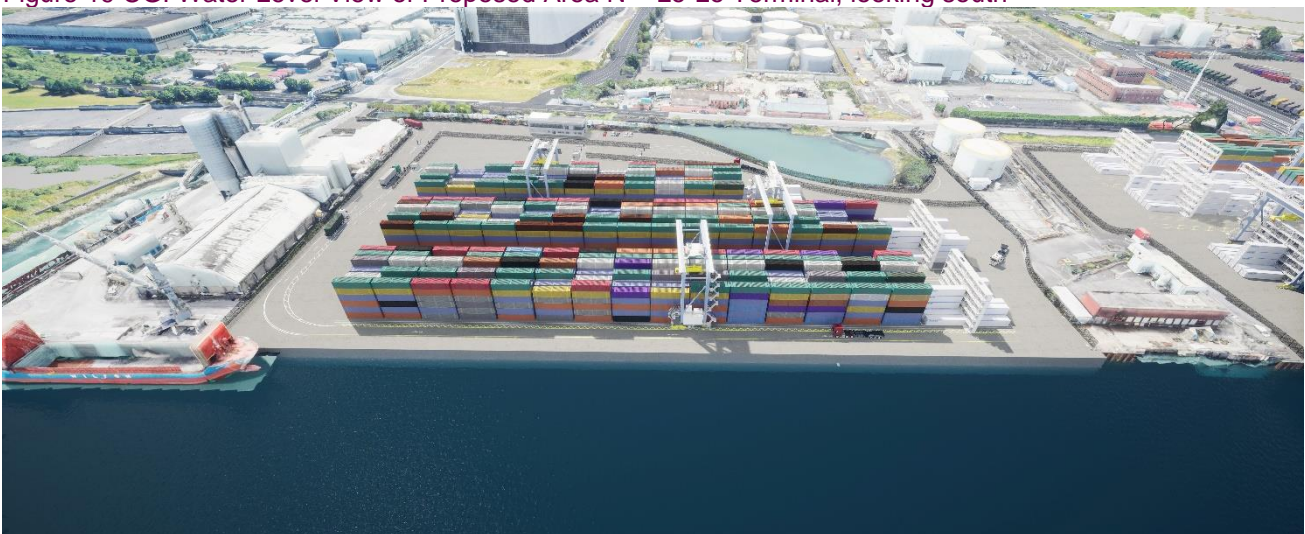


Figure 20 CGI Aerial Image of Proposed Area L – Lo-Lo Terminal, looking south

3. Replacement of the existing Lo-Lo container terminal, currently operated by Marine Terminals Limited (MTL), with a **new Roll-On Roll-Off (Ro-Ro) Terminal** with an annual throughput capacity of 360,000 Ro-Ro units or 8.69m tonnes (Figure 21 to Figure 23).

The Ro-Ro Terminal will consist of two main components:

- A terminal to be located at existing Berths 42 – 45 including provision of two berths, each with a single tier Ro-Ro ramp, plus associated cargo handling facilities (Dublin Port Masterplan Area K).
- The terminal will operate in conjunction with a transit Ro-Ro trailer yard located on DPC-owned land on the southern side of the Poolbeg Peninsula (Dublin Port Masterplan Area O).

This combined terminal will accommodate Ro-Ro vessels of up to 240m length, primarily from continental Europe.



Figure 21 CGI Aerial Image of Proposed Area K – Ro-Ro Terminal from riverside, looking southeast



Figure 22 CGI Aerial Image of Proposed Area K – Ro-Ro Terminal from landside, looking north



Figure 23 CGI Aerial Image of Proposed Area O – Ro-Ro Terminal, from Port Park looking east

4. Provision of a **325m diameter ship turning circle** in the river channel north of Pigeon House Harbour, dredged to a depth of -10.0m CD (Figure 24).

The ship turning circle will enable safe navigation and efficient manoeuvring of vessels up to 240m in length. The boundary with Masterplan Area M (47A Hardstand) will comprise a vertical steel combi-wall. The construction of the Turning Circle will require the demolition of the existing Sludge Jetty.



Figure 24 Example visual scene from HR Wallingford's Ship Simulator, illustrating the Turning Circle in use. Turning Circle shown indicatively in red. View looking west.

5. Construction of a **Maritime Village** at Pigeon House Road and Berth 41 (Figure 25 to Figure 29).

This village will accommodate local rowing, sailing, and boat clubs and will provide a significantly enhanced public realm and facilities on the waterside. It will also accommodate the relocation of Port Harbour Operations from the North Port Estate.

The 3FM Project will require the demolition of the existing Poolbeg Yacht & Boat Club and the Stella Maris Rowing Club buildings, to make way for the proposed SPAR. The existing facilities will be replaced by the construction of the Maritime Village which will have a significantly larger footprint including the hinterland to Berth 41 (currently part of the existing Lo-Lo Container Terminal operated by MTL).



Figure 25 CGI Aerial Overview Image of Proposed Maritime Village and interface with SPAR, looking north



Figure 26 CGI Water Level View of Proposed Maritime Village, Harbour Operations and fuel berth pontoons, looking south



Figure 27 3D View of Proposed Maritime Village from Public Plaza North, adjacent to Harbour Operations Building looking southwest back at boat clubs



Figure 28 3D View of Proposed Maritime Village looking eastwards along dockside promenade towards Harbour Operations



Figure 29 3D Aerial View of Proposed Maritime Village, looking northeast

6. Construction of **Community Gain** elements (Figure 30 to Figure 31).

Integrating Dublin Port with Dublin City and its people is a core objective of the Masterplan for Dublin Port. Development of proposed new public amenities on the Poolbeg Peninsula as part of the 3FM Project will provide **community gain** and contribute towards integrating the port with the city. Proposed new public amenities include:

Enhanced **recreational amenity** through:

- **7km of new or upgraded Active Travel Path** (cycle, pedestrian, wheelers etc.) **and 4.9km of new or upgraded footway** for the North Port Estate, SPAR and Poolbeg Peninsula, which will link with the 1.4km Liffey Tolka Greenway in the North Port Estate, and from there to the 4.0km Tolka Estuary Greenway currently under construction by Dublin Port. DPC will also provide Dublin City Council with a €5 million contribution for future upgrading of the existing coastal path along the southern perimeter of the Poolbeg Peninsula.
- Development of a **sailing, rowing and maritime campus** (Maritime Village) adjacent to the existing Poolbeg Yacht and Boat Club in consultation with local yacht and boating clubs, including a public slipway and facilities for maritime skills training.
- Provision of recreational space in the form of **Port Park and Wildflower Meadow** (2.5ha), and **Coastal Park** (1.6ha)
- Provision of a 1.1ha extension to **Irishtown Nature Park**.



Figure 30 3D View of the Proposed Port Park, view looking east towards the sports pitches



Figure 31 3D View of the Proposed Port Park, view looking northeast along the Active Travel link to Coastal Park

Enhanced **public realm** through:

- Development of a new **public plaza** as a key part of the Maritime Village.
- Extensive **boundary softening** works adjacent to the development sites forming part of the 3FM Project.

Community support through:

- Establishment of a new €2 million **Community Benefit Fund** for Education, Heritage & Maritime Training Skills projects within the Poolbeg area. The initial capital for the Fund will be administered by DPC in consultation with local stakeholders.

Heritage & Biodiversity enhancements through:

- Commissioning a new **Public Access Feasibility Study** regarding the Great South Wall so as to identify improved public interpretation, accessibility, facilities and conservation possibilities.
- Provision of up to €1 million **funding to implement the study recommendations**.
- Construction of an additional permanent marine structure (dolphin) to **expand the available habitat and range of the Dublin Port Tern Colonies**.
- Provision of Interpretative Markers to delineate the alignment of the Great South Wall (GSW)

Other significant ancillary works include:

- Improvements to the existing road network in both the North and South Port, linking and providing access to the port terminals, including new signal-controlled junctions and a new roundabout on Pigeon House Road;
- Improved pedestrian access from Irishtown to the proposed Maritime Village; and
- Demolition of the existing Poolbeg Oil Jetty and Sludge Jetty.

5.3 Construction Sequence

A construction sequence has been developed for the 3FM Project over the proposed 15-year construction period to inform the environmental appraisals set out within the EIAR (Figure 32). A 15-year construction period is required given the scale of the proposed development and the overriding imperative to ensure that Dublin Port continues to operate effectively during construction which will require works to be staged in distinct phases.

A summary of the construction sequence is presented in Figure 29. It is important to note that the actual construction sequence is likely to vary over the 15-year construction period due to the difficulty of undertaking the redevelopment of brown-field sites within a working port of national importance. The construction sequence presented is therefore indicative only but is designed to represent a 'worst case scenario' for environmental assessment.

An outline proposed project phasing of the key work elements over a 15-year project period, with a potential commencement in 2026, is presented. The construction programme serves to illustrate the necessity for a 15-year permission, given the scale and complexity of the project, with the clear illustration of the quantum of works to be undertaken after Year 10. Precise phasing and timing of work elements may be subject to some change. Following permission for the proposed development, if granted, there will be a period of approximately 12-18 months during which initial design and procurement will take place before construction commences.

Road upgrades will be undertaken at the outset of the project to facilitate access to construction logistics zones and to the key 3FM Project sites.

The proposed Ro-Ro Terminal located on DPC-owned land on the south side of the Poolbeg Peninsula (Masterplan Area O) and the proposed Lo-Lo Terminal yard adjacent to the Liffey (Masterplan Area L) will be used for landside and marine logistics respectively for up to the first 10 years of the project duration. An area at North Wall Quay Extension will also be used for marine logistics during construction of the SPAR.

Tree planting and landscaping will be undertaken early in the project to create green buffer zones, particularly around Masterplan Area O that will provide a barrier to mitigate visual impacts.

Construction of the Turning Circle and Lo-Lo Terminal (Masterplan Area N) will commence at an early stage in the project which includes the construction of the open-piled wharf at Area N. Both will entail capital dredging which will be confined to the winter months (October to March).

The proposed Tern Colony will be constructed at an early stage of the construction of the open-piled wharf at Area N.

The completion of the new Lo-Lo Terminal at Masterplan Area N will allow the existing Lo-Lo Terminal, currently operated by MTL, at Masterplan Area K to be relocated to Area N. This in turn will free up Berth 41 for the construction of the buildings associated with the Maritime Village and Port Operations. This work will be completed prior to demolition of the existing Poolbeg Yacht & Boat Club and Stella Maris buildings to allow for the continuous operation of the marina. Public Realm space will then be constructed on the site of the existing buildings and environs.

The freeing up of space at Area K also allows for the construction of the new Ro-Ro Terminal.

The next stages in the construction of the 3FM Project will focus on the SPAR Bridge, SPAR Viaduct and the Maritime Village berths. To enable these works to proceed, the existing yacht swinging moorings will be removed and temporary pontoons put in place along North Wall Quay Extension, to accommodate the displaced yachts. This will enable the construction of the SPAR Bridge, and capital dredging in advance of the construction of the SPAR Viaduct. At this point in the construction sequence the existing marina berths will continue to operate as normal.

After the SPAR Bridge and SPAR Viaduct works are well advanced, permanent pontoons will be installed to form the western portion of the new marina. This will allow sailing craft using the existing marina to relocate to this new facility. Temporary access arrangements will be put in place to transfer boat owners between the western portion of the new marina and landside facilities by boat (such as the Liffey Taxi).

This in turn will free up the use of the existing marina which will be demolished to allow further capital dredging, completion of the SPAR Viaduct and the eastern portion of the new marina.

Construction of the Lo-Lo Container Yard at Masterplan Area L and Ro-Ro Terminal at Area O are required after Year 10 of the 3FM Project, when the sites are no longer needed as logistics areas. This timing also suits the expected growth in cargo from the Lo-Lo Terminal at Area N and the Ro-Ro Terminal at Area K.

Remaining community gain elements, including Port Park, Wildflower Meadow and the extension to Irishtown Nature Park will also be completed within the final five years of the project.

The construction sequence, described above, has been designed to enable the construction works to proceed without significant disruption to existing port operations and to enable the continued use of the marina facilities

at Poolbeg. However, to satisfy these constraints, the construction of the SPAR Bridge can only be completed towards the end of the construction sequence. The transportation of plant, materials and construction staff to site must therefore use the existing road networks. Consequently, the construction sequence has been used to derive an estimate of the maximum envisaged construction traffic volumes in order to undertake a robust assessment of the maximum potential impact on the local road network, in combination with other planned construction activity in the area, and to assess the maximum potential impact at sensitive receptors with regard to Noise and Air Quality.

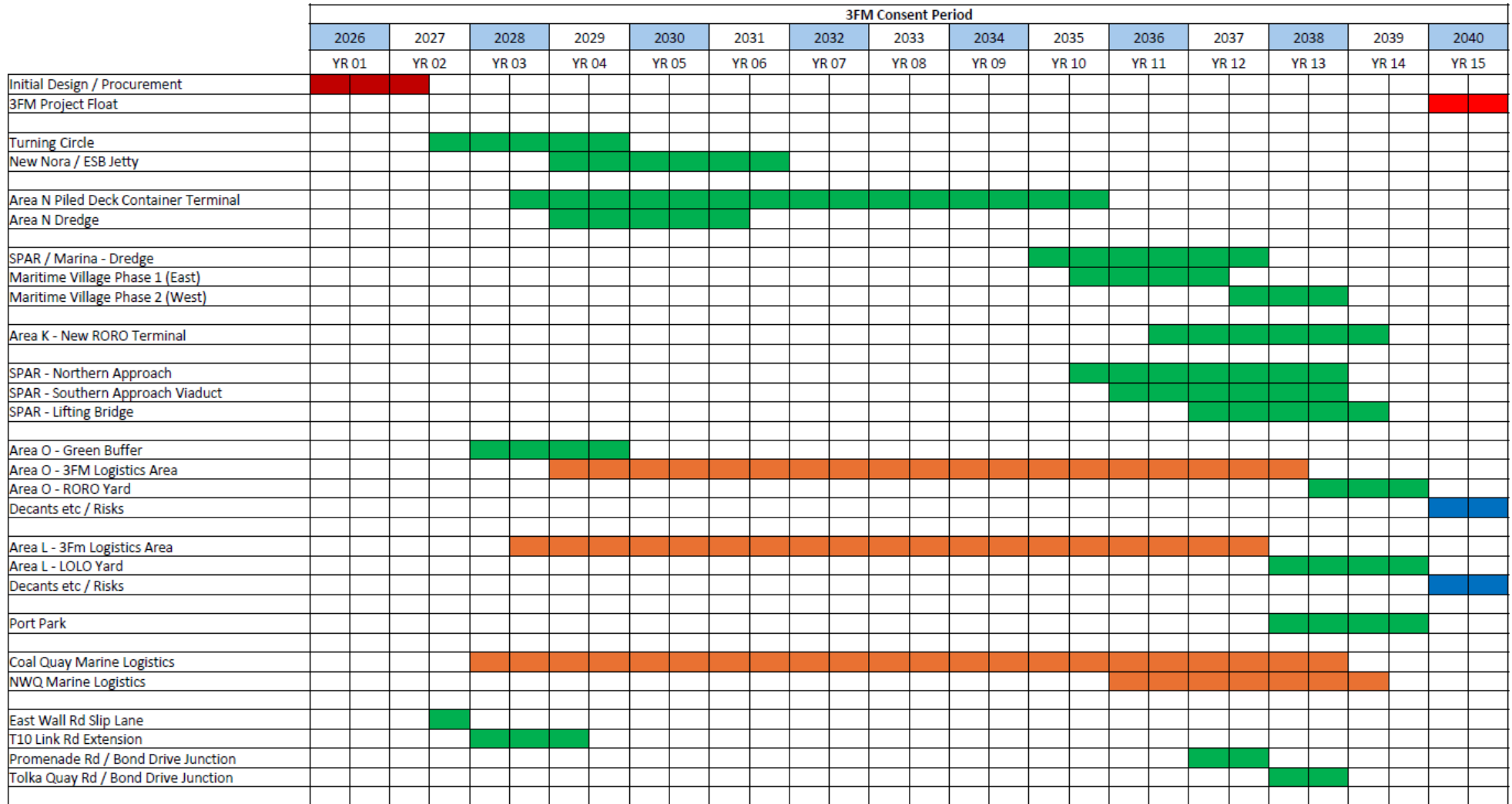


Figure 32 Sequencing Programme

5.4 Dredging and Disposal Works

The volume of capital dredging required for each element of the works, as described in the previous sections, is tabulated in Table 10. Areas of proposed dredging works are shown in Figure 33.

Table 10 Dredging Summary

| Element of Work | Reference within EIAR | Dredged Depth | Volume |
|-----------------------------------|-----------------------|--|--------------------------------|
| Area N – Proposed Lo-Lo Terminal | Section 5.2.2 | -13.0m CD | 533,000 m ³ |
| | | -3.0m CD | 72,000 m ³ |
| Area K – Proposed Ro-Ro Terminal | Section 5.2.4 | Pocket for scour protection -12.5m CD | 13,000 m ³ |
| Turning Circle | Section 5.2.5 | -10.0m CD | 444,000 m ³ |
| Maritime Village | Section 5.2.6 | -3.0m CD | 197,000 m ³ |
| Total Volume to be dredged | | | 1,259,000 m³ |

In order to determine the suitability of the marine sediments for disposal at sea, a comprehensive sediment chemistry sampling and analysis programme was carried out as described in Chapter 8 Land, Solis, Geology and Hydrogeology. The full results of the sediment chemistry sampling and analysis were provided to the Marine Institute who examined the results in detail in combination with other relevant data held by the Marine Institute.

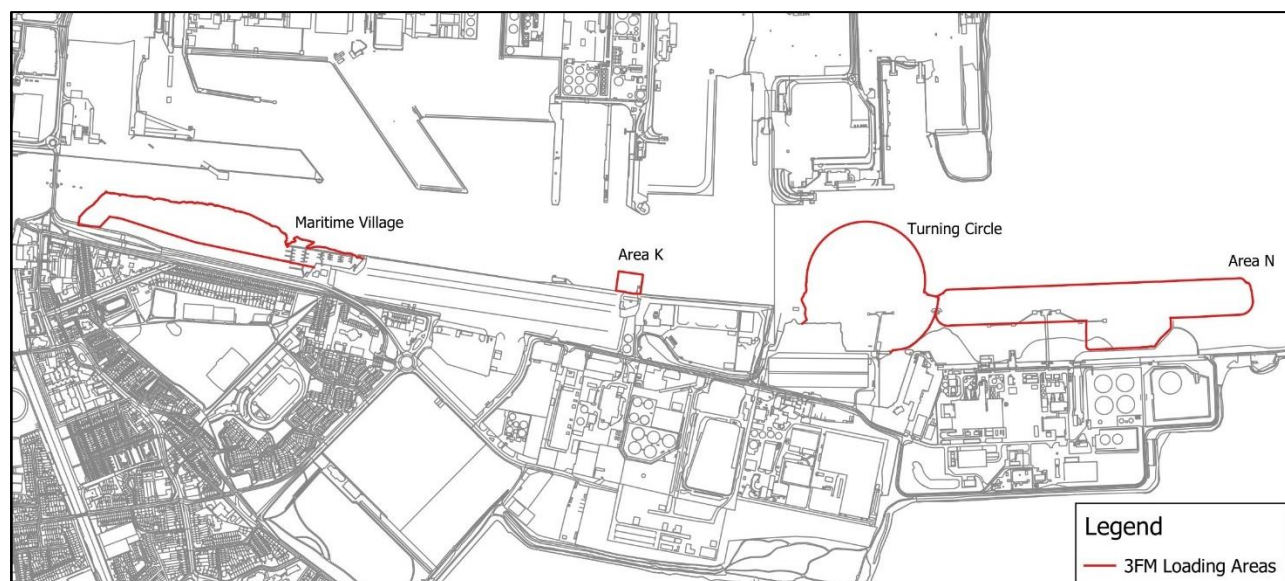


Figure 33 Location of dredging (loading) sites

The Marine Institute confirmed that they have no objection to the disposal of the following dredged sediments at the licensed offshore disposal site, located at the approaches to Dublin Bay west of the Burford Bank:

- Area K - Ro-Ro Terminal – Localised Scour Protection to 220 kV cables;
- Turning Circle; and
- Area N - Lo-Lo Terminal Berthing Pocket.

These marine sediments can therefore be classified as Class 1 (Uncontaminated: no biological effects likely).

The Marine Institute however, considered the top 1.0m of material at the Maritime Village to contain widespread levels of Class 2 material making it unsuitable for disposal at sea, equating to 70,000m³ or 6% of the total volume required to be dredged. The underlying sediments were considered suitable for disposal at sea.

The Marine Institute's recommendation is summarised in [Table 11](#).

Table 11 Capital Dredging – Suitability of Dredged Material for Dumping at Sea

| Location | Dredged Depth | Volume |
|---|---------------|--------------------------------|
| Maritime Village | -3.0 m CD | 197,000 m ³ |
| Area K - Ro-Ro Terminal – Localised Scour Protection to 220 kV cables | -12.5 m CD | 13,000 m ³ |
| Turning Circle | -10.0m CD | 444,000 m ³ |
| Area N - Lo-Lo Terminal Berthing Pocket | -13.0 m CD | 533,000 m ³ |
| | -3.0m CD | 72,000 m ³ |
| Total Dredge Volume | | 1,259,000 m³ |
| Volume not suitable for disposal at sea (top 1.0m at Maritime Village) | | 70,000 m³ |
| Total Dredge Volume suitable for disposal at sea | | 1,189,000 m³ |

5.4.1 Loading and Dumping of Dredged Material Suitable for Disposal at Sea

The capital dredging works will be carried out using a trailing suction hopper dredger and/or a backhoe dredger. Other ancillary equipment will include a survey vessel and a bed-leveller to remove peaks and troughs created by the dredger. All capital dredging works will take place within the period October to March.

It is proposed to dispose of the majority of the dredged material (1,189,000 m³) at the licensed disposal site at the entrance to Dublin Bay located to the west of the Burford Bank, presented in [Figure 34](#). Alternative options to disposal at sea were considered and are presented in Chapter 4 of this EIAR.

The loading and dumping of the dredged material will be subject to a separate Dumping at Sea Permit from the Environmental Protection Agency (EPA).

5.4.2 Consideration of options for removal of Class 2 Material at Maritime Village

The Class 2 element of dredged sediment from the Maritime Village, which is unsuitable for disposal at sea, will be dredged and brought ashore using a backhoe. The disposal options of the Class 2 material will, in order of preference, be:

1. Filled to Berth 52/53 under a revised Industrial Emissions (IE) licence subject to availability of receptor capacity;
2. Recovered at a soil recovery or soil treatment facility in Ireland subject to testing of the sediments in line with the selected facility licence at the time of the works;
3. Recovered at a soil treatment facility in Great Britain or northern Europe; or

4. Disposed of at a licenced landfill facility in Ireland.

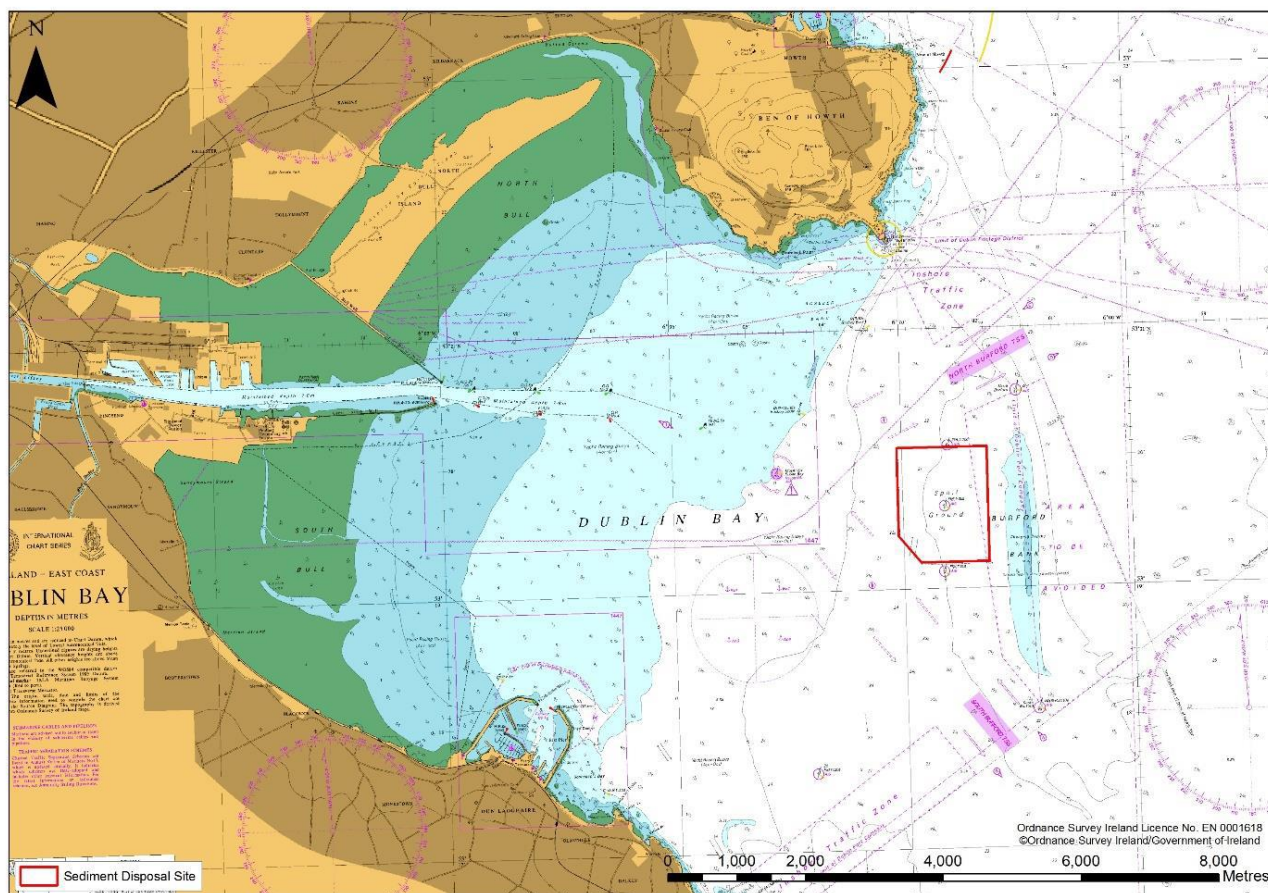


Figure 34 Location of licensed offshore disposal site

5.5 Piling Works

Piling works are required on land to provide the foundations of buildings and within the Liffey to provide the marine infrastructure required for the 3FM Project. Piling within the marine environment gives rise to underwater noise which has the potential to adversely impact on marine mammals and fish, without appropriate mitigation measures being put in place. Details of the piles required in the marine environment are set out in Table 12.

Table 12 In Water Piling Works

| Location | Permanent Works | Pile Diameter/Width | Pile Thickness | Installation method |
|--------------------------------|-----------------|---------------------|----------------|--|
| SPAR Bridge | Y | 1.2 m dia. | n/a | Bored reinforced concrete, within dewatered sheet pile cofferdam |
| SPAR Bridge Dolphins | Y | 0.81 m dia. | 22mm | Vibration and impact driving |
| SPAR Bridge Cofferdams | N | 1.4m wide pair | | Vibration and impact driving |
| SPAR Bridge Causeway | N | 0.8m dia. | | Vibration and impact driving |
| SPAR Bridge Temporary Dolphins | N | 1.0m dia. | | Vibration and impact driving |
| SPAR Viaduct | Y | 1.2 m dia. | 10mm | Vibration driving |

| Location | Permanent Works | Pile Diameter/Width | Pile Thickness | Installation method |
|---|-----------------|--------------------------|----------------|------------------------------|
| SPAR Viaduct Mooring Guides | N | 0.75-0.9m | | Vibration and impact driving |
| Maritime Village, Marina Finger Berth Guide Piles | Y | 0.61 m dia. | 25.4mm | Vibration and impact driving |
| Area K - Ro-Ro Terminal, King Piles | Y | 1.42 m dia. | 25.4mm | Impact driving |
| Area K - Ro-Ro Terminal, Infill Sheet Piles | Y | 1.4 m wide pair | 9mm | Vibration driving |
| Area K – Ro-Ro Terminal, Ro-Ro Ramp Guides | Y | 2.4 m dia. | 40mm | Impact driving |
| Area L/Turning Circle, Ro-Ro Ramp Guides | N | 1.07 and 1.22m dia. | 25.4mm | Impact driving |
| Turning Circle, King Piles | Y | 2.03m dia. | 22mm | Impact driving |
| Turning Circle, Infill Sheet Piles | Y | 1.6m wide pair | 12.5mm | Vibration driving |
| Area N – Lo-Lo Terminal | Y | 1.63 m dia. 1.22m | 22mm 18mm | Impact driving |
| Oil Terminal Dolphin | Y | 1.02 m dia. 1.47m dia | 22mm 22mm | Impact driving |
| Tern Colony | Y | 0.51m dia | 22mm | Impact driving |

5.6 Source of Fill Material

Suitable infill material (granular fill and crushed rock) is required for a range of construction activities within the 3FM Project including the requirement to raise the height of building floor levels and hardstand areas within the Maritime Village to reduce the risk of flooding, taking into account the predicted increase in tidal heights as a result of climate change. It is intended to use a combination of quarried fill and suitable Construction and Demolition Waste arising from demolition works within the 3FM Project site.

Larger rock armour is also required to form part of the boundary of the Turning Circle.

The total volume of infill material required is circa 96,000 m³ which equates to circa 172,800T.

Suitable infill and rock armour material will be sourced from authorised quarries and will be imported by road to the 3FM Project site. The majority of this material will be sourced from within the Greater Dublin region. The availability of potentially suitable quarries is presented in [Figure 35](#). Quarries from which fill material shall be extracted for use in the 3FM project must have been registered with the local authority and have the necessary planning permission and other consents in place for the extraction, processing and haul of such material.

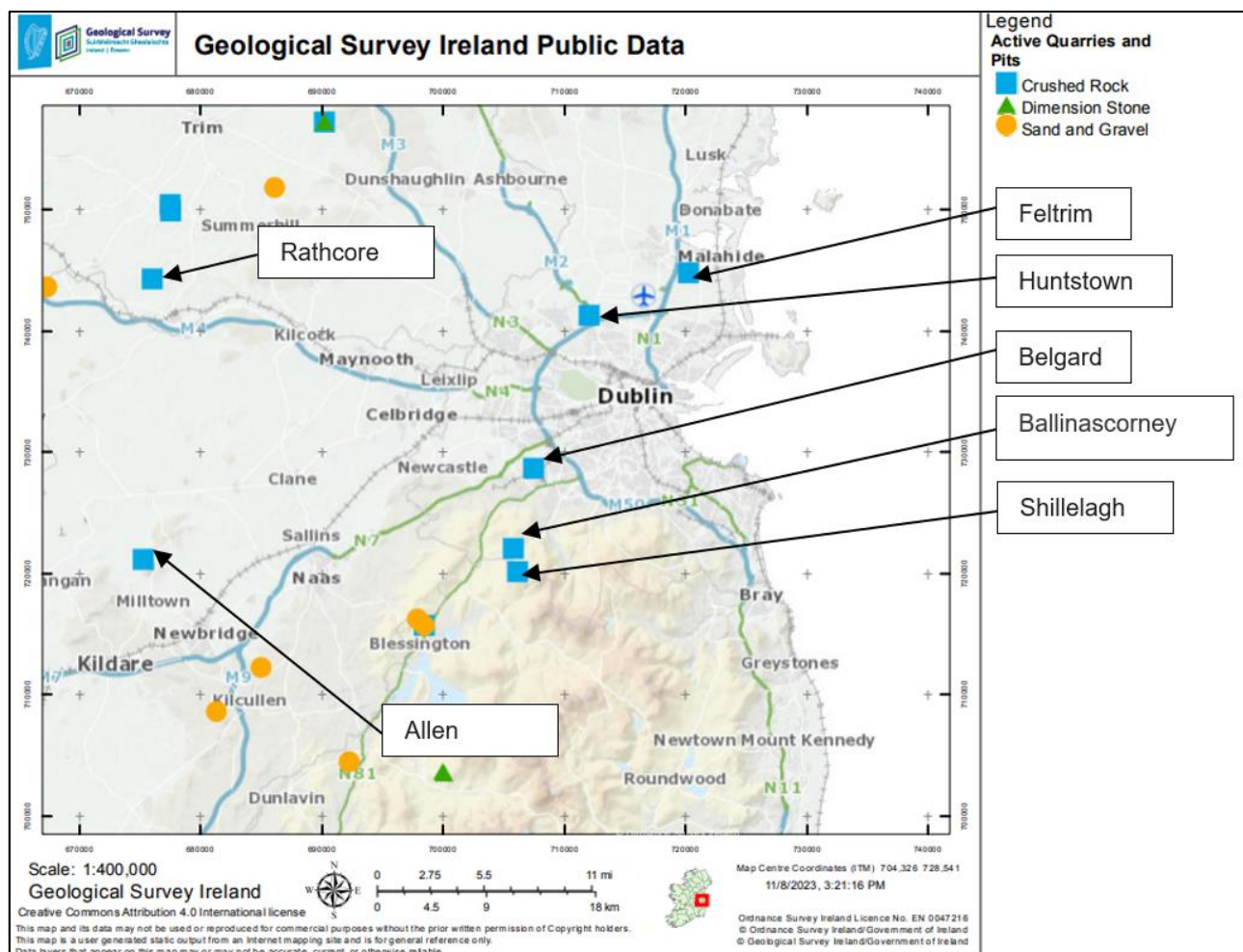


Figure 35 Map of active quarries in vicinity of Dublin Port (Source: GSI)

The distance between these potentially used quarries and the 3FM Project site and the haul routes to be taken are presented in Table 13.

Table 13 Potential Quarries, Distance to the 3FM Project Site

| Quarry Name | Location | Council Licensed / Registered | Availability to Provide Required Engineering Fill | Figure Reference | Distance to Site |
|-----------------------|--|-------------------------------|---|------------------|------------------|
| Feltrim Quarry | Swords, Co. Dublin. | ✓ | ✓ | Feltrim | 17km |
| Huntstown Quarry | North Road, Finglas, Dublin 11. | ✓ | ✓ | Huntstown | 21km |
| Rathcore Quarry | Kilsaran Build, Rathcore, Enfield, Meath. | ✓ | ✓ | Rathcore | 62km |
| Allen Quarry | Kilmeague, Naas, Kildare. | ✓ | ✓ | Allen | 87km |
| Shillelagh Quarries | Aghfarrell, Brittas, South County Dublin. | ✓ | ✓ | Shillelagh | 23km |
| Ballinascorney Quarry | Kilsaran Build, Ballinascorney, South County Dublin. | ✓ | ✓ | Ballinascorney | 21km |
| Belgard Quarry | Fortunestown, Tallaght, Dublin. | ✓ | ✓ | Belgard | 18km |

The Haulage Route from each of the quarries will be obliged to approach the 3FM Project site via the Dublin Tunnel, East Wall Road, Tom Clarke Bridge and R131. No HGV construction traffic will be permitted through residential areas.

The transportation of fill material to the 3FM Project site has been taken into account within the assessment of Construction Traffic.

5.7 Working Hours

Where construction activity takes place for the redevelopment in the vicinity of residential properties, the activities will operate between the hours of 07:00 and 19:00 on Monday to Fridays, between 08:00 and 13:00 on Saturdays and there will be no activity on Sundays or Bank Holidays. Where additional or alternative working hours are required, these will be agreed in advance with DCC. Capital dredging works are remote from residential properties and will be undertaken on 24 hours/7 days per week basis during dredging campaigns.

5.8 Construction Traffic

Construction traffic will arrive at and depart from the port via the national road network. All HGV movements will comply with the DCC HGV Management Strategy. Within the Dublin Port Estate, traffic will be routed through the existing road network to reach the proposed 3FM Project site.

The Construction Sequence Programme for the 3FM Project has been used to determine future construction traffic on the road network. Two aspects of site traffic have been analysed. These numbers include: 1) staff vehicles arriving or leaving the site (i.e. a one-way trip), and 2) construction traffic which includes deliveries to the site (excludes site staff and are also one-way trips). As both counts represent one-way trips, the graph numbers represent the outbound and return trips to the site, rather than a singular return journey.

The predicted number of one-way trips of construction traffic per half-year over the duration of the project is presented in [Figure 36](#). Staff vehicles throughout the programme are presented in [Figure 37](#). A factor of 2 for Vehicle Occupancy Rate (VOR) was used when calculating staff vehicles to allow for car sharing, public transport access, cycling, etc given the toll costs and travel at peak times (i.e. the estimated number of daily staff is double the daily staff vehicle value).

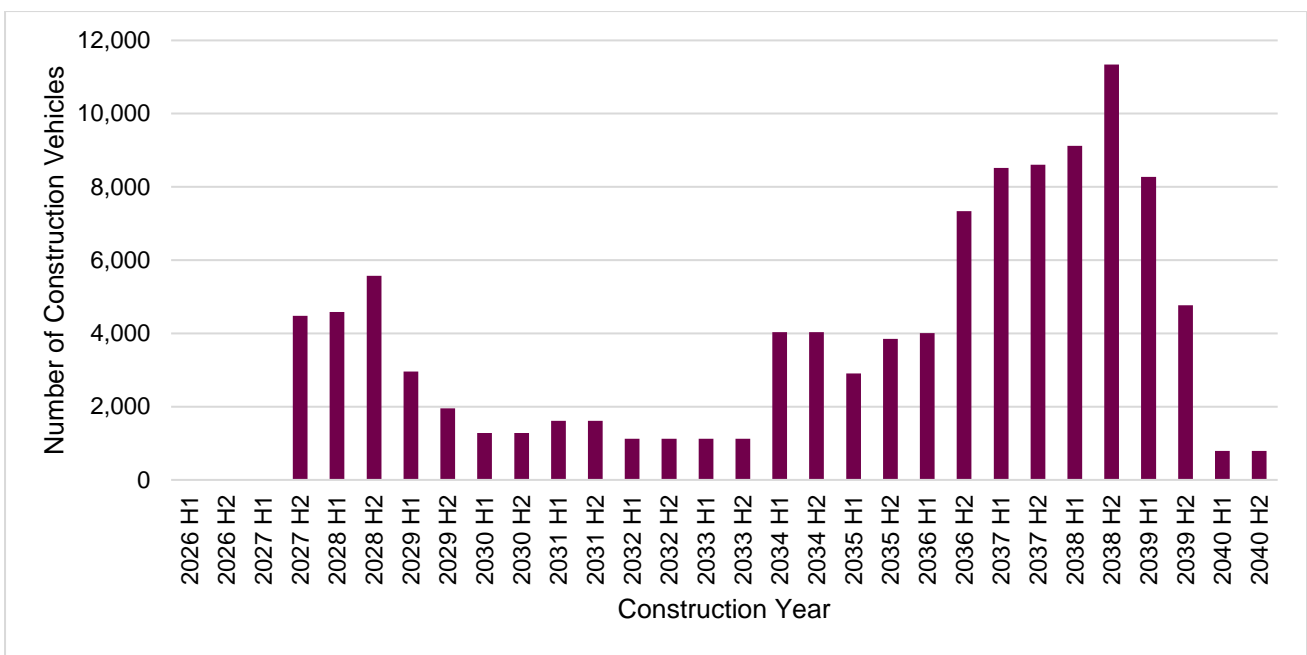


Figure 36 Construction traffic (excluding site worker vehicles) present during 3FM construction programme. Construction vehicle numbers equate to one-way traffic trips, presented per half year.

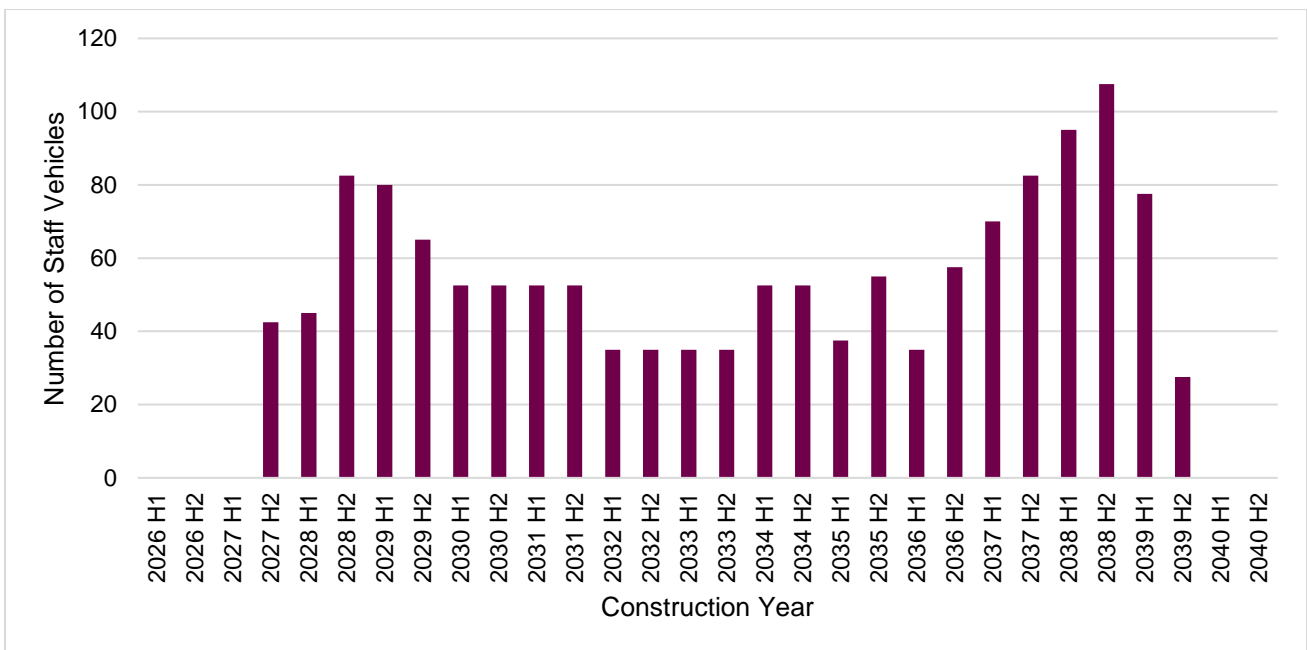


Figure 37 Staff vehicles present daily during the 3FM construction programme. A factor of 2 for Vehicle Occupancy Rate (VOR) is used to allow for car sharing, public transport access, cycling, etc given the toll costs and travel at peak times (i.e. the estimated number of staff is double the value in the graph).

The peak vehicle trips (11,338 one-way trips, or 5,669 return trips) and staff numbers (108 staff vehicles, or 216 personnel) are expected in the second half of 2038. This phase of the programme includes the construction of Phase 2 of the Maritime Village, Plot K (New RORO Terminal), the Northern Roads, Plot LOLO Yard, and the SPAR. During the construction programme, an average of 3,608 one-way traffic trips (approximately 1,804 return journeys) are expected per six month period. Regarding staff vehicles accessing and exiting the site, the average will be 47 staff vehicles per day.

5.9 Construction Environmental Protection Measures

A series of 3FM Project construction environmental protection measures have been developed through the preparation of this EIAR whose primary objective is to identify the baseline environmental context of the proposed development, predict potential beneficial and/or adverse effects of the development during the construction phase, and propose appropriate mitigation measures where necessary. Details of the proposed mitigation are set out in individual chapters dealing with the various relevant environmental factors, and a 3FM Project-specific Construction Environmental Management Plan has been prepared to ensure effective implementation of required mitigation and best practice measures.

Integration of the engineering design team with the planning and environmental team from an early stage in the project has enabled mitigation by design to be used, causing many potential significant effects to be eliminated or reduced to an acceptable level during the preliminary design stage.

A prime example is the construction of the proposed Lo-Lo Terminal at Area N. This has been a key environmental consideration due to the following factors:

- It is located within the foreshore of the inner Liffey channel which is used by migratory fish, including Salmon, Sea Trout and Eel;
- Its western boundary lies close to the Tern Colony which occupies the ESB Dolphin and is included within the South Dublin and Tolka Estuary SPA
- Its southern boundary lies close to the Great South Wall;
- Its eastern boundary lies close to natural foreshore which is an important feeding area for waterbirds at low water including species identified as Qualifying Interests of the nearby South Dublin and Tolka Estuary SPA such as Black-tailed Godwit.
- It lies north of the ESB Poolbeg Generating Station and adjoins its Cooling Water intakes and outlet channel. The outlet channel also receives the treated effluent from Ringsend Wastewater Treatment Plant.
- Its proposed location is currently occupied by the Poolbeg Oil Jetty which supplies hydrocarbons to NORA.
- It lies immediately south of the main Dublin Port navigation channel.

In light of the environmental constraints, the wharf required to support the Area N - Lo-Lo Terminal has been designed as an entirely open-piled structure. This design minimises the impact of the structure on the natural tidal flows of the inner Liffey channel and will therefore not cause any significant impediment to migratory fish.

The open-piled design also ensures that there is no significant change to the dispersion characteristics of the thermal plume discharge from the Cooling Water outlet channel. Similarly, there will be no significant change to the dispersion characteristics of the treated effluent discharge from Ringsend Wastewater Treatment Plant.

The western end of the wharf has been designed to avoid the Tern Colony, leaving a 50m gap between the wharf and the Tern Colony. A 4.0m fence will be erected along its western perimeter to prevent a visual que between nesting terns and people working on the wharf.

The eastern end of the wharf has been designed to avoid the natural waterbird feeding grounds by terminating the wharf at the Cooling Water weir.

The wharf has also been designed as a standalone structure to enable a circa 10m buffer to be created between the wharf and the Great South Wall.

Automated mooring systems have been incorporated into the design to ensure the safe navigation of ships berthing and ships passing the berth.

The construction sequence has been designed to ensure uninterrupted operation of NORA during the construction phase of the project.

Mitigation by avoidance has also been used, where possible.

5.9.1 Construction Environmental Management

The 3FM Project construction works will be undertaken in compliance with a Construction Environmental Management Plan (CEMP) which will include all measures identified in the draft CEMP which have been brought forward from the environmental assessments undertaken during the preparation of this EIAR as well as any additional measures required pursuant to conditions of development consent. A draft CEMP has been prepared to enable a comprehensive assessment of the construction phase of the 3FM Project and forms part of the application for permission (under separate cover).

5.9.2 Operational Phase

The key objective of the 3FM Project is to increase the throughput of cargo by providing the infrastructure required to maximise the efficient use of existing port lands. A description of the existing port operations forms part of the application for permission (under separate cover). There are no significant changes to the existing types of port operations, processes and activities (regular and occasional) proposed by the 3FM Project.

DPC is a member of EcoPorts - the main environmental initiative of the European port sector - and is accredited to the certified Port Environmental Review System (PERS) standard. PERS incorporates the main general requirements of recognised environmental management standards (e.g. ISO 14001), but also takes into account the specificities of ports. PERS builds upon the policy recommendations of European Sea Ports Organisation (ESPO) and gives ports clear environmental objectives to achieve sustainable development. DPC is committed to continued PERS membership to achieve the highest certified performance standards throughout all aspects of its operation.

The following maintenance, pollution control and navigational measures will be implemented.

5.9.2.1 Maintenance

During the operational stage, maintenance of the newly developed infrastructure will be required. DPC has a comprehensive maintenance programme in place for all its assets, supported by documented procedures, to ensure the upkeep and efficient operation of the port.

All new infrastructure and operations at new facilities will fall within the scope of DPC's existing maintenance and environmental management protocols.

There is an ongoing requirement for maintenance dredging to be carried out within the navigation channel and berthing pockets in the port. This requirement will extend to the new berths and the turning circle. All future maintenance dredging will be subject to statutory consents, including a Dumping at Sea Permit from the EPA.

5.9.2.2 Pollution Control

Surface Water

DPC has considered best environmental practices and relevant environmental legislation, such as the Water Framework Directive, in the design and management of its surface water drainage systems. These systems include sufficient capacity, attenuation, and appropriate interceptor separators to minimise risks to receiving waters and ensure compliance with relevant legislation. Design of systems has also considered and incorporated Sustainable Drainage System (SuDS) principles where possible, for example drainage of pathways to permeable surfaces at Port Park. Appropriate bunding of storage tanks will be installed where required.

DPC operates a programme of regular inspection, cleaning and maintenance of the surface water drainage system, including surface water interceptors, within Dublin Port which is supported by documented procedures. Procedures for handling drain cleaning waste are also in place. This inspection, cleaning and maintenance programme will be extended to include all new port drainage systems created or altered as part of the 3FM Project.

Wastewater

Wastewater from new infrastructure will be collected in foul sewer systems that are fully compliant with Uisce Éireann requirements, and discharged by gravity, or through wastewater packaged pumping stations if required, to the public sewer, subject to Uisce Éireann approval, for treatment at Ringsend WwTP. It is not anticipated that there will be a significant increase in the peak wastewater discharge to the public sewer as a result of the development (see Chapter 15 Material Assets – Services).

All new wastewater infrastructure and operations at new facilities will fall within the scope of DPC's existing maintenance and environmental management protocols.

Waste Disposal from Vessels

All waste from berthed vessels will be handled and disposed of in accordance with the Dublin Port Waste Reception and Handling Plan, which meets the requirements of EU Directive 2019/883 of the European Parliament and of the Council on port reception facilities for the delivery of waste from ships, and S.I. No. 296 of 2021: European Union (Port Reception Facilities for the delivery of waste from ships) Regulations 2021.

The reception facilities for ship and port waste are assessed continually. At this time Dublin Port accepts MARPOL Annex V waste – garbage. DPC requires that contractors and suppliers engaged by the Waste Contractor shall demonstrate commitment to maintaining a high level of safety management conforming to all relevant legal requirements as well as relevant DPC policies and procedures.

The Plan covers the port area under the jurisdiction of DPC, and includes facilities at the following areas: Terminal 1, Terminal 2, Terminal 3, Terminal 5, Alexandra Quay West, Ocean Pier, Alexandra Quay East, Dublin Freight Terminal, MTL, Coal Quay, Poolbeg Jetty, Berth 18, Sir John Rogerson's Quay, Oil Zone Berths and Alexandra Basin West New Berths. It will be extended to include any additional facilities delivered by the 3FM Project.

Ship to Shore Power

Ship to Shore Power infrastructure will be provided for vessels berthed at Area N – Lo-Lo Terminal and Area K - Ro-Ro Terminal. This will provide required hoteling load for vessels, allowing engines to be turned off when vessels are berthed. This will result in significant reductions in fuel consumption and in emissions to air.

5.9.2.3 Navigation

The proposed development will require updating of the appropriate navigation charts for the area. This will be completed through consultation with the UK Hydrographic Office. Global Positioning System navigation charts will be updated based on updates to Navigation Charts.

The development will not impact on other aspects of navigation in the port. The navigation speed limit enforceable within the harbour will apply to all new facilities. Impacts on radar, or VHF radio and other communication systems are not envisaged. The capital dredging works will significantly improve vessel manoeuvring through the provision of the Turning Circle and improved berthage at the South Estate.

Marine Notices will be issued to alert the port users and the general public to the proposed changes to the port.

5.9.2.4 Project change and decommissioning

Following completion of the construction phase of the works, all temporary works required to facilitate project construction will be removed from site. Temporary works requiring the use of temporary piles have been designed to be incorporated into the permanent works, where possible, negating the need to remove them.

There are no plans proposed for the decommissioning of the permanent marine elements of the 3FM Project given the nature of port development which can be considered as ‘permanent works’, with a 100-year design life.

The landside elements of the 3FM Project have been designed as far as possible to allow maximum flexibility to ensure sufficient space is provided to run state of the art freight facilities, with automation, electrification, vehicle booking systems etc. To provide this flexibility the proposed landside structures have been kept to a minimum, with building locations guided by existing services, and minimising disruption to the overall flow of the sites. Any changes to the landside layout which may be required, including decommissioning, will be the subject of subsequent planning consent and appropriate mitigation will be applied to any such consents.

6 RISK OF MAJOR ACCIDENTS & DISASTERS

The risk of major accidents and disasters chapter assesses the potential individual and societal risk relevant to the 3FM Project. It also describes other events (natural and other external events) that could contribute to, cause, or exacerbate a major accident at an establishment covered by the Chemicals Act (Control of Major Accident Hazards) Regulations 2015 (S.I. 209/2015) (“COMAH Regulations”) within Dublin Port, or that could directly impact on the 3FM Project, as well as the potential for a major accident at the 3FM Project site to impact on the adjacent parts of Dublin Port and the COMAH establishments.

In light of the nature of the activities that will take place at the 3FM Project site, and the nature of the surrounding environment, the most significant risks of major accidents and disasters are associated with the COMAH establishments and the ESB Poolbeg generating station (which does not qualify as a COMAH establishment).

The 3FM Project is within the vicinity of several establishments that fall within the scope of the COMAH Regulations, namely the National Oil Reserve Agency (NORA) petroleum product tank farms and the Dublin Bay Power establishments on the Poolbeg Peninsula.

Byrne Ó Cléirigh conducted a COMAH land use planning assessment for the 3FM Project, the purpose of which was to examine the development in the context of the Health and Safety Authority’s COMAH land use planning guidance, and to identify the types of development that may be compatible with the COMAH risk zones around the COMAH (and similar) establishments. Byrne Ó Cléirigh’s analysis was guided by an assessment of the likelihood of the occurrence of each perceived risk, supported by general and systemic risk assessments.

The assessment of the risk of major accidents and disasters concludes that, from a COMAH perspective, the potential direct and indirect risks arising from the 3FM Project satisfy the Health and Safety Authority’s COMAH land use planning guidance. It is also concluded that other, non-COMAH direct and indirect major accident and disaster risks arising from the 3FM Project are not significantly different from the current risks.

DPC has developed a comprehensive emergency management plan that caters for the range of accident and emergency events that may occur within its estate (or that may occur outside the estate and that have a direct, knock-on effect), and this plan is provided to the other relevant stakeholders, including An Garda Síochána, Dublin City Council, Transport Infrastructure Ireland, and the Principal Response Agencies. In the event of an incident at a COMAH establishment that could impact on people at other facilities in the port, or on road traffic entering or exiting the port, DPC will activate its Emergency Management Plan, in which case people would be directed away from the source of the hazard.

7 BIODIVERSITY, FLORA & FAUNA

The assessment of Biodiversity, Flora & Fauna identifies, describes and assesses in an appropriate manner, the direct and indirect significant effects of the 3FM Project on biodiversity. As noted in the EC (2013) Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment, biological diversity or 'biodiversity' is one of the key terms in conservation, encompassing the richness of life and the diverse patterns it forms. The 1992 UN Convention on Biological Diversity defines biological diversity as 'the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems'.

Ecological Impact Assessment (EclA) is a process of identifying, quantifying, and evaluating the potential and likely significant effects of a Project on ecological features, where ecological features are the species, habitats and biodiversity components of ecosystems that have the potential to be affected by a project. In this instance, the project is the 3FM Project and the EclA forms part of the overall EIA to be carried out by the competent authority.

As all biodiversity comprises an enormous amount of species and habitats, ecological assessment is typically divided into specialist subject areas. The biodiversity chapter contains a description of the terrestrial, marine and avian biodiversity features and designated sites (other than European sites) within and surrounding the site of proposed development, followed by an assessment of the potential and likely significant effects of the proposed development alone and cumulatively with other consented projects on terrestrial, marine and avian biodiversity features and designated sites.

It should also be noted that, in circumstances where Stage 1 Screening for Appropriate Assessment and a Stage 2 Appropriate Assessment are required to be undertaken by the competent authority, pursuant to Article 6(3) of the Habitats Directive (Directive 92/43/EC) and Irish implementing legislation, both an Appropriate Assessment Screening Report (AASR) and a Natura Impact Statement (NIS), have been prepared on behalf of DPC and submitted to An Bord Pleanála with the application or permission, in respect of the likely significant effects of the 3FM Project on designated European sites. To the extent relevant and appropriate, the Biodiversity, Flora & Fauna Chapter of the EIAR should be read in conjunction with the AASR and NIS and relevant supplementary documentation.

7.1 Terrestrial Biodiversity

An assessment of terrestrial biodiversity was undertaken following desktop review within the ZoI and habitat surveys between 2022 and 2024. The assessment of terrestrial biodiversity features concludes that there are no significant environmental impacts predicted upon terrestrial biodiversity features as a result of the construction and operation of the proposed 3FM Project. Invasive Alien Plant Species have however been recorded at locations on the Poolbeg peninsula in, or adjacent to Dublin Port lands, notably Japanese Knotweed, a regulated invasive plant species listed in the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011, as amended. A precautionary approach will be undertaken to prevent the importation and spread of Invasive Alien Species by adhering to the prevention, containment and treatment measures set out in the Invasive Alien Plant Species Management Plan (see Draft Construction Environmental Management Plan (CEMP)). Mitigation measures will be put in place during the construction phase to ensure no

disturbance to the artificial badger sett at Irishtown Nature Park by establishing an Ecological Exclusion Zone. Lighting at Pork Park and Coastal Park will be designed to enable the continued foraging and commuting of bats during the operational phase by using LED lights where possible.

7.2 Benthic Biodiversity and Fisheries

The assessment of benthic biodiversity and fisheries features concludes that the infrastructural changes associated with the 3FM Project are significant and complex and will give rise to a range of positive and negative impacts. Much of the adverse change will be offset by more positive changes, namely the introduction of new hard surfaces which are likely in the main to be rapidly colonised by both estuarine and marine flora and fauna. Temporary habitat disturbance from the dredging activities is not expected to result in any long-term impact, with recovery occurring rapidly on cessation of dredging activities. Loss of sub-tidal habitats associated with the installation of piles in particular are deemed minor due to the large amount of similar habitat present in Dublin Port. On the other hand, however, the introduction of extensive areas of shade by the SPAR Viaduct and the wharf at Area N will have negative effects on the habitats affected. However, all these changes need to be viewed in the context of the Lower Liffey Estuary as a busy port and a busy recreational boating and angling area, whose natural intertidal habitats have been dramatically altered and largely degraded down the decades. And, despite the proposed changes, the importance of the Lower Liffey as a locally important nursery ground for estuarine/marine residents and migrants will remain substantially intact and fully functional and its role as a conduit for inwardly and outwardly migrating anadromous and catadromous species for the wider River Liffey catchment will remain fully intact.

7.3 Marine Mammals

The assessment of marine mammal features concludes that significant environmental impacts are predicted upon individuals, but not populations, of marine mammals as a result of piling, dredging and demolition works during the construction of the proposed 3FM Project and in the absence of mitigation. Mitigation measures have been proposed to minimise the risk of injury or disturbance to marine mammals in the area of operations in line with National Parks and Wildlife Service (NPWS) Guidelines (2014): Effective implementation of the mitigation measures will ensure there is no significant residual environmental impact upon marine mammal features.

7.4 Avian Biodiversity

The assessment of avian features concludes that there is a low risk of any significant environmental effects upon breeding and non-breeding avifauna as a result of disturbance and displacement and in the absence of mitigation. Potential impacts are assessed to be slight/temporary to imperceptible without mitigation. A range of mitigation is proposed where necessary and there is no significant residual environmental impact upon avian features with mitigation in place.

7.5 Designated Areas

The assessment of designated sites (other than European sites) concludes that no further or additional likely significant effects are predicted upon the Irishtown Nature Park, any proposed NHA site, Ramsar site or the Dublin Bay Biosphere. With the application of the prescribed mitigation measures, there is no significant residual impacts predicted upon any designated site as a result of the construction and operation of 3FM Project.

8 LAND, SOILS, GEOLOGY AND HYDROGEOLOGY

The assessment of land, soils, geology and hydrogeology was based on a desktop study of publicly available information such as geological maps, historical borehole logs and maps, a site walkover survey and an intrusive ground investigation.

With regards to land, all of the construction and operational phase land take is contained within the 3FM Project planning permission boundary. The environmental appraisals presented in the EIAR have taken into account the environmental implications of the land resource. There are no additional mitigation measures required as a result of the environmental appraisal of land to that already set out within the EIAR.

The investigation identified that the site is underlain by made ground, sands, gravels, clay and mudstone and limestone bedrock. The EIAR has concluded that there is no loss of high fertility soils as a result of the construction and operational phase of the 3FM Project, and as a result the impact of the project on soils is considered to be neutral. The 3FM Project proposes the inclusion of soft landscaping in lieu of current hard standing made ground. As such, the importation of virgin topsoil will be an enhancement to soil resources.

Hydrogeology is the study of groundwater, including its origin, occurrence, movement and quality. The site falls within an area of low groundwater vulnerability. Groundwater was encountered within the made ground deposits and within the underlying sand and gravel deposits.

The conceptual site model developed in the assessment has identified a relevant pollutant linkage for the site with regards to ground gas within Area O and future users within buildings in this area, which can be mitigated through the implementation of ground gas protection measures. It is also considered that any potential build-up of gases due to ground improvement techniques can be managed using venting techniques, preventing any negative impact on on-site and off-site buildings and infrastructure. Real-time continuous monitoring of ground gases before, during and after the construction phase will be used to determine any significant change in the ground gas regime. The presence of asbestos in soils is a relevant pollutant linkage for construction workers and the general public during construction, however, it is considered this can be mitigated through the appropriate use of PPE / RPE and appropriate dust suppression techniques. Furthermore, the inclusion of a clean cover barrier system within Port Park & Wildflower Meadow will remove any exposure pathway to future site users associated with disturbance of asbestos in soils.

The proposed development will not have any substantial, negative impacts on the land, soils, geology and hydrogeology of the area.

Sediment chemistry sampling and analysis of marine sediments to be dredged were provided to the Marine Institute who examined the results in detail in combination with other relevant data held by the Marine Institute.

Further to consultation with the Marine Institute, DPC and their consultants RPS concluded that the following dredged sediments were suitable for disposal at sea within the licensed offshore disposal site located at the approaches to Dublin Bay west of the Burford Bank:

- Ro-Ro Terminal (Area K) – Localised Scour Protection to 220 kV cables;
- Turning Circle; and
- Lo-Lo Terminal (Area N) Berthing Pocket and an area towards the eastern end of the Wharf to enable construction using marine plant.

These marine sediments can be classified as Class 1 (Uncontaminated: no biological effects likely), subject to the formal approval of the Marine Institute.

Further to consultation with the Marine Institute, DPC and their consultants RPS, however concluded that the top 1.0m of material at the Maritime Village / Marina contained widespread levels of Class 2 material making it unsuitable for disposal at sea, equating to 70,000m³ or 6% of the total volume required to be dredged. The underlying sediments were considered suitable for disposal at sea), subject to the formal approval of the Marine Institute.

The options for disposal of the Class 2 element of dredged sediment from the Maritime Village / Marina are, in order of preference:

1. Filled to Berth 52/53 under a revised IE licence subject to availability of receptor capacity;
2. Recovered at a soil recovery or soil treatment facility in Ireland subject to testing of the sediments in line with the selected facility licence at the time of the works;
3. Recovered at a soil treatment facility in Great Britain or northern Europe;
4. Disposed of at a licenced landfill facility in Ireland.

9 WATER QUALITY & FLOODING

The assessment on water quality and flooding is based on the potential impact of the 3FM Project on water quality within the receiving environment as well as the potential for flooding to the 3FM Project site.

Baseline water quality within the receiving environment was established through review of national monitoring data used to establish water quality status in the context of the EU Water Framework Directive (WFD) and supporting environmental standards. Recent extensive high-frequency monitoring data collected over a period of six years during Dublin Port Company's ABR and MP2 Projects was also reviewed.

Using baseline water quality data and site specific water quality model simulation outputs, an assessment of the 3FM Project was conducted to determine the likelihood of significant impacts on water quality using the criteria for rating significance and magnitude as set out in the National Roads Authority (NRA) publication "*Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes*" (NRA, 2008), and appropriate mitigation measures to reduce impacts were proposed where necessary.

In circumstances where the appropriate mitigations measures are fully implemented during the construction and operational phases, the impact of the 3FM Project on water quality in the project zone of influence will be imperceptible. An assessment of potential cumulative impacts has also been made. The 3FM Project is therefore not expected to significantly impact water quality, either alone or in combination with other projects, in the receiving waters.

It can therefore be concluded that the 3FM Project works are compliant with the requirements and environmental objectives of the EU Water Framework Directive and the other relevant water quality objectives for the water bodies in which the 3FM Project is sited including the 'Liffey Estuary Lower' transitional water body, the 'Dublin Bay' coastal water body, the 'Dodder' river water body and the Tolka river water body.

The flood risk to the 3FM application area has been assessed and the predominant source of flood risk emanates from tidal flooding from the River Liffey.

Under The Planning System and Flood Risk Management Planning Guidelines, the 3FM Project site consists of areas located within Flood Zones A, B and C. The 3FM Project has a range of uses with varying degrees of vulnerability as classified under the Guidelines. A Justification Test was required for the Southern Port Access Route (SPAR) road and bridge. All of the other uses within the 3FM Project site can be considered as appropriate for the identified flood zones, and therefore a Justification Test is not required. While the combination of risk and vulnerability is such that these elements of the development are generally acceptable the risk remains, and it may change during the lifetime of the development.

Using the present day 0.5% AEP level from the Irish Coastal Wave and Water Level Modelling Study (ICWWS) with climate change and freeboard allowances, the recommended development level for the 3FM Project is 4.45m OD. Where possible levels for the proposed development were set above this recommended development level.

The Southern Port Access Route (SPAR) will be constructed to link the northern lands to the southern lands via an opening bridge, crossing the River Liffey to the east of the Tom Clarke Bridge, then along the south bank of the River Liffey using a viaduct structure and into the southern lands, linking the proposed and existing

infrastructure. The proposed soffit level for the bridge at the pier housing the lifting machinery is 4.45m OD. This level exceeds the 0.5% AEP flood level, including allowances for climate change and freeboard, and therefore minimises the risk of the machinery becoming flooded. It is not practical to keep the entire bridge above this level whilst minimising the perceived difference to the Tom Clarke Bridge and ensuring effective connections to adjacent routes. Therefore, the bearings on other piers are designed to be above the 2% AEP flood level. This will mean that the probability of the bearings getting wet will be low. For reasons relating to visual impact, it is not possible to raise the proposed SPAR viaduct to the recommended development level. The road centreline level on the viaduct is proposed to be at 3.25m OD which is just above the 0.5% AEP level of 3.15m OD, with road channel levels at 3.15m OD. There will be a concrete vehicle restraint system (VRS) either side of the road that will act as flood protection measure for the road. The VRS will be at a height of 3.95m OD, which provides an allowance for climate change of 0.5m and a freeboard of 0.3m. This would in theory keep the road open during extreme tidal events. The footpaths and cycle ways either side of the road will not be protected from flooding, however it is anticipated that these would not be used if an extreme tidal event occurred. Modelling of the bridge and viaduct piers has been undertaken and this has shown that there is no impact on coastal flood risk.

As with any development within a coastal floodplain there is always a residual risk linked with a more extreme event, greater than the design event, occurring. The mitigation measures will provide a level of protection to reduce the impact from an extreme event as far as reasonably possible. The overall residual risk is therefore considered to be low.

The 3FM Project is compliant with the Planning System and Flood Risk Management Planning Guidelines.

10 AIR QUALITY

The assessment of the likely significant effects of the proposed 3FM Project on air quality considers both the construction and operation phases of the development. The current state of the environment in terms of baseline air quality has been determined from the data from the EPA monitoring Zone A (Dublin) network to determine compliance with relevant ambient air legislation. In addition to the EPA monitoring, DPC carry out a series of ambient air quality monitoring tests within the environs of the port. This monitoring is employed in this assessment to demonstrate the spatial variation in the Port and in the wider Dublin area in conjunction with the data from the EPA network.

Results of the baseline monitoring indicates that recent levels in the Greater Dublin Area are well below the statutory limits for the protection of human health and also below the WHO guidelines for the protection of human health. It is noted that monitoring undertaken by DPC within the Port footprint show levels that are higher than the Greater Dublin Area average and, in some cases, levels exceed both the statutory limits and the WHO guidelines.

There are sensitive receptors (houses, commercial operations) located in the area and these receptors vary in distance from the proposed project. There is a potential that receptors may experience a change in air quality and the extent of these changes in air quality is identified in the air quality assessment. The nearest sensitive residential receptors to the south of the proposed project are the residential dwellings on York Road, Pigeon House Road, Ringsend Park and Pembroke Cottages circa 400m to the south of the 3FM Project application boundary.

The proposed construction operation will involve the movement of materials and reconfiguration of existing roadways, buildings and lands to create an additional three hectares of usable terminal. Additional infill material may be sourced offsite and transported via the newly configured access to the Port. The majority of dredged material (circa 94%) will be barged to the dump site and will not travel by road. As the construction traffic volumes predicted with the 3FM Project are not considered significant relative to existing volumes, the resultant air quality impact from construction traffic is negligible.

The main potential odour from the construction stage relates to the potential for fugitive odours from the dredging operation. Despite the low risk of encountering odours, a series of odour mitigation measures have been presented to minimise the impact of this operation and to prevent any nuisance in the unlikely event that odours are encountered. The residual odour impact of the proposed dredging operations is considered negligible.

The operational impacts of increased traffic emissions arising from the additional traffic on local roads, due to the development, have been assessed. It has been demonstrated that the proposed project will not cause any exceedances of the air quality objectives in locations where they are not already exceeded. Overall, the operational air quality impacts, following the application of the proposed mitigation are judged to be 'not significant'.

The results of the modelling indicate that with the development, the predicted NO₂, PM₁₀ and PM_{2.5} concentrations at existing receptors are below the relevant long and short-term AQS objectives. When the magnitude of change in annual-mean NO₂, PM₁₀ and PM_{2.5} concentrations is considered in the context of the absolute predictions, the air quality impacts of the development on existing receptors are categorised as 'negligible'. Taking into account the geographical extent of the impacts predicted in this study, the overall impact

of the development on the surrounding area as a whole is considered to be 'negligible', using the descriptors adopted for this assessment. The AQS objectives for NO₂, PM₁₀ and PM_{2.5} are likely to be met at the facades of the sensitive receptors.

On that basis, future and existing receptors should be exposed to acceptable air quality. Using professional judgement, the resulting air quality effect is considered to be 'not significant' overall.

Shipping emissions associated with the proposed project have been quantified based on the projected increases in shipping numbers at the port in 2040 both as a result of the 3FM Project and cumulatively for the Masterplan. Shipping emissions are predicted to generate a long term and permanent slight adverse impact for climate and air quality.

11 CLIMATE

The assessment on the potential climate impacts from the 3FM Project identifies and presents the likely significant effects of the 3FM Project on climate (mitigation) and also the vulnerability of the Project to climatic factors (adaptation). The assessment also considers the consistency of the project with the provisions of the Climate Action and Low Carbon Development Acts 2015 to 2021, the Climate Action Plan 2024 (CAP24), and all applicable domestic and European Union legislative and regulatory requirements.

Annex IV to Directive 2014/52/EU includes direct reference to climate and climate change with the emphasis placed on two distinct aspects of the climate change issue:

- Climate change mitigation: this considers the impact the Project will have on climate change, through greenhouse gas emissions primarily; and
- Climate change adaptation: this considers the vulnerability of the Project to future changes in the climate, and its capacity to adapt to the impacts of climate change, which may be uncertain.

This assessment identifies and presents an assessment of the likely significant effects of the 3FM Project (hereafter the 'proposed development') on climate (mitigation) and also the vulnerability of the project to climatic factors (adaptation).

The construction phase climate assessment was carried out to identify sources and quantify total GHG emissions generated from the construction activities associated with the 3FM Project. A series of choices of low carbon steel and concrete materials will help mitigate this impact and fully comply with the targets of CAP24. As such the GHG emissions associated with the proposed construction of the 3FM Project will result in a direct permanent minor adverse impact.

GHG emissions from energy use at the port are assessed through a review of the energy demand to support the proposed changes to operations at the site to determine the potential for significant impact. With the planned and ongoing decarbonisation of the grid the climate impact of this energy demand will decrease in future years. These impacts are considered as a direct permanent minor adverse impact for climate.

A prediction of the local impact of traffic-derived emissions during the operation phase was carried out and the results of the analysis of the proposed development indicates that traffic emissions will increase in future years as a result of the increased throughput to the port. The impacts to climate from road transport generated emissions is considered an indirect moderate adverse in the long term.

Shipping emissions associated with the proposed development have been quantified based on the projected increases in shipping numbers at the port as a result of the 3FM Project. Shipping emissions are predicted to increase and will result in an indirect long term moderate adverse impact for climate.

The climate vulnerability of the 3FM Project has been suitably mitigated through the planned construction works and final design to ensure no significant adverse climate adaptation risk.

In deciding whether to grant development consent, An Bord Pleanála is required is required, under section 15 of the Climate Action and Low Carbon Development Act 2015, as amended to perform its functions in a manner consistent with the following:

- The most recent approved climate action plan;

- The most recent approved national long term climate action strategy;
- The most recent approved national adaptation framework and approved sectoral adaptation plans;
- The furtherance of the national climate objective; and
- The objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State.

This climate policy base is summarised in Appendix 11-1 and presents a summary of the relevant policy objectives and actions and provides an overview of the consistency of the proposed development to these policies.

In short, the analysis shows that in designing the 3FM Project, the event that ABP decides to grant permission for the 3FM Project, it would be performing its assessment and consenting function, in so far as practicable, in a manner consistent with the following:

- The most recently approved Climate Action Plan;
- The most recently approved national long term climate action strategy;
- The most recently approved national adaptation framework and approved sectoral adaptation plans;
- The furtherance of the National Climate Objective; and
- The objective of mitigating GHGs and adapting to the effects of climate change in the State.

For impacts under the direct control of DPC such as the construction works, the onsite energy use or climate resilience, the impacts have been suitably mitigated and designed in line with national policy.

For policies relating to the construction phase, the 3FM Project is fully aligned with the requirements, while the energy efficiency measures, active travel, modal shift and electric vehicle enhancements in the operation phase will all contribute to the national targets and measures for these elements in the policy base.

While there are significant indirect impacts to climate identified as a result of road traffic and shipping, the planned legislative mitigation measures at international, EU and national levels will reduce these impacts, but such matters are outside the control of DPC.

In conclusion, DPC have devised the proposed development to be consistent, in so far as practicable, with the relevant climate policy base and, in assessing the proposed development and deciding to grant permission for the 3FM Project, the Board would comply with the requirements of section 15 of the Climate Action and Low Carbon Development Act 2015, as amended.

12 NOISE & VIBRATION

12.1 Terrestrial Noise & Vibration

A detailed baseline noise monitoring survey was completed at a representative number of properties to determine the noise environment in the vicinity of the proposed redevelopment. This baseline noise monitoring survey was used as a basis for determining the likely noise impact associated with the 3FM Project.

The Noise and Vibration Assessment was completed with reference to a range of relevant Irish and international noise and vibration guidance documents.

Worst-case construction noise levels from the proposed redevelopment will be well below the standard noise threshold limits outlined in the relevant noise guidance documents at the majority of the nearest noise sensitive properties. There is potential for construction phase noise impacts at the nearest properties on Pigeon House Road and the Coastguard Cottages, therefore noise mitigation measures are included in the EIAR to ensure that construction noise impacts in this area are maintained below the appropriate noise threshold limits.

There will be no significant noise impacts associated with traffic flow changes as a result of the construction or operational phases of the 3FM Project. The traffic flow increases associated with the 3FM Project will result in neutral/minor change to traffic noise levels.

There will be construction phase activities associated with the 3FM Project that have the potential to generate vibration impacts, most prominently the piling works required as part of the construction phase. Vibration monitoring will be undertaken throughout the construction phase where vibration-generating construction activities are taking place in close proximity to sensitive properties and sites of cultural heritage.

During the operational phase, the inclusion of new 4m high noise barriers and the use of a low noise road surface on the proposed SPAR will ensure that there will be no significant operational phase noise impact from the SPAR or Area K activities at the nearest noise sensitive properties on Pigeon House Road and the Coastguard Cottages. A range of additional measures will also be implemented to reduce operational phase noise associated with the 3FM Project, including plant/vehicle electrification and the application of the latest technology in areas such as automation and plant/equipment sensors.

12.2 Underwater Noise

Site specific underwater noise levels have been established in Dublin Harbour whilst piling and dredging operations have been taking place.

The results of these monitoring programmes have been used to validate an underwater noise propagation model to predict the potential underwater noise impacts of the 3FM Project. The propagation and sound exposure levels were calculated in order to determine the likely range for injury and disturbance using well established modelling and injury criteria.

The model was used to establish a series of Risk Range Maps resulting from the construction works which have the potential to give rise to underwater noise, primarily from piling, dredging and demolition works. The Risk Range Maps show the potential risk to a range of species including porpoise, seals and migratory fish in terms of likely significant temporary hearing impact (TTS) and permanent hearing injury (PTS) in the absence of mitigation.

This information has enabled the marine ecologists to establish a set of mitigation measures to prevent injury to marine mammals and fish. The mitigation measures are set out in Chapter 7 Biodiversity, Flora & Fauna. They include a series of avoidance mitigation measures using closed periods for piling, dredging and demolition works. They also include adherence to NPWS (2014) guidelines.

Given the potential impact on porpoise, no piling will take place if a porpoise is present within the inner Liffey channel. The presence / absence of porpoise will be determined by Marine Mammal Observers, supported by Passive Acoustic Monitoring (PAM).

The site is noise sensitive due to the proximity of marine species including fish in the Liffey channel.

The outer part of Dublin Bay is a popular recreational diving location, with scenic dives at Scotsman's Bay, Sandycove, Muglins Rock, Dalkey Island and Irelands Eye. The closest of these sites (Scotsman's Bay) is located circa 6.0km from the end of the Great South Wall, and more than 8.0km from the nearest piling activity. No recognised dive sites will be impacted by underwater noise from the 3FM Project.

It is proposed that underwater noise levels will be monitored two months after commencement of piling activities at two locations upriver and two locations downstream of the works when works are being carried out in the navigation channel. This will provide additional verification data of the predicted underwater noise levels.

Monitoring underwater noise during the operational phase will be undertaken. The Dublin Bay area is subject to commercial shipping traffic from Dublin Port, Dun Laoghaire Port, Howth Port and leisure and commercial traffic from numerous marinas around the bay. In order to monitor Dublin Port shipping traffic related noise it is proposed to maintain the PAM system located at the North Bank Light linked to a vessel identification system. Monitoring will provide information on background (absence of shipping) and ambient (shipping noise included) noise levels along with linking noise events to specific vessels. This approach ensures that particularly noisy vessels can be identified and appropriate measures outlined in the IMO (2014) guidelines are taken to control noise emissions from those vessels.

13 COASTAL PROCESSES

The assessment of coastal processes was based on an extensive numerical modelling programme using RPS's in-house suite of MIKE coastal process modelling software developed by the Danish Hydraulic Institute (DHI). Baseline models were calibrated and verified against a range of project specific hydrographic data and subsequently used to assess the construction and operational impacts of the 3FM Project.

The assessment concluded that dredging operations required for the 3FM Project will not result in any significant impact to either water quality in terms of suspended sediments, or the nearby environmentally designated areas in terms of sediment deposition with mitigation measures in place.

In respect to the power station intakes and Ringsend WwTW outfall, any increase in the suspended sediment concentrations was generally very small by comparison with background levels in the Liffey Estuary. The dredging operations are therefore unlikely to have any effect on the quality of intake waters in terms of suspended solids content. However, as customary, DPC will continue to notify the power station operators in advance of each dredging campaign. This will allow operators to temporarily stop abstracting water from the Liffey for a short duration in the event that dredging is required within the immediate vicinity of their intake works.

The assessment of disposal of dredge spoil arising from the 3FM Project at the licenced offshore disposal site located to the west of the Burford Bank at the approaches to Dublin Bay concluded that the disposal operations will not result in any significant increases to the background level of suspended sediments and will not, therefore, impact the existing water quality in the greater Dublin Bay area.

The tidal regime is predicted to remain substantially unchanged post 3FM Project. The risk of impact to the existing tidal regime is therefore determined to be negligible and no mitigation is required.

The assessment of potential changes to the inshore wave climate found that the maximum change in wave heights in Dublin Port during storm events did not exceed ± 0.20 m. These changes were confined primarily to the Maritime Village and Area N. There was no discernible change in the wave climate due to the 3FM Project in relevant proximate areas such as Clontarf, Fairview and Ballybough bordering the Tolka Estuary. These changes to the wave climate are not considered significant and will not impact operations within the port.

Furthermore, the change in risk of potential coastal flooding due to the 3FM Project at neighbouring sites is considered to be negligible and no mitigation is required.

Given that there are no significant changes to key coastal processes that govern sediment transport, i.e., tides, waves and water levels, it can be concluded that the 3FM Project will result no discernible change to the existing sediment transport regime in Dublin Port and the in the greater Dublin Bay area.

The 3FM Project is not expected to act in combination with other nearby developments, including the CWP substation project and Dublin City Council active travel bridge across the River Liffey, or to result in any significant impacts to baseline coastal process conditions. In circumstances where the mitigation measures are fully implemented during the construction and operational phases, the impact of the 3FM Project on the coastal processes within Dublin Port and Dublin Bay will consist of small scale, low magnitude changes in the tidal regime and wave climate. On the basis that the appropriate mitigations measures are fully implemented during the construction and operational phases, the impact of the 3FM Project on coastal processes will be imperceptible.

14 TRAFFIC AND TRANSPORT

14.1 Overall Summary

A Traffic and Transportation Assessment (TTA) has been carried out within Chapter 14 of the EIAR for which has demonstrated the planning gain that will be provided by the 3FM Project in the context of traffic and transportation effects:

- The Southern Port Access Route (SPAR) removes up to 95% of HGVs from the Tom Clarke bridge and up to 50% of HGVs from the East Wall Road per day. The provision of the SPAR reduces the overall daily traffic on the Tom Clarke by 30% and by 20% on East Wall Road (Units PCUs). In addition to providing capacity benefits to the external road network, there are additional benefits associated with noise, vibration & air quality, and reduction in the wear & tear of the in-charge carriageway. **This is a significantly positive and permanent effect.**
- The reductions are consistent with the original findings of the Strategic Transportation Study carried out for the Strategic Environmental Assessment in 2018 when the SPAR concept was first introduced as part of the revision to the Dublin Port Masterplan. The SPAR is relatively lightly trafficked and is free-flowing, contributing to the air quality / emissions in the local environs and has been future proofed to accommodate a Luas extension, as well as being designed to provide a high standard of active travel provision. **This is a significantly positive and permanent effect.**
- The road and junction amendments being proposed as part of the 3FM Project on the Poolbeg Peninsula have sufficient capacity to comfortably accommodate traffic generated by Dublin Port and the other users on the Peninsula. **This is a significantly positive and permanent effect.**
- There are a suite of road and junction improvement measures proposed on the North Port Estate that ensure the traffic generated by the fulfilment of the entire Dublin Port Masterplan 2040, Revised 2018 can be accommodated within the port's internal road network, even for the most robust assessment which considers that the existing traffic daily profile is maintained in future years. Importantly, the road works ensure that the traffic queue does not extend on Promenade Road to block the Dublin Tunnel (M50). **This is a significantly positive and permanent effect.**
- The Dublin Port Tunnel will have sufficient capacity at 2040 when the 3FM Project is complete and operational. **This is a significantly positive and permanent effect.**
- The 3FM active travel proposals are significant and provide planning gain to Port users and the public. They have been carefully designed to take cognizance of the surrounding existing, committed, and potential surrounding schemes, and provide connectivity between the public realm areas, the port's operational plots and the external active travel network. Inter-modal connectivity between public transport and end-users using active travel is demonstrated, and the NTA BusConnects Ringsend scheme provides enhanced services to the area. The 3FM Project includes 7km of new or upgraded Active Travel Path (cycle, pedestrian, wheelers etc.) and 4.9km of new or upgraded footway across the North Port, SPAR and Poolbeg Peninsula, which will link with the 1.4km Liffey-Tolka Greenway in the North Port Estate, and from there to the 3.2km Tolka Estuary Greenway currently under construction by Dublin Port. DPC will also provide Dublin

City Council with a €5 million contribution for future upgrading of the existing coastal path along the southern perimeter of the Poolbeg Peninsula. **This is a significantly positive and permanent effect.**

- The SPAR will allow the 3FM Project to be rail enabled through rapid road shunting of freight by electrically powered shunting vehicles from the South Port, across the Liffey, to rail intermodal facilities in the North Port vicinity. This is the preferred option for rail freight considered by DPC. In this TTA, it has been assumed that no other modes other than road vehicles have been used for transporting material from the port for a robust assessment. **This is a positive and permanent effect.**
- A Mobility Management Plan (MMP) has been appended which sets out the measures which will be adopted by DPC, in liaison with the operators, to ensure that the sustainable transport facilities are made available and are utilised by the users of the 3FM Project. The modal breakdown for the proposed Lo-Lo and Ro-Ro Terminals within the 3FM Project assumes a modal split of 60% for private car use in 2040, a modal shift compared to the surveyed levels at MTL of 77% private car use in 2022. **This is a positive and permanent effect.**
- The cumulative assessment found that the construction activities related the 3FM Project reduces daily traffic flows on South Bank Road every year between 2026 to 2038 prior to the opening of the SPAR. Construction vehicles will be managed in accordance with the Construction Environmental Management Plan and Construction Traffic Management Plan. **This is a positive and temporary effect.** Post 2038, any construction traffic associated with 3FM will be routed onto the SPAR, relieving South Bank Road of construction vehicles generated by the 3FM Project and providing the planning gain to the external road network provided by the SPAR.
- Details of the proposed HGV routing for the 3FM Project have been provided. It has been demonstrated that all third party haulier HGVs are routed away from the Glass Bottle site during the nighttime hours of 23:00-07:00 to minimise any potential inconvenience to residents. **This is a positive and permanent effect.**
- All port shunting vehicles will be electrically powered or similar to provide lower carbon & reduced noise benefits. **This is a positive and permanent effect.**

14.2 Methodology

The Traffic and Transportation Chapter of the EIAR summarises the existing conditions relevant to the transportation assessment for the 3FM Project.

The Chapter considers several schemes and transportation infrastructure improvements, both within the Port and its environs, which are of particular relevance to the EIAR TTA for the 3FM Project.

Several scoping correspondence / meetings were held with the bodies listed below, and the received comments have been considered within the assessment:

- National Transport Authority (NTA)
- Transport Infrastructure Ireland (TII);
- Transportation Planning Division, Dublin City Council (DCC).

The methodology for the EAIR TTA was described in detail at a pre-application meeting with DCC, including members from the Transportation Planning Division, and the method seemed to be received positively.

14.3 Existing Traffic Flows & Assessment periods

38 junctions were surveyed for 24 hours on 24 October 2023 in order to assess traffic flows over a typical day. Classified traffic turning count surveys were carried out, and supplemented with the following existing information:

- Existing queue length surveys;
- Camera footage of each junction;
- Traffic signal controller information from DCC for each signalised junction;
- NMU Surveys.

The surveyed traffic flows were converted to Passenger Car Units (PCUs) using the conversion factors from the TII Project Appraisal Guidelines, with the exception of OGV2 for which the PCU conversion rate of 2.3 has been increased to 2.9 to provide an additionally robust assessment.

Peak hour assessments have been taken forward for detailed traffic impact assessment:

- Internal AM Port Peak Hour 06:15 to 07:15 referred to as AM1
- External Network AM Peak Hour 08:00 to 09:00 referred to as AM2
- Internal Midday Port Peak Hour 12:30 to 13:30 referred to as MD
- External Network PM Peak Hour 17:00 to 18:00 referred to as PM

14.4 Do-Nothing Traffic Flows

Do-Nothing Traffic Flows were derived for the year 2040 based on the following methodology:

- A SATURN model was calibrated for the based year (2023) based on the surveyed traffic flows.
- The ANPR Origin-Destination data was used to:
 - separate port traffic and non-port traffic;
 - Separate HGV from non-HGVs.
 - to isolate the traffic from each land use as required in order to assign the differing growth rates between 2023 to 2040.
- The road network in the Dublin Port North Estate was built into the model for the Do-nothing scenario which includes:
 - an upgraded left slip entry from East Wall Road onto Alexandra Road for HGV entry to Terminal 4 (currently Seatruck) and Alexandra Quay East (currently DSG).
 - Closure of all other traffic movements at the East Wall Road / Alexandra Road junction and reassignment to the Promenade Road access.
 - The construction of the T10 Link Road south.
- Committed traffic flows for the Glass Bottle site and the NTA BusConnects scheme was added.
- The resultant flows represent the Do-nothing traffic scenario for the year 2040 for each of the assessment periods.

14.5 Proposed Traffic Flows

Proposed Traffic Flows were derived for the year 2040 based on the following methodology:

- A SATURN model was calibrated for the based year (2023) based on the surveyed traffic flows.
- The ANPR Origin-Destination data was used to:
 - separate port traffic and non-port traffic
 - Separate HGV from non-HGVs
 - to isolate the traffic from each land use as required in order to assign the differing growth rates between 2023 to 2040
- External traffic will be grown in accordance with TII guidelines.
- Existing port uses on the South Port Estate are being retained remain within the model and the applicable traffic growth rate for 2023-2040 was applied
- Traffic flows from the existing port land uses on the South Port Estate that are required to construct the 3FM Project are removed.
- The Dublin Port North Estate traffic will be increased by a factor of 1.722 to reflect traffic growth between 2023 and 2040. It is proposed that the that current diurnal traffic patterns entering the port for the North Estate get multiplied up on a pro-rata basis to establish the proposed traffic flows in 2040. This provides a robust assessment of the proposed road and junction improvements within the North Port Estate as there may be trend towards the spreading of peak hours and night-time running through the Dublin Tunnel (M50) especially towards the end of the DPMP2040. If this peak hour spreading or night-time running trend happens, it will lessen the daytime peak hour flows that have been modelled in this TTA.
- The model is based on the proposed road network including the SPAR, and the North and South Port Estates and the Poolbeg Peninsula. The elements below that formed part of the Do-Nothing network are retained in the proposed scenario.
- Committed traffic flows for the Glass Bottle site and the NTA BusConnects Ringsend scheme are added.
- The proposed traffic flows for the 3FM Project are added. These are:
 - HGVs, staff & visitors for the Lo-Lo terminal (Areas N &L)
 - HGVs staff & visitors for the Ro-Ro terminal (Areas K &O)
 - Proposed Maritime Village
 - Proposed port Operations
 - Five buses per hour per direction to allow for Public Transport of 25+ passengers.
- The model assigned traffic flows based on the restricted use assessed for the SPAR.
- The resultant flows represent the proposed traffic scenario for the year 2040 for each of the assessment periods.

14.6 Planning Gain of the SPAR to the External Road Network

Comparing Do-Nothing to proposed traffic flows for 2040 revealed that the proposed SPAR removes up to 95% of HGVs from the Tom Clarke Bridge and up to 50% of HGVs from the East Wall Road per day. The provision of the SPAR reduces the overall daily traffic on the Tom Clarke Bridge by 30% and by 20% on East Wall Road (Units PCUs). In addition to providing capacity benefits to the external road network, there are additional benefits associated with noise, vibration & air quality, and reduction in the wear & tear of the in-charge carriageway.

14.7 HGV Routing to the 3FM Project

The proposed HGV routing between the Dublin Tunnel (M50) and the 3FM Project will be via Promenade Road connecting to the SPAR via the Berth 18 Access Road within the North Port Estate.

The 3FM Project proposes an upgraded slip entry from East Wall Road onto Alexandra Road for HGV entry to Terminal 4 and Alexandra Quay East - there is no access to the SPAR from the Alexandra left slip road. Other traffic movements will not be permissible at the Alexandra Road access except for blue light access emergency use should an incident occur within the port.

Details of the proposed HGV routing (entry, exit and between Areas) for Areas N & L (the Lo-Lo terminal) and Areas K & O (the Ro-Ro terminal) have been provided. Notably HGVs are routed away from the Glass Bottle site during the nighttime hours of 23:00-07:00 to minimise any potential inconvenience to residents. The only exception are port shunting vehicles returning unladen from Area O to Area K which will be electrically powered or similar to provide lower carbon & reduced noise benefits.

14.8 Mobility Management Plan

A Mobility Management Plan (MMP) has been appended which sets out the measures which will be adopted by DPC, in liaison with the operators, to ensure that the sustainable transport facilities are made available and are utilised by the users of the 3FM Project. The modal breakdown for the proposed Lo-Lo and Ro-Ro terminals within the 3FM Project assume a modal split of 60% for private car use in 2040, a modal shift compared to the surveyed levels at MTL of 76% private car use in 2022. This target will be achieved using the suite of active and sustainable travel infrastructure provision proposed within the 3FM Project along with the suite of management measures provided within the MMP.

14.9 Dublin Tunnel (M50)

The TTA has demonstrated that proposed demand for travel through the Dublin Tunnel (M50) will remain within the nominal capacity of 3,800 PCUs per hour throughout the day, with a maximum of 3,009 PCUs occurring the midday peak hour in 2040. The total of 80,193 PCUs per day does not exceed the 182,400 daily PCU capacity of the Tunnel, or the capacity of 91,200 PCUs per direction.

14.10 18hr/6hr/24hr in vehicles and HGVs proportions

Detailed traffic flows (16hr/8hr/24hr in vehicles and HGVs proportions) have been provided to allow detailed assessment within the EIAR and engineering designs for following disciplines.

- Air Quality,
- Climate Change
- Noise & Vibrations
- Carbon Calculations
- Human Health
- Road Engineering, including pavement design calculations.

14.11 Modelling Results for the South & North Port Estate Road Network

The modelling results demonstrate that with the proposed junction upgrades in place and new junctions constructed as part of the 3FM Project, the Dublin Port Road Network is predicted to operate within capacity for all scenarios considered.

Importantly, the modelling results shows that the queue on Promenade Road contained within the gyratory, less than 127m from the proposed signalised Circle K junction, for the worst-case scenario in 2040. This demonstrates that the back of the queue will be a comfortable distance away from the Dublin Tunnel (M50) southern portals.

Details of the rolling out of the upgraded road and junction works have been provided with the construction sequence and show that the upgrades are delivered on the ground from the year 2027 until 2039.

14.12 Rail Freight

A detailed consideration was given to rail freight enabling of the 3FM Project. DPC have reviewed options for rail connectivity for the 3FM Project and the port more generally. DPC considers that the preferred option, which is most beneficial from a cost, sustainability and environmental perspective is the servicing of rail freight for the port from a dedicated intermodal rail freight depot at North Wall, accessed by a dedicated bridge over East Wall Road, with 3FM terminals accessing the terminal via shunting through the SPAR.

This would ensure the full access to the national rail network of cargo landed at the proposed new 3FM terminals in the South Port Estate, without necessitating the construction of a further, dedicated rail bridge across the Liffey with the associated financial and carbon costs of such a significant piece of construction. Through the envisaged intermodal freight depot at North Wall, freight from the proposed 3FM facilities will access the national rail network by being shunted across the newly proposed SPAR by electrically powered shunting vehicles, resulting in the proposed 3FM facilities being fully rail-accessible in the most sustainable and economic fashion.

In the TTA all of the proposed throughput for the operational plots have been assessed as travelling by road to provide a robust assessment of the road network capacity.

14.13 Proposed Car Parking at the 3FM Project & EV Requirements

A 24-hour multi-modal trip breakdown and parking provision for staff & visitors at the proposed Areas K, N, L and O has been derived based on the surveyed conditions at the existing MTL site in 2022 as directed in the

DCC Development Plan 2022-2028. In accordance with policy SMT29, 'Expansion of the EV Charging Network' on page 257 of the Dublin City Development Plan 2022-2028, 50% of car parking spaces included within the 3FM Project will be equipped with EV Charging Points.

14.14 Construction Traffic

14.14.1 Construction traffic in the North Port Estate

The maximum daily construction flow within the North Port Estate is 64 one-way vehicles (128 two-way vehicles) in the second half of 2037 which represents about 0.5% of the daily two-way traffic flows and will be imperceptible, no more noticeable than the ordinary daily fluctuations in traffic flows.

14.14.2 Construction traffic in the South Port Estate

The maximum daily construction flow generated by the 3FM Project for the South Port Estate is 142 one-way vehicles (285 two-way vehicles) in the second half of 2038. During pre-application meetings, DCC TPD raised concerns that the construction traffic generated by the 3FM Project would be accessing the Poolbeg Peninsula via the existing external road network prior to the opening of the SPAR in 2039. The planning authority therefore requested a cumulative assessment on South Bank Road for construction and operational traffic for existing and committed schemes during the construction of the 3FM Project but prior to the opening of the SPAR (i.e.2026-2038). This was provided, as detailed in the Cumulative Impact section below, and found that traffic flows along the South Bank Road in the years 2026-2028, prior to the opening of the SPAR, are reduced due to the phased closure of existing operations as the construction sequence progresses to refunction Port lands.

The 3FM Project construction works will be undertaken in compliance with a Construction Environmental Management Plan (CEMP) and a Construction Traffic Management Plan (CTMP) containing a suite of appropriate and effective traffic management measures (such as haulage routes, expected numbers of construction vehicles for each phase, details of temporary warning signage, provision for wheel washing, roadside cleaning, load checking and general maintenance of larger vehicles).

14.15 Cumulative Impact

An assessment has been carried out of the cumulative impact of the consented schemes within the environs of the 3FM Project. It has been demonstrated that:

- **Cumulative Impact on the North Port Estate**

As the 3FM Project represents the Third and Final Masterplan Project, the traffic flows used in this TTA represent the fulfilment of the full DPMP2040 in the year 2040. Therefore, they inherently include the cumulative impact of all committed and proposed developments within the DPMP2040 including the other SID applications of ABR and MP2. The proposals (road, junction, and active travel upgrades) therefore represent the mitigation of the cumulative impact within the North Port Estate.

- **Cumulative Impacts on the External Road Network**

The introduction of the SPAR reduces the daily traffic on the existing Tom Clarke Bridge & the R131 by 30% and the traffic on East Wall Road by 20% (Units PCUs). The SPAR removes 95% of HGVs from the Tom Clarke and 50% of HGVs from the East Wall Road per day. This removal of traffic from the external

road network provides benefits to the schemes being progressed by others in the Port environs including the Point Bridge Active Travel Scheme, the NTA Bus Connects & the Dodder Bridge Scheme and the DCC Upgrade of the East Wall Road and the Glass Bottle Scheme. The use of high traffic growth rates in the TTA for non-port traffic flows to derive future year flows inherently incorporates development schemes being delivered in the local environs of the Port up to the year 2040.

- **Cumulative Impact on South Bank Road Prior to the Opening of the SPAR**

During the pre-application meetings with the DCC Transport Planning Division (TPD), it was noted that South Bank Road will be the only access to the Poolbeg Peninsula until the opening of the SPAR in 2039. DCC TPD therefore requested consideration be given to the cumulative traffic impact on South Bank Road for construction and operational traffic for existing and committed schemes during the construction of the 3FM Project but prior to the opening of the SPAR (i.e.2026-2038). The TTA provides a detailed assessment to address this request based on daily two-way traffic flows (Unit: Vehicles) along South Bank Road.

The cumulative assessment found that the construction activities related the 3FM Project reduces daily traffic flows on South Bank Road every year between 2026 to 2038 prior to the opening of the SPAR with a minimum 4% reduction in two-way daily flows in 2028 and 2029 and a maximum reduction of 23% in 2033. Post 2038, any construction traffic associated with 3FM will be routed onto the SPAR, relieving South Bank Road of construction vehicles generated by the 3FM Project and providing the planning gain to the external road network provided by the SPAR.

The assessment therefore demonstrated that when the construction and operational cumulative traffic impact is considered from third party schemes (e.g. NTA Bus Connects & Dodder Bridge, ESB Ringsend OCGT, ESB Poolbeg OCGT, Glass Bottle scheme & Ecocem Extension) along with the construction of the 3FM Project and the continuation of the Dublin Port activities (at a reduced level due to the construction activities) there is a reduction in traffic flows along the South Bank Road in the years 2026-2028 prior to the opening of the SPAR in 2039

14.16 Interactions

Traffic and transportation considerations have been an integral part of the 3FM Project and the SPAR since the initial development of the concept scheme in 2016, through incorporation of the concept into the Dublin Port Masterplan 2040, Revised 2018 and now as a scheme for planning submission. Transportation is interlinked with the planning & policy, land use, road designs, construction strategy and has had years of iterative interaction with the planning, environmental (noise, vibration, air quality & heritage) and engineering teams to ensure the inherent layout of the proposed scheme maximises port throughput whilst minimising the impact on the environment and local residents and provides planning gain for active travel provision and road capacity.

14.17 Conclusion

In summary, the 3FM Project provides significant planning gain in traffic and transportation terms. During the operational stage the Project will provide substantially increased vehicular capacity by providing the SPAR and a significantly enhanced road network connecting the proposed port operational areas located on the Poolbeg Peninsula to the SPAR and through the North Port Estate to connect directly to the Dublin Tunnel. The SPAR removes up to 95% of HGVs from the Tom Clarke bridge and up to 50% of HGVs from the East Wall Road per

day. The provision of the SPAR reduces the overall daily traffic on the Tom Clarke bridge by 30% and by 20% on East Wall Road (Units PCUs) delivering the additional benefits associated with noise, vibration and air quality and reduction in the wear and tear of the in-charge carriageway. The Project provides a substantial amount of high-quality active travel facilities carefully designed to provide connectivity between the public realm areas, the port's operational plots and the external active travel network, with end user facilities and a Mobility Management Plan to encourage use. The cumulative assessment found that the construction activities related the 3FM Project reduces daily traffic flows on South Bank Road every year between 2026 to 2038 prior to the opening of the SPAR. Post 2038, any construction traffic associated with 3FM will be routed onto the SPAR, relieving South Bank Road of construction vehicles generated by the 3FM Project and providing the planning gain to the external road network provided by the SPAR. Construction vehicles will be managed in accordance with the Construction Environmental Management Plan and Construction Traffic Management Plan.

15 SERVICES M&E

The assessment of Services comprises an appraisal of the potential impact of the 3FM Project on existing and proposed utilities within the Poolbeg Peninsula and in the vicinity of proposed roadworks within the North Port Estate. The service requirements of the 3FM Project (Water Supply, Wastewater and Electricity Supply) are also quantified to ensure the demand can be met and to ensure that there is no significant impact on other users or on the neighbouring communities.

Mitigation through engineering design and consultation with the key stakeholders has enabled the 3FM Project to avoid any significant impact on existing and proposed utilities. The utilities include:

- NORA facilities at Ringsend and Poolbeg,
- Uisce Éireann Ringsend Waste Water Treatment Plant;
- Encyclis Waste to Energy Plant;
- ESB Power Generation;
- ESB Power Supply Networks;
- Proposed Codling Wind Park Onshore Substation; and
- Propose Dublin City Council District Heating Scheme.

The service requirements of the 3FM Project (Water Supply, Wastewater and Electricity Supply) are summarised below:

15.1 Water Supply

The appraisal has shown that, subject to agreement with Uisce Éireann via the Pre-Connection Enquiry system, the level of demand associated with the 3FM Project will be more than capable of being supplied by the existing Uisce Éireann infrastructure within the subject area. No significant impact is therefore envisaged on other users or on the neighbouring communities.

15.2 Waste Water

The appraisal has shown that, subject to agreement with Uisce Éireann via the Pre-Connection Enquiry system, it is deemed that the level of demand associated with the 3FM Project will be more than capable of being supplied by the existing Uisce Éireann infrastructure within the subject area. No significant impact is therefore envisaged on other users or on the neighbouring communities.

15.3 Electricity Supply

Further to discussions between DPC and ESB it is clear that current electricity supply to the port is able to meet the capacity requirements of the Dublin Port Estate. However short term issues have been identified in ESB Power Networks ability to cater for project demands in the area, not just for Dublin Port but for all other local customers. This shortfall is currently being addressed between DPC and ESB by quantifying the electrical load capacity of the overall Port lands (North and South of the Liffey) with a view to compiling a masterplan to deal with electrical load requirements in the medium and long term. The 3FM Project electrical load requirements will form a key element of this masterplan. The masterplan will take account of the energy efficiencies being achieved by DPC.

DPC intend to liaise closely with ESB to ensure the 3FM Project's Electrical Load Requirements are met in line with the operational timeframes envisaged for the 3FM Project. This will be greatly assisted by the proximity of the 3FM Project to a major hub of electricity generation:

The required level of capacity will be met by feeding the proposed sub-stations from the existing network, with MV cables uprated locally where required. Therefore, there will be no impact on the electricity supply to tenants within the Dublin Port Estate or on the neighbouring communities.

16 CULTURAL HERITAGE

The assessment on the potential effects of the 3FM Project on cultural heritage assets was conducted to identify and record the location, nature and dimensions of any archaeological, architectural and industrial heritage features, fabric or artefacts that may be impacted by the 3FM Project. The appraisal includes an examination of existing sources and the acquisition of new data arising from site inspections and surveys. The appraisal gauges the likely significant effects of the 3FM Project on cultural heritage (including architectural, industrial and archaeological heritage) and, where necessary, includes detailed recommendations for the mitigation of any effects on cultural heritage assets potentially impacted upon within the area of the 3FM project.

The appraisal has identified, recorded and assessed the cultural heritage assets and potential impacts associated with the 3FM project, and benefits from a robust conservation strategy (*Conservation Strategy 2024*), which is a pre-planning document that identifies designated and non-designated assets and their significance together with policies for conservation preservation and activation. It also suggests a non-tangible overriding concept of the Maritime City as an overarching concept of the different Heritage Urban Landscapes, which applies to the Port Estate as a whole.

Operating to Masterplan 2040, the port is expected to expand to 73.8 million tonnes *per annum* on a constricted 262 Ha site, making Dublin Port the most intense Port in Europe in terms of T/Ha.

The heritage team (The Archaeological Diving Company (ADCO), Shaffrey Architects (Architectural and Urban Conservation), MOLA Architecture and Southgate Associates Conservation engineers), working with DPC's heritage team have sought to optimise development plans in relation to cultural heritage through the following measures:

- Minimising the direct impacts of the 3FM Project in relation to heritage through a series of workshops while developing the Conservation Strategy for the port in general.
- Where interventions are inevitable, development has been required to follow policies of minimum intervention, legibility, and reversibility wherever possible.
- Impacts on buried structures have been mitigated insofar as is reasonably practical within the confines of the brief, with policies of exposing, recording, monitoring and mitigation by careful consideration of measures prior to, during and post-construction, with a policy of rigorous recording and storage in the Port Archives.
- Opportunities have been sought to enhance and interpret Heritage by measures for landscape characterisation together with robust proposals for treatment of hard landscape surfaces, conservation and restoration of the GSW parapets with view corridors and waymarking proposals along the GSW.
- Opportunities for public engagement are optimised by offering three check areas for public interpretation.
- Constraints around Pigeon House Precinct have been carefully considered and the impact of Area N on the use of the harbour. Although no significant direct impacts are identified on the upstanding structures, there is a potentially negative impact on the archaeology of the buried fort. No proposals are forthcoming for the precinct area that is outside the ownership of DPC.

- The 3FM Project provides a new landmark and destination on the peninsula and the south city – a Maritime Village, forming a new accessible edge to the river on lands that are within the control of DPC. The Maritime Village presents a visible and attractive amenity to the city, while reinforcing the concept and spirit of place, or *Genius Loci*, identified in the conservation strategy. The Maritime Village offers berthing to visiting boats through the Stella Maris and St Patrick’s Rowing Clubs, and preserves local seafaring traditions, contributing to the culture and communality of the Ringsend area.
- Active travel routes in the North and South Port Estates will significantly enhance the pedestrian, cycling and recreational capacity and experience of the city, while strengthening Port /City integration.
- Preservation of options for the long-term opening of Pigeon House Precinct and the GSW to the Public have been taken into account within the confines of the brief.
- Archaeological monitoring of ground and seabed disturbance activities will take place across the 3FM Project area, ensuring that a robust record is maintained and that any new archaeological observations are resolved fully.

17 LANDSCAPE & VISUAL

A Landscape and Visual Impact Assessment (LVIA) of the 3FM Project at Dublin Port during both the construction and operational stages has been completed.

The 3FM Project is located within a landscape character area identified as Harbour Based Industrial Landscape. This landscape character area has been identified as having a low sensitivity to change. The magnitude of landscape resource change will be medium, and the significance of landscape impact will be minor adverse and not significant. The 3FM Project consists of proposals that reflect the existing character of its surroundings resulting in low change in landscape resource.

The Zone of Theoretical Visibility (ZTV) has been established for the 3FM Project to allow any potential areas of significant visual impact to be identified. Actual visual impacts from within the ZTV have been predicted by site survey and assessment during the construction and operational phase on potential views from sensitive visual receptors including residential properties.

There are large areas of Dublin and the adjacent settled coastline that will not have views of the 3FM Project due to intervening buildings and vegetation and it is only in close proximity to the site and at the coastline that there will be potential direct views from locations that include Ringsend to the southwest, Sandymount to the south and the Clontarf to Howth coast road to the north. The existing port facilities including ships and cranes and traffic are all features of the existing views from such locations, and it will be difficult to discern the new features from existing features from within the wider ZTV. For residential properties with potential views in the direction of the 3FM Project at Ringsend to the southwest, Sandymount to the south and the Clontarf to Howth coast road to the north the predicted significance of visual effect will vary from moderate to minor adverse and not significant.

A total of 13 viewpoints have been assessed and no viewpoints have been predicted to have significant visual impacts.

No significant cumulative landscape and visual effects have been predicted. Construction stage activities involve an increase in construction traffic for all cumulative projects. HGV traffic is frequent feature of this marine industrial landscape, and the existing Dublin city road network consists of very busy roads with low potential for significant cumulative visual impacts as a result. The operational stage activities as part of the 3FM Project are sufficiently separated from any permitted or planned projects in the area surrounding the port to avoid potential cumulative effects while permitted or planned developments within the port area or so similar in character that they are difficult to discern from the existing busy port context.

As no significant landscape or visual impacts have been predicted there is no requirement for specific landscape mitigation or monitoring measures.

In conclusion the broader landscape character area and visual context around Dublin Port area has the capacity to absorb a development of this scale.

18 POPULATION & HUMAN HEALTH

An assessment has been made of the changes in environmental and socio-economic conditions from the construction and operation of the 3FM Project, and the associated population and human health impacts that would occur as a result.

Mitigation and monitoring measures adopted as part of the construction and operation of the 3FM Project focus on precursors to health and wellbeing outcomes, thereby providing an opportunity for intervention to prevent any adverse impacts. Monitoring of environmental factors which may influence health and wellbeing is also proposed in order to ensure relevant thresholds which are set to be protective of the environment and human health are being met throughout construction and operation.

While the construction phase is long-term in nature, any changes in environmental determinants would be temporary, intermittent and transient in nature. Following the implementation of such measures during the construction phase, changes in air quality and noise would not result in any significant adverse population and health impacts. Similarly, due to the location of Dublin Port in proximity to the national road network and requirement to adhere to the Dublin City HGV Management Strategy, the impact on the external road network and associated potential for population and health effects would not be significant.

The long-term construction phase has the potential to result in benefits to population and health from changes in socio-economic determinants. An annual average of 92 construction jobs would be required to deliver the project, with a peak of 203 construction jobs required in Year 13 of construction (2038). It is worth noting that there is potential for cumulative population and health benefits via means of job retention for port construction workers as the MP2 Project is due to finish being constructed in 2032 and the construction employment for the 3FM Project generally ramps up from 2032 (Year 7) to 2038 (Year 13).

During the operation phase, changes in air quality would be positive at every modelled receptor, resulting in population and health benefits at the local level; while some of the improvements in air quality would be large, as the population benefitting from this change would be small and therefore the benefit is not considered to be significant.

Changes in noise exposure during operation is also shown to be largely positive, where there would be a reduction in noise at most receptors. Of the receptors experiencing an increase in noise, the overall level of noise remains within limits which are set to be protective of the environment and human health.

Socio-economic benefits associated with the operational 3FM Project would be generated through employment, GVA, tax and community gain. The increase in throughput associated with the 3FM Project would deliver 2,027 direct and indirect jobs in Dublin and into some of the surrounding Counties, which is considered to be significant from a population and health perspective. GVA and tax would see a comparable increase.

In terms of community gain, integrating Dublin Port with Dublin City and its people is a core objective of the Masterplan. The 3FM Project seeks to deliver an active travel path, maritime village, new open space, extension of Irishtown Nature Park and public realm enhancements in addition to setting up a Community Benefit Fund for Education, Heritage & Maritime Training Skills projects within the Poolbeg area.

19 WASTE

The assessment of waste management associated with the 3FM Project discusses the potential waste streams that will be generated during the construction and operation phases of the 3FM Project. The potential effects from the forecast waste generation are assessed in the context of the effects on waste management infrastructure and legislation, policy and strategy targets. Mitigation measures are proposed where the potential for significant effects has been identified.

The 3FM Project will generate construction related waste and once operational the extended capacity at the port will facilitate an increased number of berthing opportunities and the likelihood of increased waste arising associated with the additional port capacity during the operational phase.

A carefully planned approach to waste management and adherence to the CEMP and RWMP during demolition phase will ensure that any waste produced during this phase will be recycled or recovered where possible. Minimal amounts of waste will need to be disposed of in landfill.

In addition, a number of measures have been introduced nationally to prevent materials from becoming waste from construction and demolition with the following applicable to waste arisings from 3FM project.

- National By-Product criteria¹¹ for Road Plannings as asphalt pavement material, in both milled and slab form, accepted at Reclaimed Asphalt Pavement plants.
- Two end-of-waste operators (Integrated Materials Solution and Starrus Eco Holdings Limited, Panda) have been consented to recycle aggregates into product ((Decision on Article 28 (Aggregate))¹²

Any non-hazardous or hazardous soils arising from excavation from 3FM that based on Waste Classification and WAC testing that are not suitable for recovery/disposal at facilities in Ireland may need to be exported abroad for final treatment.

Suitable CDW arising material will also be used in the following construction activities :

- Raising the ground level of the Maritime Village site by an average in excess of 1.5m which will require an estimated 30,200 m³ of imported fill material or suitable engineered fill material/suitable CDW arisings.
- Turning Circle 26,500 m³
- Area O 32,250 m³
- Area L 6,900 m³

The existing surfacing, concrete and underlying gravel infill at Area K will be removed or reused if suitable.

Therefore, the waste effects on the environmental and on landfill void space capacity are deemed to be Moderate with residual effect outcome being not significant. Minimal amounts of waste will need to be disposed of in landfill due to the mitigation measures being put in place.

¹¹ <https://www.epa.ie/publications/licensing--permitting/waste/consultation-paper--regulation-277-national-by-product-criteria-for-greenfield-soil--stone-used-in-developments.php>

¹² <https://www.epa.ie/publications/licensing--permitting/waste/consultation-paper-regulation-277-national-by-product-criteria-for-road-planings-used-in-rap-plants.php>

A carefully planned approach to waste management and adherence to the CEMP and RWMP during construction phase will ensure that waste is minimised, and any waste produced during this phase will be recycled or recovered where possible. Minimal amounts of waste will need to be disposed of in landfill.

Therefore, the effect of the construction phase in relation to waste management is deemed as neutral or slight with residual effect outcome being not significant.

While there may be a minor increase in waste due to anticipated increased freight, there will be no discernible effects to waste management once operational due to recycling and reuse policies, procedures and the implementation of the Waste Reception and Handling Plan. There is recycling capacity within the existing waste management infrastructure to manage waste arising from the operational phase of the development works. Minimal amounts of waste will need to be disposed of in landfill. Therefore, the effect of the operational phase in relation to waste management is deemed as neutral or slight with residual effect outcome being not significant.

20 CUMULATIVE EFFECTS AND ENVIRONMENTAL INTERACTIONS

The potential cumulative effects of consented schemes nearby the 3FM Project were assessed. Relevant projects were selected, and the project team defined significance thresholds and criteria for assessment. These were based on professional judgement, alongside relevant standards and guidelines, to determine whether in-combination effects give rise to additional levels of significance.

The ABR Project and MP2 Project were considered significant in terms of cumulative impact, as these projects involve potentially overlapping construction activities of a similar nature taking place across the navigation channel from the 3FM Project. The ABR Project was selected with regard to the completion of dredging of, and material recovery from the Alexandra Basin West after commencement of construction of the 3FM Project. The MP2 Project was selected due to the potential overlapping for construction activities of some of its later phases of marine infrastructure after the commencement of the 3FM Project.

The key environmental topics with potential cumulative effects with the 3FM Project were: Biodiversity; Water Quality (supported by Coastal Processes); Noise; and Waste. Construction phase mitigation measures were identified to prevent the potential interaction, and thus mitigate the potential for, cumulative effects on all of these environmental topics.

The potential cumulative effects resulting from dredging and disposal operations required inclusion of additional mitigation measures to separate operations in terms of time. This means that the dredging element of the 3FM Project will not overlap with ABR capital dredging and/or DPC maintenance dredging campaigns, thus reducing potential impacts to water quality, biodiversity/habitat deterioration and underwater noise. The ABR Project, completion of dredging at Alexandra Basin West, will require dredged material to be brought ashore for treatment and recovered as a fill material at the Berth 52/53 basin. Under 3FM, an estimated 70,000m³ of Dredge Material from Poolbeg Marina will require recovery/disposal. It is proposed that this material is also treated and recovered as a fill material at the Berth 52/53 basin under a revised IE licence, subject to availability of receptor capacity. The license revision process, and its in built controls, will therefore ensure that the two projects will not result in cumulative impact thus reducing potential impact to Waste.

Similarly, the piling operations for the 3FM Project will be separated in time from the MP2 Project piling operations, as a specific cumulative impact mitigation, in order to prevent potential impacts to underwater noise and biodiversity/marine mammals.

In terms of the operation phase of the in-port projects, such as the ABR and MP2 Projects, as well as those surrounding Dublin Port, such as the North Lotts/Grand Canal scheme, Poolbeg West SDZ, Howth Yacht Club Marina Extension and the Point Bridge and Dodder Bridge, it is noted that these developments will facilitate greater shipping and road traffic movements at the port. This is intrinsic to the objectives of the 3FM Project. However it should be noted that the TTA demonstrated that when the construction and operational cumulative traffic impact is considered from third party schemes along with the construction of the 3FM Project and the continuation of the Dublin Port activities (at a reduced level due to the construction activities) there is a reduction in traffic flows along the South Bank Road in the years 2026-2038 prior to the opening of the SPAR in 2039. Post 2038, any construction traffic associated with 3FM Project will be routed onto the SPAR, relieving South

Bank Road of construction vehicles generated by the 3FM Project. This removal of traffic from the external road network provides benefits to the schemes being progressed by others in the port environs. The use of high traffic growth rates in the TTA for non-port traffic flows to derive future year flows inherently incorporates development schemes being delivered in the local environs of the port up to the year 2040.

The 3FM Project will facilitate greater shipping and road traffic movements in the port environs which although will have positive cumulative impacts for traffic and transportation, will inherently have adverse residual cumulative impacts with regards to climate. However, the 3FM Project complies with existing and emerging policy requirements implemented through the CAP24, which includes national measures such as the electrification of the fleet and the biofuels blend. With regards to the 3FM Project, DPC has adhered to the requirements of section 15 of the Climate Action and Low Carbon Development Act 2015, as amended, and the Climate Action Plan 2024. For impacts under the direct control of DPC, the impacts have been suitably mitigated and designed in line with national policy. While there are moderate adverse residual cumulative impacts identified as a result of road traffic and shipping, the planned legislative mitigation measures at international, EU and national levels will reduce these impacts. DPC will continue to perform its functions, in so far as practicable, in a manner consistent with any current or future climate policy on road traffic and shipping to aid in the reduction of these indirect sources.

DPC has commissioned and published the Conservation Strategy 2024 for the entire Port estate as a pre-planning document to 3FM Project. This involves a strong commitment to Heritage values across all of Dublin Port's projects, which deliver a coherent heritage strategy across all the phases of Masterplan 2040. As such, the ABR Project, the MP2 Project and Alexander Quay West Project also involved the advice of the Heritage team and add a positive contribution to the interpretation of Heritage on the overall site. The Liffey-Tolka Project also offers a significant contribution to Port-City integration. Consequently, these projects connect to provide a heritage landscape with an overall positive social and cultural cumulative impact.

The other selected projects were assessed across all environmental topics and no significant cumulative impacts (positive or negative) were identified on the basis that the 3FM Project mitigations were applied. Therefore, no further cumulative impact mitigations were required.

The potential interactions between environmental aspects arising from within the 3FM Project were assessed. Each technical environmental chapter within the EIAR identifies and analyses the potential for other environmental interactions. These chapters also detail environmental baseline information and identify the significant potential and residual construction and operational effects/impacts of the discrete 3FM Project. The cumulative assessment identified many potential inter-relationships and interactions. Additional mitigation measures were included to minimise and/or off-set the potential for significant effects resulting from such interactions.

For example, an interaction link exists between Water Quality and Human Beings. Dredging operations has the potential to impact on water quality at water intakes and outfalls. Four power plants within the Dublin Port area abstract water from the Liffey. The water is abstracted as part of the electricity generation process and/or for cooling water components. High levels of suspended solids in cooling water has the potential to impact upon the plants' cooling systems and may result in an increase in operation and maintenance costs. A review of dredging simulation results showed that that the increased levels of suspended sediment concentrations at the

power station intakes are generally very small by comparison with background levels in the Liffey Estuary. It is therefore unlikely to have a significant effect on the quality of intake waters at power stations in terms of suspended solids content. Precautionary mitigation measures have been included as an additional safeguard. If dredging is scheduled to take place within a 500m radius of the intakes, the relevant stakeholders are notified so that additional measures can be taken if deemed necessary.

The interaction assessments also identified that an additional mitigation measure was required to address the interaction between noise & vibration and cultural heritage, to further mitigate the potential noise disturbance at Area K whereby the acoustic barrier was modified to provide a viewpoint supporting the connectivity of cultural heritage features. Where the noise barrier and Great South Wall (GSW) intersect, the proposed GSW interpretation incorporates panels with translucent material, painting a scene of the GSW.

The construction phase of the proposed 3FM Project is not likely to result in any significant vibration impacts at the nearest sensitive receptors. The contractor will adhere to the mitigation measures included in BS5228:2009+A1:2014 where practicable to reduce vibration levels from general and piling activities to the lowest possible levels. As an additional precautionary measure, it is recommended that vibration monitoring is conducted at the nearest properties on Pigeon House Road to the proposed piling works for the SPAR as a verification measure to ensure that no unusual sub-strata features generate unanticipated vibration effects at these properties.

All potential cumulative effects and environmental interactions of the 3FM Project's construction and operational stages are included in Chapter 20. All mitigation measures for the 3FM Project resulting from the individual assessments, and the cumulative effects and environmental assessment are listed in detail in Chapter 21 and the Project Construction Environmental Management Plan (CEMP). Provided the suggested mitigation measures as listed in the environmental chapters are employed during construction and/or operation the overall impact to the environment, even considered in combination, is considered negligible.

21 SUMMARY OF MITIGATION MEASURES & CONCLUSIONS

DPC seeks to achieve the highest possible standards of environmental management during both the construction and operational phases of the 3FM Project. A summary of all mitigation measures and monitoring requirements proposed within the Environmental Impact Assessment Report (EIAR) are contained in this Section.

21.1 Construction Phase Mitigation Measures

The EIAR assesses the likely significant effects of the 3FM Project on the environment arising from the construction of the 3FM Project. Integration of the engineering design team with the planning and environmental team from an early stage in the project has enabled mitigation by design to be used, causing many likely significant effects to be eliminated or reduced to an acceptable level during the preliminary design stage. This includes the incorporation of a range of mitigation measures into the design of permanent works including noise barriers, provision of Interpretative Markers to delineate the alignment of the Great South Wall (GSW), Active Travel Routes, and other community, biodiversity and heritage gain elements,

Following an examination, analysis and evaluation of the direct and indirect significant effects of the project in relation to the receiving environment, additional mitigation measures and monitoring programmes have been recommended which will be fully implemented during the construction phase of the 3FM Project.

Table 14 summarises the mitigation measures and monitoring programmes recommended within the EIAR during the construction phase of the 3FM Project. All mitigation measures proposed within the NIS have been captured by the EIAR. The development of the mitigation measures has greatly benefitted from the experience gained from monitoring the effectiveness of similar mitigation measures during the construction of the ABR Project since 2016 and more recently the construction of the MP2 Project since 2022.

Table 14 Construction Phase Mitigation measures and monitoring

| Potential Impact | Summary of Proposed Mitigation |
|---|--|
| Chapter 6 RISKS OF MAJOR ACCIDENTS & DISASTERS | |
| Potential for loss of life or injury to employees, Contractors, visitors and local residents. | The design of the 3FM Project has been informed by a COMAH land use planning assessment, the purpose of which was to examine the development in the context of the Health and Safety Authority’s COMAH land use planning guidance, and to identify the types of development that may be compatible with the COMAH risk zones around the NORA (and other COMAH) establishments. Based on this conservative assessment, it is considered that the final design layout of the 3FM Project would satisfy the HSA’s criteria under its land use planning guidelines. The 3FM Project will therefore not increase the risk of major accidents and disasters. To remain vigilant, DPC has developed a comprehensive Emergency Management Plan that caters for the range of accident and emergency events |
| Potential for damage to the environment. | |
| Potential for damage to the facilities, plant and equipment of DPC, its commercial partners, tenant companies and neighbours. | |

| Potential Impact | Summary of Proposed Mitigation |
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| | <p>that may occur within its estate (or that may occur outside of the estate and that are likely to have a direct, knock on effect).</p> <p>In the event of an incident, DPC would activate its plan accordingly, in which case people would be directed away from the source of the hazard.</p> <p>DPC's Emergency Management Plan competencies are continuously enhanced through participation in training and exercises at different levels.</p> |
| <p>Chapter 7 BIODIVERSITY, FLORA & FAUNA</p> | |
| <p>Japanese Knotweed, a regulated invasive plant species listed in the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011, as amended, has been recorded at locations on the Poolbeg peninsula in, or adjacent to Dublin Port lands. Two other invasive species have been detected, Sea Buckthorn and 3-cornered leek.</p> <p>A precautionary approach will be undertaken to prevent the importation and spread of Invasive Alien Species.</p> | <p>DPC has developed an Invasive Alien Plant Species Management Plan (2019) for all the port estate. In addition, a project specific Invasive Alien Species (IAS) Management Plan will be implemented for the duration of the proposed construction works. A draft IAS Management Plan which includes an initial IAS Assessment is presented in the Draft CEMP. The IAS Management Plan links into the Construction Waste Management Plan and Construction Traffic Management Plan to prevent the introduction or spread of IAS. The Plan outlines containment and eradication measures to be implemented when any IAS are identified.</p> <p><u>Prevention</u></p> <p>Prevention measures will range from raising awareness of IAS and the potential for their dispersal, to ensuring best practice in relation to the movement of materials, plant and personnel into, within or out of the operations area. Measures to be implemented shall include:</p> <ul style="list-style-type: none"> • Ensuring that rock armour, gravels, sand or soils to be imported to the site are sourced from authorised/licensed quarry operators; • Specifying that such material should be free of invasive plant species and their propagules; • Implementing a waste management plan for the proper storage and controlled movement of waste materials; • Implementing a materials handling plan for the proper storage and controlled movement of materials; • Implementing a construction traffic management plan for control of vehicle and plant access and movements, including wheel wash and plant inspection at site entrance; • Ensuring that all vehicles and construction plant arriving on site are reasonably clean and free of significant deposits of mud and plant debris (particularly tyres, wheel arches, excavator buckets and tracks) that might be a vector for spread of IAS; • Cordoning off any IAS locations on site identified and mapped in the initial IAS assessment; • Washing down machinery that has operated in IAS infested areas in designated locations before moving within the site or leaving the site; |

| Potential Impact | Summary of Proposed Mitigation |
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| | <ul style="list-style-type: none"> • Inclusion of IAS awareness in toolbox talks using visual aids for the identification of the most likely species to be encountered prepared by the initial IAS assessment; • Notification of any suspected new occurrences of IAS to the Environmental Facilities Manager. <p><u>Containment / Treatment</u></p> <p>If any IAS is identified on the construction site, the management plan will contain its spread in the first instance and subsequently eradicate it, if possible, from the site. This will include implementation of the following measures:</p> <ul style="list-style-type: none"> • Cordoning off any invasive species infestations to limit movement of people / machinery in infested area and relevant buffer zones; • Confirmation of the identification of the species concerned, and collation of relevant information; • Selection of the most appropriate best practice methods for control / treatment; • Prioritisation of treatment areas; • Undertaking physical or chemical control measures as appropriate in line with best practice guidance and in compliance with health and safety requirements; • Ensuring control measures are undertaken by suitably qualified personnel; • Handling and disposal of treated material appropriately to prevent further spread. |
| <p>Precautionary measures will be undertaken to minimise the risk of injury or disturbance to birds in the area of operations.</p> | <p>DPC has developed a Black Guillemot Management Plan 2023-2030, and a Tern Colony Management Plan 2023-2030 to secure the conservation objectives for Black Guillemot and Tern species in Dublin Port.</p> <p>A project specific Bird Management Plan will be implemented for the duration of the proposed construction works. A draft Birds & Marine Ecology Management Plan is presented in the Draft CEMP.</p> <p>The following precautionary measures will be undertaken to minimise the risk of injury or disturbance to nesting and breeding birds in the area of operations:</p> <ul style="list-style-type: none"> • The 3FM Project Black Guillemot Management Plan shall be implemented in full. • Where known Black Guillemot nesting sites are likely to be unavailable to birds in the following season due to 3FM Project construction works, they will be blocked in advance over the winter preceding the breeding season to prevent access and nest boxes will be deployed in the immediate vicinity. |

| Potential Impact | Summary of Proposed Mitigation |
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| | <ul style="list-style-type: none"> • A programme to monitor Black Guillemots in Dublin Port shall be undertaken. This monitoring programme shall continue throughout the construction phase and for a period of two years after the completion of the works, with monthly surveys during the breeding season from April to May. The results of this monitoring programme shall be submitted to the planning authority at 12-monthly intervals to maintain a public record. • The 3FM Project Tern Colony Management Plan shall be implemented in full. • A programme to monitor the existing tern colonies and proposed additional tern colony under the 3FM Project shall be undertaken. This monitoring programme shall continue throughout the construction phase and for a period of two years after the completion of the works, with surveys undertaken within the period from April to September, under licence from NPWS. The results of this monitoring programme shall be submitted to the planning authority at 12-monthly intervals to maintain a public record. • No pre-construction site clearance or removal of vegetation in terrestrial areas shall take place during the bird breeding season (1st March – 31st August). • Planting in the shelterbelt south of Area O shall include use of native species that maximise the foraging and nesting opportunities for passerines using the area. • No rock breaking shall take place during demolition of the Sludge Jetty within 75m of tern sub-colonies at CDL or ESB Platform during May and June. • No piling shall take place within 75m of tern sub-colonies at CDL or ESB Platform during May and June. • At the beginning of each working day or following any break lasting 30 minutes or longer, all piling will be subject to a soft start, to allow birds to become habituated to the increasing noise levels. • All Capital Dredging shall take place during the winter months when Terns are not present (October – March). • There is evidence that Sand Martin nest in crevasses in the harbour wall of Pigeon House Harbour to the east of the Sludge Jetty. There were however no Sand Martins recorded during surveys undertaken in 2024. The 3FM Project has been designed to avoid any direct impact on the length of harbour wall where Sand Martins have previously nested. Construction works proposed in the vicinity of the Harbour Wall will be planned to minimise disturbance during the bird breeding season. <p><u>Monitoring</u></p> |

| Potential Impact | Summary of Proposed Mitigation |
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| | <ul style="list-style-type: none"> • DPC is committed to continuing a programme to monitor Black Guillemots, Common Tern and Arctic Tern in Dublin Port throughout the construction phase of the 3FM Project and for a period of two years after the completion of such works. The results of this monitoring programme will be submitted to the planning authority at 12-monthly intervals to maintain a public record. • DPC will also continue to undertake a programme to monitor winter wetland birds in a subset of the adjacent European Sites of the South Dublin Bay and River Tolka Estuary Special Protection Area. This programme shall include the Tolka Estuary and the maritime area adjacent to the Great South Wall in the Lower Liffey Estuary. This monitoring programme will continue throughout the construction phase and for a period of two years after the completion of such works, with monthly surveys from October to March. The results of this monitoring programme will be submitted to the planning authority at 12-monthly intervals to maintain a public record. • A programme to monitor the Sand Martin colony at the entrance to Pigeon House Harbour shall be undertaken. Site visits between April and August will monitor activity to estimate apparently occupied nests. The results of this monitoring programme shall be submitted to the planning authority at 12-monthly intervals to maintain a public record. |
| <p>Precautionary measures will be undertaken to minimise the risk of injury or disturbance to marine ecology and fisheries in the area of operations.</p> | <p>A Birds and Marine Ecology Management Plan will be implemented for the duration of the proposed construction works, presented in the Draft CEMP. A Dredging Management Plan will also be implemented for the duration of the proposed construction works, presented in the Draft CEMP.</p> <p>The following key mitigation measures shall apply to Capital Dredging to minimise the impact of the proposed works on marine ecology:</p> <ul style="list-style-type: none"> • No over-spilling at the surface of the dredger for all dredging activities within the inner Liffey Channel will be permitted. This includes all proposed capital dredging required for the 3FM Project; • The dredger will work on one half of the channel at a time within the inner Liffey channel to prevent the formation of a silt curtain across the River Liffey; • A schedule of no-dredging windows has been prepared and will apply to specified locations in the navigation channel. The capital dredging of sediments within the navigation channel will be carried out during the winter months (October – March) to negate any potential impact on salmonid migration (particularly smolts) and summer bird feeding, notably terns, in the vicinity of the dredging operations. In addition, upstream of Berth 49 the no-dredging period will be extended to include the period from 15th March to 31st March. |

| Potential Impact | Summary of Proposed Mitigation |
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| | <ul style="list-style-type: none"> • A trailing suction hopper dredger (TSHD) or back-hoe dredger will be used for the capital dredging works. When operating in the River Liffey Channel, the TSHD pumps will be switched off when the drag head is being lifted and returned from the bottom as the dredger turns between successive lines of dredging to minimise the risk of fish entrainment. • A maximum of 4,100m³ of sediment and entrained water will be loaded into the dredger's hopper for each loading/dumping cycle. <p>The following key mitigation measures shall apply to impact piling activities to minimise the impact of the proposed works on fisheries:</p> <ul style="list-style-type: none"> • No impact piling for construction activities for SPAR Bridge, SPAR Viaduct, the Maritime Village and Ro-Ro Terminal will take place during March to May inclusive, the three months of the year when vulnerable smolts are likely to run in their highest numbers. • Due to the greatly reduced number of adult salmon returning in recent years, down to circa 500 individual salmon, an additional no-piling window will apply to July and August at the Ro-Ro Terminal. • The July-August closed period for piling also applies to the Turning Circle boundary wall and temporary works piling. This closed period also applies to the Lo-Lo Terminal (Area N outer piles and dolphins). |
| <p>Precautionary measures will be undertaken to minimise the risk of injury or disturbance to marine mammals in the area of operations</p> | <p>A Marine Mammals Management Plan will be implemented for the duration of the proposed construction works, presented in the Draft CEMP.</p> <p>The following precautionary measures will be undertaken to minimise the risk of injury or disturbance to marine mammals in the area of operations in line with National Parks and Wildlife Service (NPWS) Guidelines (2014):</p> <ul style="list-style-type: none"> • A trained and experienced Marine Mammal Observer (MMO) will be put in place during piling, dredging, demolition and dumping operations. The MMO will scan the surrounding area to ensure no marine mammals are in a pre-determined exclusion zone in the 30-minute period prior to operations. The NPWS exclusion zone is 500m for dredging and demolition works and 1,000m for piling activities. • Noise-producing activities will only commence in daylight hours where effective visual monitoring, as performed and determined by the MMO, has been achieved. Where effective visual monitoring is not possible, the sound-producing activities will be postponed until effective visual monitoring is possible. Visual scanning for marine mammals (in particular harbour porpoise) will only be effective during daylight hours and if the sea state is WMO Sea State 4 (≈Beaufort Force 4 conditions) or less. • For piling activities, where the output peak sound pressure level (in water) exceeds 170 dB re: 1µPa @ 1m, a ramp-up procedure will be employed following the pre-start monitoring. Underwater acoustic energy output will commence from a lower energy start-up and thereafter be allowed to |

| Potential Impact | Summary of Proposed Mitigation |
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| | <p>gradually build up to the necessary maximum output over a period of 20-40 minutes.</p> <ul style="list-style-type: none"> • If there is a break in piling / dredging activity for a period greater than 30 minutes then all pre-activity monitoring measures and ramp-up (where this is possible) will recommence as for start-up. • Once normal operations commence (including appropriate ramp-up procedures), there is no requirement to halt or discontinue the activity at night-time, nor if weather or visibility conditions deteriorate, nor if marine mammals occur within a radial distance of the sound source that is 500m for dredging and demolition works, and 1,000m for piling activities. • Once normal dredging operations commence there is no requirement to halt or discontinue the activity at night-time, nor if weather or visibility conditions deteriorate, nor if marine mammals occur within a radial distance of the sound source that is 500m for dredging and demolition works. Notwithstanding this, MMOs will implement additional best-practice mitigation where feasible by directing operations to areas where marine mammals are absent, or requesting delays to activities to provide animals an opportunity to disperse. • Any approach by marine mammals into the immediate (<50m) works area will be reported to the National Parks and Wildlife Service. • Non-piling windows, and implementation of piling controls when marine mammals occur in specified monitoring zones have been set for impact piling. • Piling is restricted to 0700h and 1900h (Monday to Friday), 0800h to 1300h (Saturday) and no piling will take place on Sundays or Bank Holidays. Therefore, during piling periods, active piling operations will only occur for a maximum of about 38% of that period, allowing extensive unimpeded use of the harbour area by marine mammals throughout project construction. • An extended monitoring zone will be implemented for harbour porpoise during piling at Area N K. This will include all areas within the Bull Walls, and no piling and Area will be permitted if harbour porpoise are present in this area during a pre-watch. A minimum of two MMOs are required to effectively monitor this extended zone. • The MMO will keep a record of the monitoring using a 'MMO form location and effort (coastal works)' available from the National Parks and Wildlife Service (NPWS) and submit to the NPWS on completion of the works. • In line with best international practice, a combination of visual and acoustic mitigation techniques will be used to ensure there are no significant impacts on all Annex II marine species, including harbour porpoise, grey seal and harbour seal. Static Acoustic Monitoring (SAM) |

| Potential Impact | Summary of Proposed Mitigation |
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| | <p>through the deployment of FPODS will be used. SAM monitoring sites will be established and maintained throughout the project and for two years post-construction. This technique is to complement and not replace visual techniques.</p> <ul style="list-style-type: none"> • The deployment of a SAM system will complement and extend the extensive database currently being collected as part of the ABR and MP2 Project environmental monitoring programmes. • The deployment of a Passive Acoustic Monitoring (PAM) system at North Bank Light in the inner Liffey channel will continue for the duration of the construction phase. The PAM system uses a hydrophone to detect the presence of marine mammals in real time. |
| Chapter 8 Land, SOILS, GEOLOGY, HYDROGEOLOGY | |
| <p>The potential risk to construction workers from contaminants during the earthworks is low with the exception of identified asbestos fibres at identified locations.</p> | <p>The risk to construction workers via the inhalation of asbestos fibres during earth works / ground disturbance shall be mitigated through the appropriate use of PPE / RPE.</p> |
| <p>There is potential for ground gas within Area O which was formally a landfill site operated by DCC.</p> | <p>A venting system is recommended in order to allow a steady release of ground gases during the construction phase. This will mitigate the risk of off-site ground gas migration. The type and specifications for the venting system should be determined at detailed design stage of the project.</p> <p>The construction phase will include the installation of ground gas protection measures within buildings in Area O. To achieve the appropriate level of protection, consideration has been given to BS8485:2015+A1:2019 'Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings'.</p> |
| Chapter 9 WATER QUALITY & FLOOD RISK | |
| <p>Mobilised suspended sediment and cement release through construction and demolition activities are the principal potential sources of water quality impact during the construction phase of the works.</p> | <p>A Water Quality Management Plan will be implemented for the duration of the proposed construction works, presented in the Draft CEMP.</p> <p>The following precautionary measures shall be undertaken to minimise the risk of impacting on water quality within the receiving environment:</p> <ul style="list-style-type: none"> • Sound design principles will be followed to adhere to relevant Irish guidelines and recognised international guidelines for best practice; • appropriate erosion and sediment controls during construction to prevent sediment pollution will be implemented; • Where preferential surface flow paths occur, silt fencing or other suitable barriers will be used to ensure silt laden or contaminated surface runoff from the site does not discharge directly to a water body or surface water drain. |

| Potential Impact | Summary of Proposed Mitigation |
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| | <ul style="list-style-type: none"> • In the event that dewatering of foundations or drainage trenches is required during construction and/or discharge of surface water from sumps, a treatment system prior to the discharge will be used; silt traps, settlement skips etc. This measure will allow additional settlement of any suspended solids within storm water arising from the construction areas. • Management and auditing procedures, including tool-box talks to personnel will be put in place to ensure that any works which have the potential to impact on the aquatic environment are being carried out in accordance with required permits, licences, certificates and planning permissions. • Existing and proposed surface water drainage and discharge points will be mapped on the Drainage layout. These will be noted on construction site plans and protected accordingly to ensure water bodies are not impacted from sediment and other pollutants using measures to intercept the pathway for such pollutants. • A project specific Pollution Incident Response Plan has been prepared and suitable training will be provided to relevant personnel detailed within the Pollution Incident Response Plan (see Draft CEMP). |
| Capital Dredging and Spoil Disposal | <p>A Dredging Management Plan will be implemented for the capital dredging proposed as part of the 3FM Project. The mitigation for dredging operations in the 3FM Project has been informed by the MP2 Project and the ABR Project monitoring and experience working in the same locations. The following key relevant mitigation measures will apply to each dredging campaign in the 3FM Project:</p> <ul style="list-style-type: none"> • Loading will be carried out by a backhoe dredger or trailing suction hopper dredger (TSHD). • The capital dredging activity will be carried out during the winter months (October – March) to negate any potential impact on salmonid migration (particularly smolts) and summer bird feeding, notably terns, in the vicinity of the dredging operations. • No over-spilling from the vessel will be permitted while the dredging activity is being carried out within the inner Liffey Channel. • The TSHD pumps will be switched off while the drag head is being lifted and returned to the bottom as the dredger turns between successive lines of dredging to minimise the risk of fish entrainment. • The dredger’s hopper will be filled to a maximum of 4,100m³(including entrained water) to control suspended solids released at the dumping site. This is equivalent to a maximum quantity per trip of 2,030 tonnes (wet weight). • Full time monitoring of Marine Mammals within 500m of loading and dumping operations will be undertaken in accordance with the measures |

| Potential Impact | Summary of Proposed Mitigation |
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| | <p>contained in the Guidance to Manage the Risk to Marine Mammals from Man-Made Sound Sources in Irish Waters (NPWS 2014).</p> <ul style="list-style-type: none"> • A documented Accident Prevention Procedure will be put in place prior to commencement. • A documented Emergency Response Procedure will be put in place prior to commencement. • A full record of loading and dumping tracks and record of the material being dumped will be maintained for each trip. • Dumping will be carried out through the vessel's hull. • The dredger will work on one half of the channel at a time within the inner Liffey channel to prevent the formation of a silt curtain across the River Liffey. <p>When any dredging is scheduled to take place within a 500m radius of power station intakes, the relevant stakeholders will be notified so that precautionary measures can be taken if deemed necessary.</p> |
| <p>Accidental release of highly alkaline contaminants from concrete and cement may arise during the demolition of buildings and structures and the construction of hardstand areas, waterside berths, quay walls, jetties, bridging structures, etc.</p> <p>Concrete and cement pollution may give rise to significant impacts on water quality in the absence of mitigation.</p> | <p>The following precautionary measures shall be undertaken to minimise the risk of impacting on water quality within the receiving environment:</p> <ul style="list-style-type: none"> • Breaking of concrete (associated with structure demolition) has the potential to emit alkaline dust into the receiving environment. Where necessary a barrier between the dust source and the sensitive receptor (the water body in this case) will be erected to limit the possibility of dust contacting the receptor; • Concrete use and production shall adhere to control measures outlined in Guidance for Pollution Prevention (GPP5): Works and maintenance in or near water (2017). Any on-site concrete production will have the following mitigation measures: bunded designated concrete washout area; closed circuit wheel wash; and initial siting of any concrete mixing facilities such that there is no production within a minimum of 10m from the aquatic zone; • The use of wet concrete and cement in or close to any water body will be carefully controlled so as to minimise the risk of any material entering the water, particularly from shuttered structures or the washing of equipment. • Where concrete is to be placed under water or in tidal conditions, specific fast-setting mix is required to limit segregation and washout of fine material/cement. This will normally be achieved by having either a higher than normal fines content, a higher cement content or the use of chemical admixtures. |
| <p>General water quality impacts may arise associated with works machinery, infrastructure and on-land operations</p> | <p>The following precautionary measures shall be undertaken to minimise the risk of impacting on water quality within the receiving environment:</p> |

| Potential Impact | Summary of Proposed Mitigation |
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| <p>including the temporary storage of construction materials, oils, fuels and chemicals.</p> <p>There is the potential for spillage or release of fuel oil and other dangerous substances to result in moderate to significant impacts on water quality in the absence of mitigation.</p> | <ul style="list-style-type: none"> • The risk of water quality impacts associated with works machinery, infrastructure and on-land operations (for example leakages/spillages of fuels, oils, other chemicals and wastewater) will be controlled through good site management and the adherence to codes and practices, • Management and auditing procedures, including tool box talks to personnel, will be put in place to ensure that any works which have the potential to impact on the aquatic environment are being carried out in accordance with required permits, licences, certificates and planning permissions; • Existing and proposed surface water drainage and discharge points will be mapped on the Drainage layout. These will be noted on construction site plans and protected accordingly to ensure water bodies are not impacted from sediment and other pollutants using measures to intercept the pathway for such pollutants, • Fuel, oil and chemical storage will be sited on an impervious base within a bund and secured. The base and bund walls must be impermeable to the material stored and of adequate capacity. The control measures in GPP2: Above Ground Oil Storage Tanks and GPP26 “Safe storage – drums and intermediate bulk containers” shall be implemented to ensure safe storage of oils and chemicals; • The safe operation of refuelling activities shall be in accordance with GPP 7 “Safe Storage – The safe operation of refuelling facilities”. |
| <p>Monitoring Measures</p> | <p>A water quality monitoring system has been designed to ensure robust protection of the marine environment and for users of the inner Liffey channel during the construction phase of the 3FM Project.</p> <p>It is proposed to maintain the four water quality monitoring stations already in position for the ABR Project and MP2 Project.</p> <p>The specification is based on 24/7 real time monitoring with water quality monitoring sensors giving high resolution data with respect to the following parameters</p> <ul style="list-style-type: none"> • Turbidity • Dissolved Oxygen • Temperature • Salinity • pH (additional proposed parameter) <p>Water level is also measured at one monitoring station to provide information on tidal state. Turbidity is measured as a surrogate for suspended solids. Site specific tests have previously been undertaken by the ABR Project to define the relationship between turbidity and suspended solids,</p> |

| Potential Impact | Summary of Proposed Mitigation |
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| | <p>A data acquisition and transfer system is being used to enable the transmission of high resolution data at approximately 15 minute intervals.</p> <p>Trigger levels that will prompt investigation are proposed for Dissolved Oxygen and Peak Suspended Solids based on Turbidity records in the Water Quality Management Plan (see Draft CEMP).</p> <p>The Dissolved Oxygen trigger level has been selected to safeguard fish-life.</p> <p>The monitoring network infrastructure has been in place since 2016 and will continue for the duration of the construction phase of the 3FM Project.</p> <p>This monitoring system has already generated a robust water quality baseline within the inner Liffey channel with the ability to identify water quality trends. The continuation of the monitoring system will serve to further strengthen the knowledge of water quality trends, a key indicator of the health of the marine environment.</p> <p>The water quality data currently being collected is circulated to Dublin City Council on a monthly basis. It is proposed that this transfer of information continues for the duration of the construction phase of the 3FM Project.</p> <p>The data collected is also being shared with research organisations (e.g. Dublin City University, Maynooth University and University College Cork).</p> |
| Chapter 10 AIR QUALITY | |
| <p>Construction works have the potential to result in local impacts through dust nuisance at the nearest sensitive receptors and also to sensitive ecosystems.</p> | <p>A draft Dust & Odour Management Plan has been prepared based upon the industry guidelines in the Building Research Establishment document entitled 'Control of Dust from Construction and Demolition Activities' (see Draft CEMP).</p> <p>The following precautionary measures shall be undertaken to minimise the potential nuisance caused by dust at the nearest sensitive receptors and on sensitive ecosystems:</p> <ul style="list-style-type: none"> • Site roads will be regularly cleaned and maintained as appropriate. Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential traffic only; • Any site roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions (also applies to vehicles delivering material with dust potential); • All HGVs and other site vehicles exiting the site will make use of a wheel wash facility prior to entering onto Dublin Port estate roads and public roads, to ensure mud and other wastes are not tracked onto the roads. • Wheel washes will be self-contained systems that do not require discharge of the wastewater to water bodies; • Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary; |

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| | <ul style="list-style-type: none"> • Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind; • Water misting, or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods; • All vehicles which present a risk of spillage of materials, while either delivering or removing materials, will be loaded in such a way as to prevent spillage on the public road; • It will be required that all vehicles are suitably maintained to ensure that emissions of engine generated pollutants are kept to a minimum; • Monthly monitoring of dust deposition levels will be undertaken for the duration of construction for comparison with the guideline of 350mg/m²/day (for non-hazardous dusts). This monitoring will be carried out at a minimum of four locations at sensitive receptors around the proposed works. Where dust levels are measured to be above this guideline, the mitigation measures in the area will be reviewed as part of a Dust Minimisation Plan. |
| <p>The potential exists for odour generation and nuisance to occur during the construction phase.</p> | <p>A draft Dust & Odour Management Plan has been prepared and follows the guidance presented in the Environment Agency of England and Wales “Odour Management Guidance” (H4 Guidance, 2011) (see Draft CEMP). The odour monitoring and investigation aspects of the OMP will follow the EPA “Odour Impact Assessment Guidance for EPA Licenced Sites”. The OMP will achieve the following:</p> <ul style="list-style-type: none"> • Employ appropriate methods, including monitoring and contingencies, to control and minimise odour pollution; • Prevent unacceptable odour releasing incidents or accidents by anticipating them and planning accordingly. <p>The plan considers sources, releases and impacts of odour and uses these to identify opportunities for odour management. The OMP will also include a periodic odour audit of the facility by a suitably qualified expert to identify all sources on site together with nature and scale of the odour release and associated construction details. In addition, the plan includes for complaint recording and investigation to ensure that all complaints received at the site are suitably addressed.</p> |
| CHAPTER 11 CLIMATE | |
| <p>Emissions of construction generated Green House Gases (GHG) will arise from embodied emissions in site material, direct emissions from plant machinery /equipment as well as emissions from vehicles delivering</p> | <p>It is proposed to develop a Project Carbon Management Plan (PCMP) for the project. This PCMP will be aligned with the principles of PAS2080:2023 – a global standard for managing whole-life (embodied and operational) carbon in the built environment and infrastructure. The development of the carbon life cycle assessment presented the EIAR is the first phase of the PCMP and this plan will be formally developed at detailed design stage by the design team to</p> |

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| <p>material and personnel to the construction site.</p> | <p>facilitate handover to the contractor for construction stage as a contractual obligation for a cap on the levels of embodied and operational carbon. Post construction the PCMP will be handed back to DPC to facilitate the operational management of carbon for the project.</p> <p>The PCMP will minimise the carbon footprint of the construction phase through requiring low emission plant; reducing embodied carbon by specifying low-carbon concrete mixes when possible; re-using/re-cycling material; limiting use of carbon-intensive materials; incorporating sustainable design principles; implementing efficient energy management systems and identifying energy saving opportunities; promoting use of carbon-neutral biofuels and renewable energy if possible.</p> <p>Embodied carbon in the materials employed in the construction phase dominate the climate impact and to mitigate these impacts, mandatory use of the following materials will be required by any contractor as a contractual obligation and recorded through the PCMP:</p> <ul style="list-style-type: none"> • As a replacement for traditional precast concrete materials made with Portland cement mixes, the proposed development will use 50% ground granulated blast-furnace slag (GGBS) cement for all structural and non-structural precast structures, kerbs, drains, etc. The exceptions to this commitment are the concretes required for the SPAR bridge which cannot meet this commitment at present; • Similarly, all concrete poured in-situ for the proposed development will consist of 50% GGBS cement blend as a minimum; and • All reinforcing steel or structural employed on site will be 85% minimum recycled steel but this excludes any structural steel associated with the SPAR bridge. <p>DPC will revisit this mix during detailed design to achieve greater embodied reductions where possible based on industry practices and innovative materials available at the time of construction.</p> <p>In addition to the above mitigation regarding material choices, there are a series of additional construction mitigation measures that will also be adopted as follows:</p> <ul style="list-style-type: none"> • The use of non-concrete assets shall be optimised in the design, e.g. gravel footpaths, grassed drains etc. to minimise the need for concrete. • All aggregates required for pavement materials shall be secondary aggregates. Virgin aggregates shall only be employed where it is demonstrated that secondary aggregates are unsuitable for structural reasons and/or they are unavailable. • Wherever available, the contractor shall secure construction materials from local/regional sources or sources within the State to minimise material transport emissions and reduce life cycle carbon emissions associated with the construction materials. |

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| | <ul style="list-style-type: none"> • For electricity generation at the construction compounds, hydrogen generators or electrified plant shall be utilised over traditional diesel generators. This shall also apply to lower powered mobile plant, as appropriate. • A regular maintenance schedule for all construction plant machinery shall be undertaken to maintain optimum machinery efficiency. • Sustainable timber post fencing will be specified over steel in boundary treatments where possible. • Engines will be turned off when machinery is not in use. • The use of private vehicles by construction staff to access the site will be minimised through the encouragement of use of public transport, encouragement of car sharing, and maximising use of local labour to reduce transport emissions. To implement this, the contractor shall prepare a Mobility Management Plan for site staff. |
| Chapter 12 NOISE & VIBRATION | |
| <p>There is the potential for noise impacts associated with the construction phase of the proposed development at the nearest noise sensitive receptors in the absence of mitigation.</p> | <p>A Noise & Vibration Management Plan (NVMP) will be implemented for the duration of the proposed construction works. A draft NVMP is presented in the Draft CEMP. This document will be reviewed and updated throughout the construction phase.</p> <p>A temporary 4m noise barrier will be installed between the construction works and the nearest properties at Pigeon House Road and the Coastguard Cottages throughout the duration of construction works in this area. This will ensure that the relevant BS5228 noise threshold limits will not be exceeded at these properties.</p> <p>British Standard BS5228:2009+A1:2014 – Noise and vibration control on construction and open sites: Part 1 - Noise outlines a range of measures that shall be used to reduce noise impacts at the nearest noise sensitive receptors. The measures, which will be applied, include:</p> <ul style="list-style-type: none"> • Ensuring that mechanical plant and equipment used for the purpose of the works are fitted with effective exhaust silencers and are maintained in good working order, • Careful selection of quiet plant and machinery to undertake the required work where available, • All major compressors will be ‘sound reduced’ models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use, • Any ancillary pneumatic percussive tools will be fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use, • Any ancillary pneumatic percussive tools will be fitted with mufflers or silencers of the type recommended by the manufacturers, |

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| | <ul style="list-style-type: none"> • Machines in intermittent use will be shut down in the intervening periods between work, • Ancillary plant such as generators, compressors and pumps will be placed behind existing physical barriers, and the direction of noise emissions from plant including exhausts or engines will be placed away from sensitive locations, in order to cause minimum noise disturbance, • Handling of all materials will take place in a manner which minimises noise emissions, • Audible warning systems will be switched to the minimum setting required by the Health and Safety Authority, • A complaints procedure will be operated by the Contractor throughout the construction phase and all efforts will be made to address any noise issues at the nearest noise sensitive properties. |
| <p>There is the potential for vibration impacts associated with the construction phase of the proposed development at the nearest noise sensitive receptors and sites of cultural heritage significance in the absence of mitigation.</p> | <p>Vibration monitoring will be undertaken throughout the construction phase where vibration generating activities have the potential to generate significant vibration impacts at the nearest sensitive properties.</p> <p>Chapter 16 Cultural Heritage provides details and the management plans that will be in place to control construction activities in close proximity to sites of cultural significance. As part of these management plans, vibration monitoring will be undertaken at these sites where there is potential for vibration-generating activities to impact upon these sites.</p> |
| <p>There is potential for underwater noise as a result of piling activities in the absence of mitigation.</p> | <p>The use of vibratory piles for a substantial portion of the piling requirements will reduce the amount of impact driving and underwater noise generation.</p> <p>Pile driving activity will be carried out as efficiently as possible to reduce the duration of the piling activity. Piling will only take place for a portion of each working day and will not be carried out at night.</p> <p>Seasonal constraints on pile driving will be implemented through mandatory non-piling windows for specific construction activities. Non-piling windows vary from two to five months in duration.</p> <p>All piling, dredging and demolition works will be undertaken in accordance with NPWS Guidelines (2014) at set out under Chapter 7 Biodiversity, Flora and Fauna.</p> |
| <p>Monitoring Measures</p> | <p>Continuous terrestrial noise monitoring will be undertaken for the duration of the construction works in accordance with BS7445: Description and Measurement of Environmental Noise.</p> <p>All measurements will be made using Type 1 precision digital sound levels meters and associated hardware. The following parameters will be recorded as a minimum: LAeq, LAmx, LAmin, LA10 & LA90.</p> |

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| | <p>The number and location of noise meters will be agreed with Dublin City Council (DCC). These will operate for the entire duration of the construction phase.</p> <p>A permanent secure noise monitoring station has previously been established at the marina adjacent to Pigeon House Road as part of the ABR Project. It is representative of nearest sensitive noise receptors and may prove to be an appropriate location for key elements of the 3FM Project subject to approval of DCC.</p> <p>Noise monitoring stations are also currently in operation at East Wall Road, and at Clontarf, representative of nearest sensitive noise receptors to the north and west of the 3FM Project site. It is proposed that these two monitoring stations will be maintained for the duration of the 3FM Project construction phase.</p> <p>An additional noise monitoring station is proposed towards Sandymount, sited to be representative of nearest sensitive noise receptors to the south of the 3FM Project site.</p> <p>All data will be collected and analysed on a weekly basis and the analysed data will be fed back to DPC and the Contractors with a view to reviewing the compliance of construction phase activities in the context of any relevant conditions in planning approval if granted, and the thresholds/requirements included in the draft Noise & Vibration Management Plan. This will also include any liaison requirement with DCC in this regard.</p> <p>Any noise nuisance issues associated with the construction phase activities will be immediately assessed and analysed in relation to the recorded noise levels and all correspondence with DPC, the Contractor, DCC and the residents will be conducted with the appropriate level of urgency. This will include the appropriate liaison with DPC and the Contractor to control activities to ensure that the construction phase activities are in line with any relevant planning conditions and the CEMP.</p> <p>Interim synoptic reports will be produced on a regular basis, usually calendar months, and submitted to DCC and the project liaison group.</p> <p>Summary data and graphical outputs for each year of the construction phase will form part of an Annual Environmental Report. The data will be prepared in an analytical output that will aim to provide a concise representation of the construction phase noise levels from the port and will aim to avoid presentation of lengthy datasets.</p> <p>Underwater noise surveys will be undertaken during the construction phase of the works:</p> <p>The underwater noise surveys will complement the existing underwater noise level measurements which have been recorded during the impact piling carried out inside Alexandra Basin West and in the Liffey channel for the ABR and MP2 Projects. This will provide additional validation of the underwater</p> |

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| | <p>noise modelling and to ensure the underwater noise levels are contained within the operations area of the port,</p> <p>Underwater noise surveys will be undertaken during the construction period at locations upriver and downstream of the works in the navigation channel. Monitoring will be carried out within two months following commencement of the piling activity.</p> |
| <p>Chapter 13 MATERIAL ASSETS - COASTAL PROCESSES</p> | |
| <p>Potential influence of proposed structures upon coastal processes could have negative environmental impacts.</p> | <p>Modelling of tidal currents and the movement of sediments has informed the final open piled design of the proposed Lo-Lo Terminal at Area N and bridge / viaduct spans to mitigate any impact on riverine and coastal environments, nearby European sites, and existing structures including the Great South Wall.</p> <p>This mitigation by design has reduced the potential impact of the 3FM Project on coastal processes to an imperceptible level.</p> |
| <p>Chapter 14 MATERIAL ASSETS - TRAFFIC & TRANSPORTATION</p> | |
| <p>Construction traffic during the construction phase of the 3FM Project will be offset by the phased closure of existing operations as the construction sequence progresses to refunction Port lands.</p> | <p>A Construction Traffic Management Plan will be implemented for the duration of the proposed construction works. A draft Construction Traffic Management Plan is presented in the Draft CEMP. The following mitigation measures shall be applied:</p> <ul style="list-style-type: none"> • Adhering to the Dublin City Council HGV Management Strategy; • A pre-defined haulage route will be agreed with DCC to avoid construction traffic through sensitive road networks at critical times; • Temporary warning signage will be installed, as necessary, • Wheel washing, roadside cleaning, load checking and general maintenance of larger vehicles will be in place, • Appropriate parking facilities for site operatives and visitors within the site will be provided with all parking areas clearly signed and monitored. • The use of private vehicles by construction staff to access the site will be minimised through the encouragement of use of public transport, encouragement of car sharing, and maximising use of local labour to reduce transport emissions. To implement this, the contractor shall prepare a Mobility Management Plan for site staff |
| <p>Chapter 15 MATERIAL ASSETS - SERVICES</p> | |
| <p>The 3FM Project has the potential to impact on existing and proposed utilities within the Poolbeg Peninsula and in the vicinity of proposed roadworks within the North Port Estate.</p> | <p>The 3FM Project has been designed to avoid any significant impact on existing and proposed utilities. The utilities include:</p> <ul style="list-style-type: none"> • NORA facilities at Ringsend and Poolbeg, • Uisce Éireann Ringsend Waste Water Treatment Plant; • Encyclis Waste to Energy Plant; • ESB Power Generation; |

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| | <ul style="list-style-type: none"> • ESB Power Supply Networks; • Proposed Codling Wind Park Onshore Substation; and • Propose Dublin City Council District Heating Scheme. <p>No mitigation measures are therefore required.</p> |
| <p>The 3FM Project requires services - Water Supply, Wastewater and Electricity Supply.</p> | <p>Water Supply - The appraisal has shown that, subject to agreement with Uisce Éireann via the Pre-Connection Enquiry system, the level of demand associated with the 3FM Project will be more than capable of being supplied by the existing Uisce Éireann infrastructure within the subject area.</p> <p>Waste Water - The appraisal has shown that, subject to agreement with Uisce Éireann via the Pre-Connection Enquiry system, the level of demand associated with the 3FM Project will be more than capable of being supplied by the existing Uisce Éireann infrastructure within the subject area.</p> <p>Electricity Supply - The appraisal has shown that the current electricity supply to the port is sufficient to meet the existing demands of the Dublin Port Estate. However short-term issues have been identified in ESB Power Networks ability to cater for project demands in the area, not just for Dublin Port but for all other local customers. DPC intend to liaise closely with ESB to ensure the 3FM Project's Electrical Load Requirements are met in line with the operational timeframes envisaged for the 3FM Project. This will be greatly assisted by the proximity of the 3FM Project to a major hub of electricity generation:</p> <p>The required level of capacity will be met by feeding the proposed sub-stations from the existing network, with MV cables uprated locally where required.</p> |
| <p>Chapter 16 CULTURAL HERITAGE (including Industrial & Archaeological)</p> | |
| <p>There is a need for an overarching Archaeology and Cultural Heritage Management Plan to be implemented during the construction phase</p> | <p>DPC has developed a Dublin Port Heritage Conservation Strategy in relation to heritage issues throughout the port estate and this shall apply to the 3FM Project.</p> <p>A project specific Archaeology and Cultural Heritage Management Plan will be implemented for the duration of the proposed construction works, presented in the Draft CEMP.</p> <p>Notification obligations relating to underwater archaeological heritage pursuant to Part 5 of the Historic and Archaeological Heritage Act 2023 will be adhered to.</p> |
| <p>Ground disturbance activities have the potential to expose elements of the Great South Wall.</p> | <p>Archaeological monitoring licensed by the National Monument Service will be conducted of all ground disturbance activities, including site investigations, with the proviso to resolve fully any archaeological material observed at that point.</p> |

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| | <p>Laser scan surveys of the Pigeon House Harbour area and the Great South Wall have been undertaken to record these structures in advance of any construction works.</p> |
| <p>The extension of capital dredging into the south side of the localised channel widening area and ship turning circle represents direct and permanent impacts on what appears to be previously un-dredged locations. It is an area of high archaeological potential and the recovery of shipping debris and/or shipwreck must be anticipated.</p> | <p>Archaeological monitoring licensed by the National Monument Service will be conducted of all seabed disturbances that might take place prior to construction, including site investigation, with the proviso to resolve fully any archaeological material observed at that point.</p> <p>Archaeological monitoring of all dredging activities and associated seabed disturbance activities conducted within the berth pockets and the localised channel widening area will be carried out, with the proviso to resolve full any material of archaeological significance observed at that point.</p> |
| <p>Monitoring Measures</p> | <p>Retaining an Archaeologist:</p> <ul style="list-style-type: none"> An archaeologist experienced in maritime archaeology will be retained for the duration of the relevant works. <p>Retaining a Heritage Architect:</p> <ul style="list-style-type: none"> A heritage architect experienced in maritime and industrial heritage will be retained for the duration of the relevant works, to advise specifically in relation to works associated with the breakwater terminus Pier Head. <p>Archaeological licences will be required to conduct the on-site archaeological works. Licence applications require the inclusion of detailed method statements, which outline the rationale for the works, and the means by which the works will be resolved.</p> <p>Monitoring will be carried out by suitably qualified and experienced maritime archaeological personnel licensed by the Department of Culture, Heritage and the Gaeltacht. Archaeological monitoring will be conducted during all terrestrial, inter-tidal/foreshore and seabed disturbances associated with the development.</p> <p>The monitoring will be undertaken in a safe working environment that will facilitate archaeological observations and the retrieval of objects that may be observed and that require consideration during the course of works.</p> <p>The monitoring will include a finds retrieval strategy that is in compliance with the requirements of the National Museum of Ireland.</p> <p>Any appropriate archaeological discoveries shall be notified to the Minister pursuant to section 139 of the Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023.</p> <p>The time scale for the construction phase will be made available to the archaeologist, with information on where and when ground disturbances will take place.</p> |

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| | <p>In the event of archaeologically significant features or material being uncovered during the construction phase, machine works will cease in the immediate area to allow the archaeologist/s to inspect any such material.</p> <p>Once the presence of archaeologically significant material is established, full archaeological recording of such material will be recommended. If it is not possible for the construction works to avoid the material, full excavation will be recommended. The extent and duration of excavation will be a matter for discussion between DPC and the licensing authorities.</p> <p>It is recommended that the core of a suitable archaeological team be on standby to deal with any such rescue excavation. This would be complimented in the event of a full excavation.</p> <p>It is recommended that an archaeological dive team is retained on standby for the duration of any in-water disturbance works on the basis of a twenty-four or forty-eight hour call-out response schedule, to deal with any archaeologically significant/potential material that is identified in the course of the seabed disturbance activities.</p> <p>A site office and facilities will be provided by DPC on site for use by archaeologists.</p> <p>Secure wet storage facilities will be provided on site by DPC to facilitate the temporary storage of artefacts that may be recorded during the course of the site work.</p> <p>Buoying/fencing of any such areas of discovery will be necessary if discovered and during excavation.</p> <p>Machinery traffic during construction will be restricted to avoid any identified archaeological site/s and their environs.</p> <p>Spoil will not be dumped on any of the selected sites or their environs.</p> <p>It is a condition of archaeological licensing that a detailed project report is lodged with the DCHG within 12 months of completion of site works. The report should be to publication standard and should include a full account, suitably illustrated, of all archaeological features, finds and stratigraphy, along with a discussion and specialist reports. Artefacts recovered during the works need to meet the requirements of the National Museum of Ireland.</p> |
| Chapter 17 LANDSCAPE & VISUAL | |
| <p>Due to distance and the broad scale of the landscape within which the works are located, the change in landscape and visual resource will be negligible and, therefore, the significance of landscape and visual effects during the construction stage will be minor adverse. No</p> | <p>Landscape mitigation measures are those taken to help remedy, reduce or compensate for significant landscape and visual impacts created by the development. No significant landscape or visual impacts are predicted for the 3FM Project during the construction phase. There is therefore no requirement for specific landscape mitigation measures to address significant impacts.</p> |

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| significant visual effects are therefore predicted at the construction stage. | |
| Chapter 18 POPULATION & HUMAN HEALTH | |
| Embedded mitigation measures | <p>Monitoring of dust, odour and noise during the construction phase will act as precursors to any health impact, thereby enabling a monitoring regime that enables intervention before any manifest adverse health outcome.</p> <p>As part of annual reporting, DPC already monitors numbers of employees and several financial Key Performance Indicators (KPIs) (such as turnover, profit, tax contributions) to measure year-on-year progress. The continued measurement of these will ensure that financial socio-economic benefits of the 3FM Project construction phase are captured.</p> |
| Chapter 19 WASTE | |
| Waste materials will be generated during the demolition and site clearance phase of the works | <p><u>Main Works Contractor</u></p> <ul style="list-style-type: none"> A Main Works Contractor (MWC) will be appointed. DPC and its appointed MWC will ensure that demolition wastes will be collected by an appropriately licensed waste management contractor and that all management routes comply with the European Union waste hierarchy of prevention, preparing for reuse, recycling, and recovery with disposal being the last and final option and with other legal requirements. All waste materials leaving the site will be transported and disposed or recovered through licenced operators and in accordance with national waste legislation. <p><u>Demolition Survey</u></p> <ul style="list-style-type: none"> The demolition works will be constructed in a phased manor. A Demolition Survey is required prior to any demolition work commencing in order to facilitate and maximise recovery of resources from demolition for beneficial reuse and recycling. The Demolition Survey will set out all high value waste materials, such as metals, that will be removed from buildings and segregated for possible onward reuse or recycling to maximise recovery. As per the best practice guidelines¹³ this will be informed by EU Guidelines for the waste audits before demolition and renovation works of buildings (May 2018). Removal offsite of any asbestos from the buildings to be demolished will be required prior to demolition. <p><u>Segregation & Storage of demolition materials</u></p> <p>Demolition debris will be separated into five waste streams on-site:</p> <ul style="list-style-type: none"> Construction debris (i.e. ceramics, tiles, plasterboard), |

¹³ <https://www.epa.ie/publications/circular-economy/resources/CDWasteGuidelines.pdf>

| Potential Impact | Summary of Proposed Mitigation |
|------------------|---|
| | <ul style="list-style-type: none"> • Masonry materials (i.e. brick, concrete blocks) • Metals, • Timber, • Universal waste (i.e. fluorescent bulbs, ballast and mercury containing switches). <p>On-site segregation of all hazardous waste materials into appropriate categories will be undertaken:</p> <ul style="list-style-type: none"> • Waste oils and fuels; • Paints, glues, adhesives and other known hazardous substances. <p>Wastes will be covered where required and stored in stockpiles, dedicated skips or secure containers for hazardous materials. Signage will be required to ensure waste is sorted into the appropriate categories on-site. Appropriate measures to prevent environmental impacts such as run-off, will be implemented as needed. The storage and reuse of demolition or excavation wastes on site may be subject to a number of waste licensing requirements. If these wastes are to be stored on site, prior to potential reuse or recovery during construction, this activity will be subject to a Waste Management Licence Exemption with a limited tonnage of material permitted to be stored on site. Storage will take place in a secure area on-site and the contractor will monitor the amount of waste stored to ensure that the permitted limits of the Exemption are not exceeded. DPC and its appointed contractor will consult with the EPA prior to construction to ensure that the appropriate Waste Management Licence or Exemption is in place.</p> <p><u>Reuse of demolished material on-site</u></p> <p>In order to divert waste from being reuse/recycled off site or landfilled, possibilities for reuse of inert demolition material as fill on site will be considered, following appropriate testing to ensure materials are suitable for their proposed end purpose. If suitable engineered fill material or suitable CDW arising material is identified in the construction phase/sequencing then this material will be used as infill. Suitable CDW arising material will be used in the following construction activities:</p> <ul style="list-style-type: none"> • It is proposed to raise the ground level of the Marina Village site by an average in excess of 1.5m which will require an estimated 30,200m³ of imported fill material or suitable engineered fill material/suitable CDW arisings. • Turning Circle (north-east corner of Masterplan Area M) 26,500m³ • Area O 32,250m³ • Area L 6,900 m³ <p>The existing surfacing, concrete and underlying gravel infill at Area K will be removed or reused if suitable.</p> |

| Potential Impact | Summary of Proposed Mitigation |
|--|---|
| | <p>This will be reviewed on an ongoing basis.</p> <p>DPC and its appointed MWC will consult with the EPA prior to construction to ensure that the appropriate licences, permits and exemptions are in place prior to initiation, for example, crushing concrete on site will require a waste facility permit.</p> <p>The existing 100 berth floating marina, and the dedicated rowing pontoons at the Marina Village site will also be removed together with their anchor block mooring systems and access walkways. Where possible elements will be reused in the proposed new facilities.</p> <p>Under section 3(1) of the Waste Management Act 1996, as amended the requirements do not apply to the following materials, which hence are not considered 'waste'¹⁴:</p> <ul style="list-style-type: none"> • Land (in-situ) including unexcavated contaminated soil and buildings permanently connected with land – relates to land and buildings prior to any construction or demolition where material remains untouched. Once it has been excavated or otherwise removed, the material may enter into the control regime set down by the Waste Management Acts. • Uncontaminated soil and other naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state on the site from which it was excavated. <p>In addition, the following provisions within the European Union (Waste Directive) Regulations 2011–2020 allow for the classification of resources out of the waste regime as follows:</p> <ul style="list-style-type: none"> • Article 27 allows for the notification of a material as a by-product rather than a waste where certain criteria can be demonstrated by the legal person (i.e. further use is certain, no need for further processing, produced as part of a process and further use is lawful). <p>Article 28 sets out the grounds by which a material, which is recovered or recycled from waste, can be deemed to be no longer a waste and complies with a set of end-of-waste criteria (substance/ object to be used for specific purposes, a market or demand exists, fulfils technical requirements and no overall adverse impact to human health or the environment).</p> |
| <p>There is likely to be an increase in the amount of waste produced during the construction phase of the works.</p> | <p><u>Duty of Care in relation to correct waste authorisations</u></p> <p>Contractors working on site during the works will be responsible for the collection, control and disposal of all wastes generated by the works. DPC and its appointed MWC will ensure that waste is handled only by a body authorised under the Waste Management Act as amended to manage it. This</p> |

¹⁴ Best practice for the preparation of resource & waste management plans for construction & demolition projects EPA 2021

| Potential Impact | Summary of Proposed Mitigation |
|------------------|---|
| | <p>duty implies, at the very least, checking to see that the required authorisation is in place, has not expired and is appropriate for the waste types that are to be handled. DPC and its appointed MWC will ensure that all waste materials leaving the site will be transported via a licensed carrier and disposed or recovered through licenced operators and in accordance with national waste legislation. Monitoring and updating of records will be implemented.</p> <p><u>On-site waste management</u></p> <p>Project design will incorporate adequate dedicated space for a Waste Storage Area(s) to cater for the segregation and storage of all various waste streams during construction. This waste storage compound will be fully enclosed within the development and will allow for waste sorting, segregation, handling activities such as bailing of cardboard and plastic and sufficient waste storage.</p> <p>Site compounds are indicated in Chapter 5. Separate compounds will be used for different phases of the works. Each compound is located in or immediately adjacent to the relevant works phase, such as to cause minimal interference to general port operations. Wastes will be covered where required and stored in stockpiles, dedicated skips or other suitable receptacles and secure containers for hazardous materials. Signage will be required to ensure waste is sorted into the appropriate categories on-site. Appropriate measures to prevent environmental impacts such as run-off, will be implemented as needed. The waste storage area(s) will be assigned and all construction staff provided with training regarding the waste management procedures on commencement of the project. The Contractor will ensure adequate security measures are put in place.</p> <p><u>Segregation of Materials</u></p> <p>Construction waste materials shall be sorted and segregated on-site for recycling into appropriate categories on-site, for example:</p> <ul style="list-style-type: none"> • Wood/Timber • Metals • Cardboard & paper • Glass • Plastics • Rubble • General waste <p><u>Reuse of demolished material on site</u></p> <p>In order to divert waste from landfill, possibilities for reuse of inert demolition material as fill on site will be considered, following appropriate testing to ensure materials are suitable for their proposed end purpose.</p> |

| Potential Impact | Summary of Proposed Mitigation |
|------------------|---|
| | <p>Currently there is no proposed areas to be infilled using engineered fill material and suitable CDW arising from demolition works within the footprint of the development. However this will be reviewed on an ongoing basis. DPC and its appointed MWC will consult with the EPA prior to construction to ensure that the appropriate licences, permits and exemptions are in place prior to initiation.</p> <p>Under section 3(1) of the Waste Management Act 1996, as amended the requirements do not apply to the following materials, which hence are not considered 'waste'¹⁵:</p> <ul style="list-style-type: none"> • Land (in-situ) including unexcavated contaminated soil and buildings permanently connected with land – relates to land and buildings prior to any construction or demolition where material remains untouched. Once it has been excavated or otherwise removed, the material may enter into the control regime set down by the Waste Management Acts. • Uncontaminated soil and other naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state on the site from which it was excavated. <p>In addition the following provisions within the European Union (Waste Directive) Regulations 2011–2020 allow for the classification of resources out of the waste regime as follows:</p> <ul style="list-style-type: none"> • Article 27 allows for the notification of a material as a by-product rather than a waste where certain criteria can be demonstrated by the legal person (i.e. further use is certain, no need for further processing, produced as part of a process and further use is lawful). • Article 28 sets out the grounds by which a material, which is recovered or recycled from waste, can be deemed to be no longer a waste and complies with a set of end-of-waste criteria (substance/ object to be used for specific purposes, a market or demand exists, fulfils technical requirements and no overall adverse impact to human health or the environment). <p><u>Construction Environmental Management Plan (CEMP)</u></p> <p>Construction waste will be managed as part of the CWMP contained in the CEMP, which will be implemented by the appointed contractor for the duration of the construction works. As demonstrated in the draft CEMP, the CEMP will contain procedures for the management of waste and related pollution control measures. The CEMP will be a live document and will be subject to revision throughout the course of the construction phase but will contain all measures</p> |

¹⁵ Best practice for the preparation of resource & waste management plans for construction & demolition projects EPA 2021

| Potential Impact | Summary of Proposed Mitigation |
|------------------|--|
| | <p>outlined in the draft CEMP appended to the EIAR. Specific waste management requirements include:</p> <ul style="list-style-type: none"> • Identify how the waste will be dealt with (i.e. disposal, re-use on/off site etc.). • Building materials should be chosen with an aim to ‘design out waste.’ • Identify potential end markets e.g. reuse, recycling facilities, waste treatment facilities and disposal sites. • All waste leaving site will be recycled, recovered or reused where possible, with the exception of those waste streams for which appropriate facilities are currently not available. • On-site segregation of non-hazardous waste materials into appropriate categories, where possible, including any excavated soils, concrete, bricks, tiles, ceramics and plasterboard, metals and timber. • On-site segregation of all hazardous waste materials into appropriate categories including contaminated soils, waste oil and fuels and paints, glues, adhesives and other known hazardous substances. • Control measures and attention to materials quantity requirements to avoid over-ordering and generation of waste materials. • Agreements with materials suppliers to reduce the amount of packaging or to participate in a packaging take-back Scheme. • Implement a ‘just in time’ materials delivery systems to avoid materials being stockpiled, which increases the risk of the damage and disposal as waste. • Segregation of waste at source where practical. • All waste materials will be stored in skips or other suitable receptacles in designated areas of the site. The waste storage area(s) will be assigned and all construction staff provided with training regarding the waste management procedures on commencement of the project. • Measures to ensure appropriate staff training and levels of awareness in relation to waste management. • Waste streams will be collected by an appropriately licensed and permitted private waste contractor, appointed by the contractor for recycling, recovery or disposal at suitably licensed facilities. • Provide a method to calculate the difference between expected waste quantities prior to commencement of the project and actual waste quantities after the project is complete. • The appointed contractors for the site preparation, piling, earthworks and construction phases of the works will be contractually obliged to follow the CEMP and all relevant legislation. |

| Potential Impact | Summary of Proposed Mitigation |
|-------------------------|--|
| | <p><u>Project Resource and Waste Management Plan (RWMP)</u></p> <p>A Project RWMP will be prepared in accordance with 'Best Practice Guidelines for the preparation of resource & waste management plans for construction & demolition projects.' A preliminary draft plan has been incorporated into the CEMP to ensure effective waste management and recycling of waste generated during the works.</p> <p>The Plan will be implemented from the outset of the project and throughout the duration of the project taking into consideration the waste management hierarchy to encourage sustainable development, environmental protection and optimum use of resources. The appointed contractors for the site preparation, earthworks and construction phases of the works will be contractually obliged to follow the Project RWMP and all relevant legislation.</p> <p><u>Waste Arising from Wash Down Facility</u></p> <p>Solid waste in the form of sediments will arise from the wheel wash unit settlement tank. The unit will be inspected daily (for example, to check automated features are working and settlement content) and emptied in accordance with manufacturer's instructions. The solid residues will be analysed and the disposal route appropriately selected based on the results of this analysis. A gully emptier tanker will be used to remove settlement tank waste which will be disposed of at an approved waste disposal site.</p> <p><u>Fuels and hydraulic oils/lubricants</u></p> <p>Contractors will ensure all plant is inspected and serviced in accordance with its schedule. A bunded disposal area will be provided. Contractors will provide staff training on the waste management strategy. Disposal/recovery under licence.</p> |
| Monitoring Requirements | <p>All waste types and amounts generated will be recorded and reviewed at regular intervals, to allow for continuous analysis and review of procedures that will be made to reduce waste to landfill, increase the percentage of recycling and reduce waste overall as much as possible.</p> <p>Waste storage will take place in a secure area on-site and the appointed contractor will monitor the amount of waste stored to ensure that the permitted limits of any Exemption are not exceeded. The CEMP will set out measures and procedures to monitor waste flows on site and update records.</p> <p>The appointed contractor will be required to appoint a Resource Manager (RM) throughout the construction stage of the proposed development. The RM will be trained in how to set up and maintain a record keeping system, how to perform, audit and how to establish targets for waste management on site. They will also be trained in the best method for sorting, segregation and</p> |

| Potential Impact | Summary of Proposed Mitigation |
|------------------|---|
| | <p>storage of recyclable materials, have information on the materials that can be reused on-site and implement the Project C&D Waste Management</p> <p>Training of staff on site will be coordinated by the RM and as such, a waste training programme will be organised. A basic awareness course will be held for all contractor site personnel to outline the RWMP and to detail the sorting and segregation of waste at source. This may be incorporated with other training needs (e.g. general site induction, safety training etc.). This basic course will describe the materials to be sorted and segregated, the storage methods and the location of waste storage areas. A subsection on hazardous wastes will be incorporated and the particular dangers of each hazardous waste will be explained.</p> <p>Records will be kept for each waste material which leaves the site, whether for reuse on another site, recovery, recycling or disposal.</p> <p>A system will be put in place to record the waste arising on site during demolition and construction phases. The RM will have responsibility to maintain and record the following:</p> <ul style="list-style-type: none"> • List of up-to-date authorised waste collection permit NWCPO numbers and destination facilities permit/waste licence/PPC numbers being used • Provide when required letter on headed paper signed by relevant competent person from the destination facilities confirming acceptance of the material and tonnages agree specifically referencing the site • Waste Classification undertaken were required (Laboratory testing and Haz Waste Online results) • Waste taken off-site for reuse • Waste taken off-site for recovery • Waste taken off-site for recycling • Waste taken off-site for disposal <p>For each movement of waste off-site a signed waste collection docket will be obtained by the RM from the licensed waste contractor. This will be carried out for each material type. This system will also be linked with the delivery records. A signed waste acceptance docket will be issued for each movement of waste on-site. The RM will ensure that the waste docket used are specific to the authorised waste collector that collected the waste. If waste movements are not accounted for, the reasons for this should be established in order to see if and why the record keeping system has not been maintained. Each material type will be examined in order to see where the largest percentage waste generation is occurring. The waste management methods for each material type will be reviewed in order to highlight how waste can be minimized.</p> |

| Potential Impact | Summary of Proposed Mitigation |
|------------------|---|
| | <p>The appointed RM will be responsible for conducting a waste audit at the site during the C&D phase of the development. A review of all records for waste generated and transported off-site, should be undertaken mid-way through the C&D phase.</p> <p>Upon completion of the C&D phase a final report will be prepared summarising the outcomes of waste management processes adopted and the total recycling / reuse / recovery figures for the proposed development.</p> |

Mitigation by avoidance has also been used, where possible. A summary of the Closed Periods identified by the mitigation measures are set out below:

Capital Dredging

Mitigation by avoidance include restricting capital dredging to the winter seasons (October to March) to avoid disturbance of nesting terns. The proposed capital dredging Closed Periods are set out in **Figure 38**.

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| All Capital Dredging | | | | | | | | | | | | |
| Upstream of Berth 49 includes the period 15th to 31st March | | | | | | | | | | | | |

Figure 38 Capital Dredging Closed Periods (Non-dredging windows denoted by orange coloured cells)

Piling Activity

Riverside impact piling activity is also restricted to avoid disturbance of migrating salmon. The proposed Closed Periods for riverside impact piling are set out in **Figure 39**.

- The period March to May represents the peak smolt run (river to sea)
- The period July to August represents the peak adult salmon return (sea to river).

Vibratory piling is allowable during these periods.

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| SPAR bridge | | | | | | | | | | | | |
| SPAR Viaduct | | | | | | | | | | | | |
| Marina (pontoon piles) | | | | | | | | | | | | |
| Area K Berth 45 | | | | | | | | | | | | |
| Area K Ro-Ro ramp locating piles | | | | | | | | | | | | |
| Turning circle and temporary works piling | | | | | | | | | | | | |
| Area N outer piles x 5 rigs | | | | | | | | | | | | |
| Area N inner piles x 5 rigs | | | | | | | | | | | | |
| ESB dolphin | | | | | | | | | | | | |

Figure 39 Impact Piling Closed Periods (Non-impact piling windows denoted by orange coloured cells)

Impact piling activity within 75m of Dublin Port’s tern colonies is also restricted to avoid disturbance. The proposed closed periods for impact piling proximate the tern colonies are set out in Figure 40. These closed periods coincide with the restrictions for salmon impacts mitigation at Area K and Area N.

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Impact Piling within 75m of the Tern Colonies | | | | | | | | | | | | |

Figure 40 Piling Closed Periods within 75m of Dublin Port’s Tern Colonies (Non-impact piling windows denoted by orange coloured cells)

21.2 Implementation of Construction Phase Mitigation Measures

DPC intends to appoint a Contractor(s) to undertake each phase of the works. The mitigation measures set out in the EIAR have been incorporated into a Draft Construction Environmental Management Plan (CEMP) for the 3FM Project which forms part of the 3FM Project planning application (under separate cover). The draft CEMP sets out the minimum requirements which will be adhered to during the construction phase of the 3FM Project.

The Draft CEMP will form part of the Contract Documents for the construction stage to ensure that the Contractor undertakes the works required to implement the mitigation measures.

DPC has an established liaison group for the ABR Project and MP2 Project which includes representatives of DPC, the Contractor, Dublin City Council (DCC) and MARA. The group meets at quarterly intervals each year with an agenda and minutes taken of the meetings. It is proposed that this liaison group will also provide environmental oversight of the construction phase of the 3FM Project.

DPC will appoint a suitably qualified person to the role of Environmental Facilities Manager (Environmental Clerk of Works) to monitor the 3FM Project construction works. The Environmental Facilities Manager will provide monthly reports to the members of the liaison group. The Environmental Facilities Manager will work

closely with the Contractor's site supervisors to monitor activities and ensure that all relevant environmental legislation is complied with and that the requirements of the CEMP are implemented. The Environmental Facilities Manager will have the authority to review method statements, oversee works and instruct action, as appropriate, including the authority to require the temporary cessation of works, where necessary.

A suite of draft Construction Environmental Management Plans has been prepared for the construction phase of the 3FM Project and are presented in the Draft CEMP (Table 15). These draft Construction Environmental Management Plans will be finalised as required prior to the commencement of construction and will incorporate the mitigation measures outlined in the documentation submitted with the application for permission, and will include any additional requirements pursuant to conditions attached to statutory consents. In addition, regular audits of the CEMP will be undertaken during the construction phase of the works by the Environmental Facilities Manager.

A suite of monitoring programmes has also been prepared for the construction phase of the of the 3FM Project and are presented in the Draft CEMP and summarized in Table 16Table 15.

Table 15 Summary of the Construction Environmental Management Plans

| Type of Environmental Management Plan | Ongoing Mitigation Required | Ongoing Mitigation Specific Requirements | Ongoing Monitoring/ Auditing Required | Timing of Ongoing Monitoring | Reporting Requirements | Reporting Procedures | Ongoing Liaison Required | Other Specific Requirements |
|---|-----------------------------|---|---------------------------------------|---|---|--|--------------------------|--|
| Construction Traffic Management Plan | Yes | Compliance with DCC's HGV Management Strategy | Yes | During Construction | Quarterly Reports | Report submitted to Planning Authority | Yes | Complaints Procedure |
| Invasive Alien Species Management Plan | Yes | Precautionary measures to prevent importation and spread | Yes | During Construction | Quarterly Reports | Report submitted to Planning Authority | Yes | Containment / Treatment required if any Invasive Alien Species are found on the site |
| Construction Waste Management Plan | Yes | Compliance with the Waste Framework directive (2008/98/EC) | Yes | During Construction | Monthly Reports, input to Annual Environmental Report | Report submitted to Planning Authority and EPA | Yes | Complaints Procedure |
| Resource & Waste Management Plan | Yes | Prepared in line with Best Practice guidelines for the preparation of Resource & Waste Management Plans for construction & demolition projects, EPA 2021. | Yes | During Construction | Monthly Reports, input to Annual Environmental Report | Report submitted to Planning Authority and EPA | Yes | Complaints Procedure |
| Noise & Vibration Management Plan | Yes | Compliance with NRA Guidelines and BS5228:2009+A1:2014 | Yes | Preconstruction and during construction | Monthly Reports, input to Annual Environmental Report | Report submitted to Planning Authority and EPA | Yes | Specific noise limits to be met at nearest noise sensitive receptors, Complaints Procedure |
| Dust and Odour Management Plan | Yes | Compliance with EPA and BRE Guidelines | Yes | Preconstruction and during construction | Monthly Reports, input to Annual Environmental Report | Report submitted to Planning Authority and EPA | Yes | Complaints Procedure |

| Type of Environmental Management Plan | Ongoing Mitigation Required | Ongoing Mitigation Specific Requirements | Ongoing Monitoring/ Auditing Required | Timing of Ongoing Monitoring | Reporting Requirements | Reporting Procedures | Ongoing Liaison Required | Other Specific Requirements |
|--|-----------------------------|---|---|---|---|--|--------------------------|--|
| Marine Mammals Management Plan | Yes | Compliance with NPWS Guidelines | Use of MMOs, installation of SAM system | Preconstruction, during construction and for 2 years after works completion | Monthly Reports, input to Annual Environmental Report | Report submitted to Planning Authority and NPWS | Yes | Close liaison required with NPWS |
| Birds and Marine Ecology Management Plan | Yes | Adherence to piling and dredging mitigation measures | Specialist surveys required | Preconstruction, during construction and for 2 years after works completion | Monthly Reports, input to Annual Environmental Report | Report submitted to Planning Authority and NPWS | Yes | Implementation of DPC's Black Guillemot and Tern Management Plans. |
| Archaeology and Cultural Heritage Management Plan | Yes | Compliance with DHLGH Guidelines | Monitoring to be undertaken by conservation engineer, Grade 1 Conservation Architect and project archaeologist. | During Construction | Monthly Reports, input to Annual Environmental Report | Report submitted to Planning Authority and DHLGH | Yes | Appropriate Licences required from DHLGH |
| Water Quality Management Plan | Yes | Compliance with EPA Guidelines etc | Installation of real-time water quality monitoring system | Preconstruction and during construction | Monthly Reports, input to Annual Environmental Report | Report submitted to Planning Authority and EPA | Yes | Complaints Procedure |
| Dredging Management Plan | Yes | Adherence to dredging mitigation measures and compliance with Dumping at Sea Permit and Foreshore Licence | Yes | During Construction | Monthly Reports, input to Annual Environmental Report | Report submitted to Planning Authority and EPA | Yes | Complaints Procedure |
| Pollution Incident Response Plan | Yes | Adherence to guidelines for rapid and efficient response to minimize environmental impact | Monitoring of pollution events required and records of | During construction | Detailed record of all pollution events and responses, costs involved | Report submitted to Planning Authority and EPA | Yes | Specific training, and debriefing post pollution events to establish causes of events, lessons learned and preventive or corrective action required. |

| Type of Environmental Management Plan | Ongoing Mitigation Required | Ongoing Mitigation Specific Requirements | Ongoing Monitoring/ Auditing Required | Timing of Ongoing Monitoring | Reporting Requirements | Reporting Procedures | Ongoing Liaison Required | Other Specific Requirements |
|---------------------------------------|-----------------------------|---|---------------------------------------|------------------------------|---|--|--------------------------|--|
| | | | pollution prevention equipment. | | and environmental impacts. | | | |
| Project Carbon Management Plan | Yes | Aligned with the principles of PAS2080:2023 | Yes | During construction | Monthly Reports, input to Annual Environmental Report | Report submitted to Planning Authority | Yes | Close liaison required with Contractor |

Table 16 Summary of Environmental Monitoring Programmes

| Monitoring Programme | Monitoring Element | Frequency of Monitoring | Location | Parameters Measured | Surveyors / Support | Sampling Constraints | Action Threshold | Monitoring and Reporting | Report / Frequency |
|------------------------|--|---|---|---|---------------------|--|--|---|--|
| BIRD MONITORING | Census of Black Guillemot Population nesting in Dublin Port | Annually in period 26 March to 15 May. Two surveys to be carried out on two separate dates. | Quaysides within Dublin Port | Number Black Guillemots on land or sea within 300m of the shore Number of occupied nest sites and associated adults Number of nest boxes occupied | 2 / Boat Support | 0500 - 0900 BST. Beaufort 4 or less. Calm Sea Conditions | N/A | Bird Specialist | Annually (year ending March) by 31st July each year. |
| | Census of Common and Arctic Terns nesting in Dublin Port | Annually in period 10 June to 15 July | Permanent Structures and Pontoons in Dublin Port | Number of apparently occupied nests (egg clutches or flush count). | 2 / Boat Support | Moderate weather and sea conditions. | N/A | Bird Specialist under licence from NPWS | Annually (year ending March) by 31st July each year. |
| | Winter Wetland Birds | Monthly from October 1 to March 31 during each year of the project | Intertidal areas within inner Liffey channel including Tolka Estuary | Bird Flocks - species and approx. numbers. | 2 to 3 as required | Low tide ± 2 hours. Daylight. Good weather conditions. | N/A | Bird Specialist | Annually (year ending March) by 31st July each year. |
| | Sand Martins | Annually in period April to August. Two surveys to be carried out on two separate dates. | Pigeon House Precinct and environs | Number of Sand Martins on land or sea within 300m of the shore and estimate apparently occupied nests. | 2 / Boat Support | 0500 - 0900 BST. Beaufort 4 or less. Calm Sea Conditions | N/A | Bird Specialist | Annually (year ending March) by 31st July each year. |
| MARINE MAMMALS | Marine Mammal Observation in exclusion zones | For piling, dredging and demolition operations within the foreshore | Within 500m of dredging / demolition operations. Within 1000m of piling operations. | Presence of marine mammals | 1 to 3 as required | Suitable vantage point./ on dredging vessels. | Presence of marine mammal in exclusion zone. | Marine Mammal Observer | NPWS MMO Location and Effort Forms |

| Monitoring Programme | Monitoring Element | Frequency of Monitoring | Location | Parameters Measured | Surveyors / Support | Sampling Constraints | Action Threshold | Monitoring and Reporting | Report / Frequency |
|-----------------------------------|---|---|--|--|---|---|--|----------------------------------|---|
| | Continuous Static Acoustic Monitoring (SAM) | Ongoing logging using F-PODS at four stations | 4 locations Dublin Bay/Lower Liffey | Echolocation clicks of dolphins and porpoises | F-PODS to be retrieved every 3-4 months | F-PODS to be positioned on seabed using acoustic releases | N/A | Marine Mammal Ecologist | Annually (year ending March) by 31st July each year. |
| | Continuous Passive Acoustic Monitoring (PAM) | Ongoing logging using hydrophone at one station | North Bank Light, inner Liffey channel | Echolocation clicks of dolphins and porpoises | PAM system to be serviced annually | N/A | Presence/Absence | Marine Mammal Ecologist | Annually (year ending March) by 31st July each year |
| | Seal Haul Out Sites Dublin Bay | Monthly | North Bull Island and adjacent areas. Dublin Bay within zones of influence. | Species. Maturity Stage. Behaviour. | Coordinate with NPWS surveys | Low water \pm 2 hours. | N/A | Marine Mammal Ecologist | Annually (year ending March) by 31st July each year. |
| WATER QUALITY | Water quality in lower Liffey in Dublin Port | High frequency (15min) real time at four stations | 4 locations Inner Liffey channel | Dissolved Oxygen (DO), Turbidity, Temperature, Salinity, pH | Regular servicing and calibration of sondes | N/A | DO & Turbidity thresholds to be agreed with EPA in advance of dredging | Environmental Facilities Manager | Monthly Synoptic and Annually (year ending March) by 31st July each year. |
| ATMOSPHERIC NOISE AND DUST | Dust Deposition | Continuous over project duration | 3 locations: <ul style="list-style-type: none"> Poolbeg Marina; East Wall Towards Sandymount | Dust deposition using Bergerhoff Dust Deposition Gauges | Deposition jars to be replaced monthly | N/A | 350mg/m ² /d | Environmental Facilities Manager | Monthly Synoptic and Annually (year ending March) by 31st July each year. |
| | Noise Levels | Continuous for duration of Project | 4 locations: <ul style="list-style-type: none"> Poolbeg Marina; Clontarf; East Wall Towards Sandymount | Equivalent Continuous Sound Pressure Level (L _{aeq}) | Yearly calibration of noise meters | N/A | 65 dBA 65 dBA 70 dBA | Environmental Facilities Manager | Weekly to Contractor/DPC Annual AER |
| UNDERWATER NOISE | Underwater Noise Levels | Validation surveys | 4 locations Inner Liffey Channel | dB SEL to monitor TTS -Temporary hearing impact | Boat Support | N/A | 140 dB SEL Porpoise, 170 dB SEL Seals 150 dB SEL | Underwater Noise Specialist | Survey required within 2 months after commencement of Piling |

| Monitoring Programme | Monitoring Element | Frequency of Monitoring | Location | Parameters Measured | Surveyors / Support | Sampling Constraints | Action Threshold | Monitoring and Reporting | Report / Frequency |
|--|---|--|----------------------------------|--|--------------------------------------|----------------------|--|------------------------------|---|
| | | | | | | | Fish | | |
| GROUND GAS & GROUNDWATER LEVEL MONITORING | <p>Gas Monitoring using in-situ telemetry enabled ground gas monitoring device.</p> <p>Groundwater level monitoring using in-situ continuous groundwater level loggers.</p> | Continuous monitoring of ground gas and groundwater level to commence prior to ground improvement works, during works, and for a further 2 weeks following the completion of ground improvement works. | Area O (at former landfill site) | CH ₄ CO ₂ , O ₂ , CO, H ₂ S, LEL, Flow, atmospheric pressure | N/A | N/A | Notable change in ground gas levels as a result of ground improvement works. | Contaminated Land Specialist | Weekly data report and trend interpretation. Final Report following the completion of monitoring programme. |
| ARCHAEOLOGY | <p>Interaction with GSW and other protected structures. Restoration works. Monitoring for potential new finds</p> | Continuous for duration of Project | Capital Dredging, Landside works | Ground Disturbance Demolition of Structures Capital Dredging | Boat support during capital dredging | N/A | Notification to National Monument Service of significant finds | Archaeology Specialists | Monthly Reporting |

21.3 Operational Phase Mitigation Measures

The existing land uses within the footprint of the 3FM Project comprise the manoeuvring and berthing of vessels, the handling of Ro-Ro, Lo-Lo and Bulk cargo, HGV traffic distributing cargo to and from Dublin Port and other activities on relatively short-term leases including site compounds and concrete mixing plant.

The 3FM Project is designed to provide port infrastructure which will improve the efficiency of port operations and increase the throughput of Ro-Ro and Lo-Lo cargo.

The future land uses within the footprint of the 3FM Project will therefore not significantly change and consequently operational mitigation measures are largely based on the following:

- Integration of the new port infrastructure with existing operational plans and procedures;
- Integration with port-wide monitoring programmes to establish environmental trends in order to support future initiatives to enhance the environment or take corrective action, if required;
- Integration of the new port infrastructure with future port-wide initiatives such as the development of an over-arching Climate Change Adaptation Plan and Heritage Plan for the Great South Wall;
- Integration with the strategic objectives of the Dublin Port Masterplan 2040, reviewed 2018.

Table 17 summarises the operational phase mitigation measures recommended within the EIAR. All mitigation measures proposed within the NIS have been captured by the EIAR.

Table 17 Operational Phase Mitigation measures recommended within the EIAR

| Potential Impact | Summary of Proposed Operational Mitigation |
|---|--|
| Chapter 6 RISKS OF MAJOR ACCIDENTS & DISASTERS | |
| Potential for loss of life or injury to Natural Events. | The 3FM Project does not introduce any new risks that could cause or exacerbate a major accident, nor is it considered that the 3FM Project will significantly alter the risks presented to existing COMAH establishments during normal Port operations. The 3FM Project will operate under Dublin Port's existing Emergency Response Plan. |
| Potential for damage to the environment. | |
| Potential for damage to the facilities, plant and equipment of DPC, its commercial partners, tenant companies and neighbours. | |
| Chapter 7 BIODIVERSITY, FLORA & FAUNA | |
| Japanese Knotweed, a regulated invasive plant species listed in the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011, as amended, has been recorded at locations on the Poolbeg peninsula in, or adjacent to Dublin Port lands. Two other invasive species have been detected, Sea Buckthorn and 3-cornered leek. | DPC has committed to formulating an Invasive Alien Species (IAS) Management Plan for the entire port area. The Plan will outline containment and eradication measures to be implemented if any IAS are identified. The plan will include prevention measures which will range from raising awareness of IAS and the potential for their dispersal, to ensuring best practice in relation to the movement of materials into, within or out of the operations area. |

| Potential Impact | Summary of Proposed Operational Mitigation |
|--|---|
| <p>Potential impact of future maintenance dredging works on marine ecology including fisheries and marine mammals.</p> | <p>DPC need to carry out regular maintenance dredging of the navigation channel, basins and berthing pockets in order to maintain their advertised charted depths and hence provide safe navigation for vessels to and from the Port. When the 3FM Project capital dredging campaign is completed, the 3FM Project dredged areas will be incorporated into Dublin Port's maintenance dredging plan which will be subject to a Maritime Area Consent and Dumping at Sea Permit.</p> <p>Maintenance dredging will be subject to the implementation of a comprehensive suite of mitigation measures to minimise impact on marine ecology including fisheries and marine mammals. These measures include:</p> <ul style="list-style-type: none"> • Loading will be carried out by a backhoe dredger or trailing suction hopper dredger (TSHD). The TSHD's pumps will be switched off while the drag head is being lifted and returned to the bottom as the dredger turns between successive lines of dredging to minimise the risk of fish entrainment. • Full time monitoring of Marine Mammals within 500m of loading and dumping operations will be undertaken in accordance with the measures contained in the Guidance to Manage the Risk to Marine Mammals from Man-Made Sound Sources in Irish Waters (NPWS 2014). |
| <p>Potential opportunities for Fisheries Enhancement</p> | <p>DPC are committed to working with Inland Fisheries Ireland and 3rd level academic institutions to explore fisheries enhancement measures within the framework of the 3FM Project area, concentrating in particular in optimising biodiversity and fisheries biomass associated with new harbour structures.</p> |
| <p>Long-term Monitoring of marine mammals and shipping noise</p> | <p>DPC will continue to operate a Passive Acoustic Monitoring (PAM) system at the North Bank Light to monitor underwater noise trends as a result of shipping and to monitor the usage of the inner Liffey channel by porpoise and dolphin.</p> |
| <p>Chapter 8 LAND, SOILS, GEOLOGY, HYDROGEOLOGY</p> | |
| | <p>No specific operational phase mitigation measures with regard to land, soils, geology and hydrogeology are required.</p> |
| <p>Chapter 9 WATER QUALITY and FLOOD RISK</p> | |
| <p>Potential impact of future maintenance dredging works on Water Quality</p> | <p>DPC will continue to implement comprehensive mitigation measures during all maintenance dredging campaigns to mitigate against potential impacts to Water Quality. These measures include:</p> <ul style="list-style-type: none"> • Loading will be carried out by a backhoe dredger or trailing suction hopper dredger (TSHD). • No over-spilling from the vessel will be permitted while the dredging activity is being carried out within the inner Liffey Channel. • The dredger's hopper will be filled to a maximum of 4,100m³ (including entrained water), while dredging silts within the inner Liffey Channel, to control suspended solids released at the dumping site. |

| Potential Impact | Summary of Proposed Operational Mitigation |
|--|---|
| | <ul style="list-style-type: none"> • A documented Accident Prevention Procedure will be put in place prior to commencement • A documented Emergency Response Procedure will be put in place prior to commencement • A full record of loading and dumping tracks and record of the material being dumped will be maintained for each trip. • Dumping will be carried out through the vessel's hull. • The dredger will work on one half of the channel at a time within the inner Liffey channel to prevent the formation of a silt curtain across the River Liffey. • When any dredging is scheduled to take place within a 500m radius of power station intakes, the relevant stakeholders will be notified so that precautionary measures can be taken if deemed necessary. |
| <p>Potential impacts of the general operation of the 3FM Project on Water Quality.</p> | <p>The operational phase of the 3FM Project will be subject to Dublin Port's existing Environmental Management System (EMS) which is accredited to the Port Environmental Review System (PERS) which has gained Dublin Port designation as an 'Ecoport' at European level.</p> <p>The EMS will be updated to include all new port infrastructure constructed as part of the 3FM Project, including surface water drainage.</p> <p>The EMS is supported by a comprehensive suite of Standard Operating Procedures (SOP) providing mitigation of all environmental aspects identified and mechanisms to ensure effective implementation.</p> <p>SOPs have been prepared for oil and chemical spill responses, mineral oil handling, waste handling, monitoring and maintenance of surface water interceptors and handling of drain cleaning waste. Controls are in place for transport, handling and storage of hazardous materials, ship cargo, dry bulk material, surface water runoff, fuelling and bunkering of vessels and ship discharges. Site audits promote best practice and ensure compliance with the EMS requirements.</p> |
| <p>Chapter 10 AIR QUALITY</p> | |
| <p>Potential impact of increase road traffic on Air Quality & Climate.</p> | <p>Mitigation of road traffic emissions are mainly achieved through EU legislation driven improvements in fuel and engine technology resulting in a gradually reducing emissions per vehicle profile. The collection of EU Directives, known as the Auto Oil Programme, have outlined improved emission criteria which manufacturers are required to achieve from vehicles produced in the past and in future years.</p> <p>DPC has developed an initiative with the haulier companies operating in the port to provide the necessary Compressed Natural Gas (CNG) fuelling infrastructure across the port to facilitate the future trend for HGVs to change fuel from diesel to CNG.</p> |
| <p>Potential impact on future shipping emissions on Air Quality & Climate.</p> | <p>A number of EU Directives and the requirements of the Marpol Convention regulate the fuels and emissions employed in the shipping industry. These</p> |

| Potential Impact | Summary of Proposed Operational Mitigation |
|--|--|
| | <p>requirements will remain in practice throughout the operation of the 3FM Project and may be replaced with more stringent emission limits.</p> <p>In addition to the international mitigation implemented by Marpol, DPC has proposed port specific mitigation with a view to reducing emissions while vessels are berthed at the port. DPC propose to provide shore to ship power (SSP) at the proposed Ro-Ro Terminal (Area K) and the proposed Lo-Lo Terminal (Area N). This will facilitate powering of the berthed vessels by the national grid which will allow the vessel to turn off their main and auxiliary engines for the duration of berthing. This reduces direct emissions from the ships while in port and at the closest point to the sensitive human receptors in the area.</p> |
| Chapter 11 CLIMATE | |
| <p>Potential impacts of Climate Change.</p> | <p>It is proposed to develop a Project Carbon Management Plan (PCMP) for the project. This PCMP will be aligned with the principles of PAS2080:2023 – a global standard for managing whole-life (embodied and operational) carbon in the built environment and infrastructure. The development of the carbon life cycle assessment presented the EIAR is the first phase of the PCMP and this plan will be formally developed at detailed design stage by the design team to facilitate handover to the contractor for construction stage as a contractual obligation for a cap on the levels of embodied and operational carbon. Post-construction the PCMP will be handed back to DPC to facilitate the operational management of carbon for the project.</p> |
| Chapter 12 NOISE & VIBRATION | |
| <p>There is potential for operational phase noise impacts associated with the 3FM Project at the nearest noise sensitive properties in the absence of mitigation measures.</p> | <p>Two 4m noise barriers are proposed to separate the proposed SPAR and Area K from the nearest noise sensitive properties at Pigeon House Road and the Coastguard Cottages. In addition to this, a low noise road surface is proposed for the SPAR.</p> <p>Dublin Port will acquire electrified plant/equipment for the operations of the 3FM Project where these are available. There has been significant improvement on a global level in the area of port plant electrification, including the application of automation and sensors for reducing noise associated with stacking activity. On the basis of the significant improvement in reducing noise from such activity that has taken place in recent years, it would be anticipated that there will be further improvements in reducing noise from port-related plant and vehicles in the years between now and when the proposed 3FM Project will be operational in 2040. Such improvements in port-related plant/vehicles are over and above anything assumed or incorporated into the noise impact assessment for the 3FM Project.</p> |
| <p>Potential future noise impact from vessel movements during the night-time period</p> | <p>In order to ensure that there is no increase in noise impact from changes to vessel movements during the night-time period, DPC will implement a Noise & Vibration Management Plan in relation to the ongoing management of</p> |

| Potential Impact | Summary of Proposed Operational Mitigation |
|---|---|
| | <p>noise issues associated with changes to Port activities. This plan will include the following elements as a minimum:</p> <ul style="list-style-type: none"> the provision for noise management to be included as a key consideration for all significant changes made to port operations by senior management within Dublin Port; the prior assessment of potential noise impacts associated with any alteration to port activities that may be likely to result in a significant noise impact at the nearest noise sensitive properties; a range of procedures to mitigate noise during the night-time period, including measures to control tonal/impulsive noise sources (e.g. foghorn, tannoy announcements etc.) before 07:00 hours. |
| <p>Potential future underwater noise impact from vessels entering and leaving the port</p> | <p>Dublin Bay is subject to commercial shipping traffic from Dublin Port, Dún Laoghaire, Howth and leisure traffic from marinas around the bay. DPC will monitor Dublin Port shipping traffic related underwater noise using the PAM system located at North Bank Light. Monitoring will provide information on background (absence of shipping) and ambient (shipping noise included) noise levels and link noise events to specific vessels. This approach ensures that particularly noisy vessels can be identified and appropriate measures outlined in the IMO (2014) guidelines taken to control noise emissions from those vessels.</p> |
| <p>Chapter 13 MATERIAL ASSETS - COASTAL PROCESSES</p> | |
| <p>Potential impact of future maintenance dredging works on Coastal Processes</p> | <p>Maintenance dredging is an ongoing requirement in Dublin Port. Maintenance dredging is subject to a Maritime Area Consent (MAC) and Dumping at Sea Permit. These licences prescribe strict environmental protection measures to minimise the potential impacts of maintenance dredging on the environment.</p> <p>No other specific operational phase mitigation measures with regard to coastal processes are required.</p> |
| <p>Chapter 14 MATERIAL ASSETS - TRAFFIC & TRANSPORTATION</p> | |
| <p>Mobility Management Plan & Smarter Travel</p> | <p>An outline Mobility Management Plan (oMMP) has been appended to Chapter 14 of the EIAR. The oMMP sets out the type of measures which will progressed by DPC, in liaison with the operator(s), to ensure that the sustainable transport facilities are made available and are utilised by the users of the 3FM Project.</p> |
| <p>Chapter 15 - MATERIAL ASSETS - SERVICES</p> | |
| <p>Securing a robust Electricity Supply in preparation of shore to ship power coming on-line.</p> | <p>DPC will secure a robust electricity supply to meet the electrical load requirements in preparation of shore to ship power coming on-line. DPC will work closely with ESB to quantify the electrical load capacity of the overall port lands (North and South of the Liffey) with a view to compiling a masterplan to deliver the electrical load requirements in the medium and long term. The 3FM Project electrical load requirements will form a key element</p> |

| Potential Impact | Summary of Proposed Operational Mitigation |
|---|--|
| | of this masterplan. The masterplan will take account of the energy efficiencies being achieved by DPC. |
| Chapter 16 CULTURAL HERITAGE (including Industrial & Archaeological) | |
| Potential Impact of future developments on the Great South Wall. | <p>There will be no significant residual impact on the cultural heritage resource, as a result of the Operational Phase of the 3FM Project.</p> <p>Archaeological surveying by competent and experienced maritime archaeologists licensed by DHLGH of Pigeon House harbour walls in the vicinity of the turning circle is recommended at the following intervals:</p> <ol style="list-style-type: none"> 1. Within 12 months of operation 2. After six years of operation <p>in order to confirm that the engineering design modelling predicting no significant impact is consistent with the actual condition of the walls.</p> |
| Chapter 17 LANDSCAPE & VISUAL | |
| Potential impact of future developments on the Landscape | <p>The design evolution of the 3FM Project has been undertaken to enable incorporation of the following built-in design measures:</p> <ul style="list-style-type: none"> • Integration of constructed elements with existing elements such as existing roads and buildings; • Appropriate colour of fencing and structures to reflect existing the port character; and directional lighting. |
| Chapter 18 POPULATION & HUMAN HEALTH | |
| Dublin Port will contribute a significant Community Gain that will have a positive impact on Population and Human Health. | <p>DPC's Community Gain proposal comprises the following two elements:</p> <p>DPC will provide a maximum contribution of €1,000,000 towards the provision and operation of a City Farm on lands owned by Dublin City Council adjacent to the port – either in Fairview Park or on Alfie Byrne Road. These lands will be of sufficient scale to support a viable City Farm Project. The provision of this new community asset has the potential to positively influence population and health by providing social benefits and contributing to community cohesion.</p> |
| Chapter 19 WASTE | |
| Dublin Port Waste Reception and Handling Plan | <p>The current Dublin Port Waste Reception and Handling Plan 2023 underpins all waste related operations at Dublin Port. <i>“The purpose of this plan is to ensure that the needs of potential users and waste regulators are taken into account when planning and operating port waste reception facilities; to ensure that all mariners are aware of the requirement to transfer ashore their ship waste at every port they visit the location, cost and procedures for using the facilities and in Dublin Port. Also, it is a means of informing the ships masters and their agents/terminal operators regarding the legislative requirements and the consultation arrangements by the port for the future development of adequate facilities within the port.”</i></p> |

| Potential Impact | Summary of Proposed Operational Mitigation |
|---------------------------------|--|
| | <p>Ship waste is classified as the waste delivered by ships calling at ports¹⁶. The purpose of the Plan is to ensure that:</p> <ul style="list-style-type: none"> • The needs of potential users and waste regulators are considered when planning and operating port waste reception facilities; • To ensure that all mariners are aware of the requirement to transfer ashore their ship waste at every port they visit; • Outline the location of the costs and procedures for using the waste reception facilities in Dublin Port; • There is a means of informing the ships masters and their agents/terminal operators regarding the legislative requirements; • Outline the port’s consultation arrangements for the future development of adequate facilities within the port. <p>Port waste concerns the waste generated by port-based activities. DPC is responsible for the management of a wide range of wastes arising at Dublin Port. Waste from DPC operational activities is collected and managed by a licensed waste contractor. Paper, cardboard, plastic bottles, aluminium cans and compostable are separated from mixed municipal waste (MMW) and recycled. Timber, metal and waste electrical and electronic equipment (WEEE) are also separated for recycling.</p> |
| On-Site Waste Management | <p>The 3FM Project design incorporates adequate dedicated space to cater for the segregation and storage of all various waste streams within the terminal building. This bin storage area will allow for waste segregation, handling activities such as bailing of cardboard and plastic and sufficient waste storage. All staff will be provided with training regarding the waste management procedures. Waste from operational activities will collected and managed by a licensed waste contractor.</p> |
| Environmental Management System | <p>DPC will continue to implement its Environmental Policy and update its Environmental Management System for the development consistent with best practice. DPC is committed to achieving high standards of environmental management. This is reflected in the company’s commitment to its ESPO’s EcoPorts Ports Environmental Review System (PERS).</p> <p>It is DPC Environmental Policy to set clear environmental objectives and targets and to regularly monitor progress against them. The following has been set in relation to waste management¹⁶.</p> <p>Objective : Increase DPC’s Waste Management Performance</p> <p>Target : Maintain DPC’s waste recycling rate with a constant aim of 100% recycling</p> <p>Ensure all waste arisings from capital projects monitored and annual statistics are submitted.</p> |

¹⁶ Dublin Port Company Environmental Report 2023

22 CONCLUDING REMARKS

Overall, the authors of the EIAR believe that the 3FM Project complies with the principles of proper planning and sustainable development, and that the EIAR has objectively demonstrated that the proposed project does not adversely affect the environment in all its facets, including the integrity of Natura 2000 sites.