



Volume 1

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

NON-TECHNICAL SUMMARY



MP2 PROJECT NON-TECHNICAL SUMMARY

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1 INTRODUCTION

This document is the Non Technical Summary (NTS) of the Environmental Impact Assessment Report (EIAR) prepared to assess the likely significant effects of the MP2 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.

The EIAR was prepared by RPS on behalf of Dublin Port Company (DPC) for the MP2 Project, the second Strategic Infrastructure Development (SID) project at Dublin Port from the Dublin Port Masterplan 2040, reviewed 2018, for which development consent is sought.

This EIAR will be used to support the relevant assessments to be carried out by the respective competent authorities on all relevant applications for development consent.

The primary objective of the EIAR is to identify the baseline environmental context of the proposed development, predict potential beneficial and/or adverse effects of the development and propose appropriate mitigation measures where necessary.

The EIAR has been prepared in accordance with the requirements of EU Directives and Irish law regarding Environmental Impact Assessment (including the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018) and 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 Applicant

DPC is a State-owned commercial company responsible for operating and developing Dublin Port.

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.

Dublin Port has been identified as a Core Port of international significance in the Trans European Network (TEN-T) Guidelines and it forms part of the European Union's Core Transportation Network, and it is also designated a Tier 1 Port of national importance in the National Ports Policy 2013.

Dublin Port's large share of national port volumes, particularly in the Roll-On Roll-Off (Ro-Ro) and Load-On Load Off (Lo-Lo) modes, arises due to a combination of two factors; location and depth of water. Dublin Port is a key part of the national port system and DPC seeks to ensure that it plays its role in providing national port capacity. For all of Ireland's major national ports, it is essential that capacity constraints do not emerge which could lead to supply chain inefficiencies. The Dublin Port Masterplan 2040, reviewed 2018, seeks to ensure that no capacity constraints emerge in Dublin Port between now and 2040.

Project Summary

DPC is bringing the MP2 Project at Dublin Port forward for development consent in accordance with the Dublin Port Masterplan, reviewed 2018. The Masterplan identifies the land uses and development projects on port

lands which will allow the port to increase its capacity to 77.2 million gross tonnes by 2040. The Masterplan identifies that this is the ultimate capacity of Dublin Port.

The Dublin Port Masterplan 2040 envisages that the development of Dublin Port to this ultimate capacity will be achieved by not less than three large Strategic Infrastructure Development (SID) projects:

- the Alexandra Basin Redevelopment (ABR) Project (29N.PA0034), which is under construction;
- the MP2 Project, now proposed; and
- a final project on the Poolbeg Peninsula and possibly also including the development of the Southern Port Access Route (SPAR) to provide connectivity between the Dublin Port Tunnel and the south port lands as envisaged in the National Transport Authorities Transport Strategy for the Greater Dublin Area 2016 to 2035.

The MP2 Project complements the ABR Project in providing capacity for growth in the Ro-Ro Lo-Lo modes on the north side of the port and at its eastern end in addition to providing suitable infrastructure for increasing numbers of ferry passengers.

The works proposed in the MP2 Project comprise a number of elements, outlined below (see Figure 1-1):

- Construction of a new Ro-Ro jetty (Berth 53) for ferries up to 240m in length on an alignment north of the Port's fairway and south and parallel to the boundary of the South Dublin Bay & River Tolka SPA (004024).
- A reorientation of the already consented Berth 52 (ABP Ref. 29N.PA0034). Berth 52 is also designed to accommodate ferries up to 240m in length. The works will also comprise an amendment to the consented open dolphin structure (ABP Ref. 29N.PA0034) to create a closed berthing face at the eastern end of Berth 49.

[Elsewhere within the ABR Project, the extension of the existing Berth 49 is already consented to also make this berth capable of accommodating ferries up to 240m in length. The combination of the ABR Project with the MP2 Project will therefore deliver three river berths all capable of accommodating ferries up to 240m in length].

- A lengthening of an existing river berth (50A) to provide the Container Freight Terminal with additional capacity to handle larger container ships. These works will include the infilling of the basin east of the now virtually redundant Oil Berth 4 on the Eastern Oil Jetty. These works will also include dredging to a standard depth of -11.0m CD which is a proposed amendment to the channel dredging as permitted under the ABR Project (ABP Ref. 29N.PA0034).
- As part of the infilling of Oil Berth 4, it is proposed to redevelop Oil Berth 3 as a future deep-water container berth (standard depth of -13.0m CD) for the Container Freight Terminal. This will facilitate the change of use of the berth from petroleum importation to container handling when the throughput of petroleum products through Dublin Port declines as a result of national policies to decarbonise the economy.
- The dredging of a berthing pocket to a standard depth of -13.0m CD at Oil Berth 3 will require stabilisation of the existing quay wall at Jetty Road. It is not proposed to use this quay wall for the berthing of vessels.

- Dredging at the proposed Berth 53 and channel widening to a standard depth of -10.0m CD which is a proposed amendment to the channel dredging as permitted under the ABR Project (ABP Ref. 29N.PA0034).
- Consolidation of passenger terminal buildings, demolition of redundant structures and buildings, and removal of connecting roads to increase the area of land for the transit storage of Ro-Ro freight units as a Unified Ferry Terminal (UFT). Works include reorganisation of access roads; two proposed check in areas comprising a total of 14 check lanes; proposed set down and parking area for the existing Terminal 1 building; proposed pedestrian underpass to access the existing Terminal 1 building; three proposed toilet blocks and a proposed ESB Substation. These works will comprise amendments to consented developments with planning reference numbers 3084/16 & 3638/18, and the ABR Project (ABP Ref. 29N.PA0034).
- A heritage zone adjacent to Berth 53 and the Unified Ferry Terminal set down area. This will comprise an alteration to consented development planning reference 3084/16.

Technical Difficulties or Lack of Data

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 ABR Project. The monitoring programme comprises:

- continuous noise and dust monitoring at two locations;
- periodic vibration monitoring;
- continuous water quality monitoring within the inner Liffey channel at four locations (turbidity, dissolved oxygen, temperature, salinity);
- continuous water quality monitoring within Dublin Bay at four locations (turbidity at three depths). This is complemented by continuous wave climate and tidal current measurements.
- Passive Acoustic Monitoring (PAM) for Harbour Porpoise detection at two locations within Dublin Bay;
- Static Acoustic Monitoring (SAM) for Harbour Porpoise detection at four locations within Dublin Bay;
- records of marine mammal sightings by MMOs during dredging and piling operations;
- benthic surveys of the licenced dumping at sea site at the entrance to Dublin Bay;
- monthly seal surveys at Bull Island;
- lamprey surveys within the Liffey;
- wintering waterbird surveys within the South Dublin Bay & River Tolka Estuary SPA;
- tern colony surveys;
- black guillemot surveys; and
- underwater noise surveys during piling and dredging activities to validate models used to assess the impact on migratory fish and marine mammals.

The site-specific scientific data collected to date was used to support the preparation of the EIAR for the MP2 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.

The preparation of the 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.

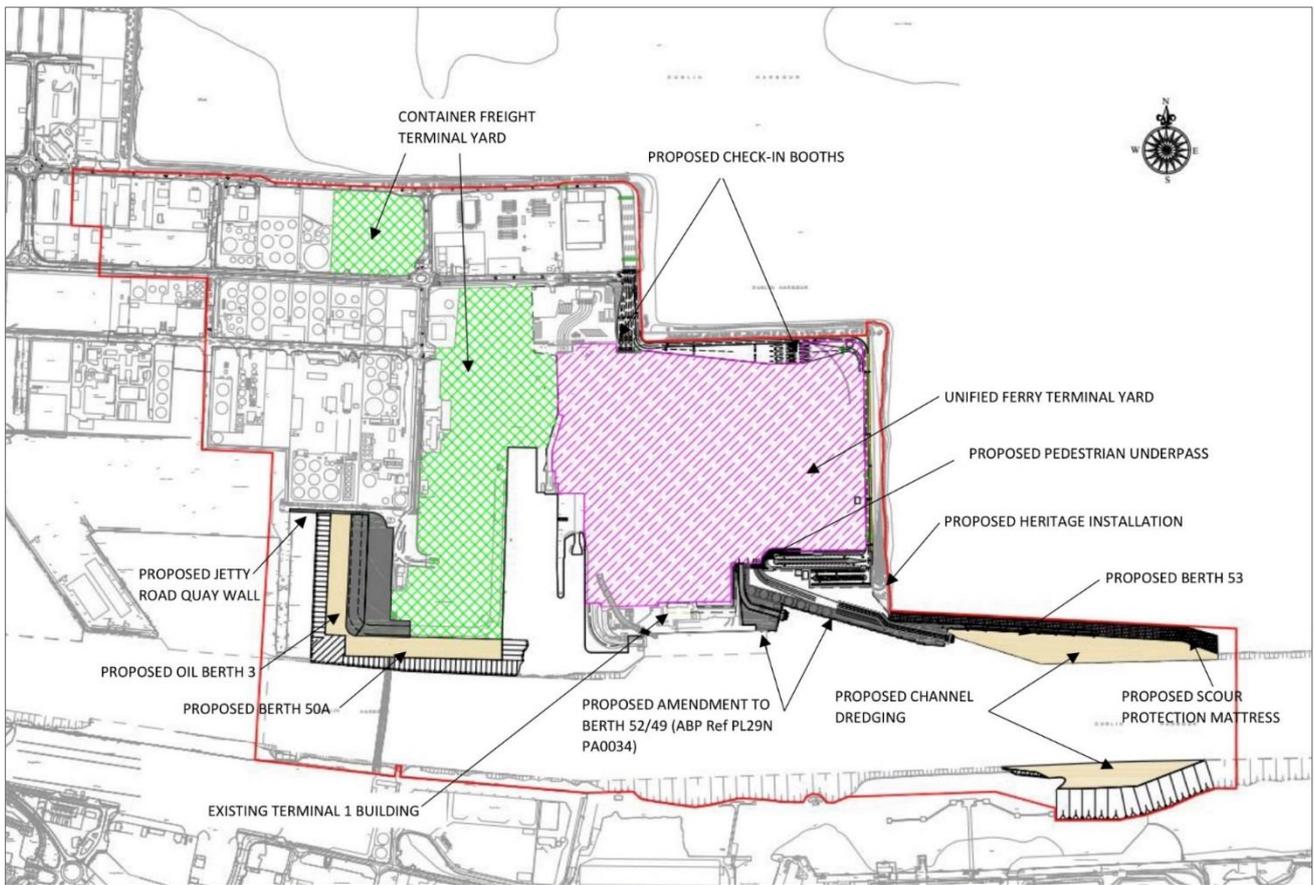


Figure 1-1 Main elements of the MP2 Project

2 NEED FOR THE MP2 PROJECT

Dublin Port Masterplan 2040

Dublin Port is the largest and most important port in the country. The combination of reasonable depth of water, proximity to the largest concentration of population on the island and excellent access to the national road and rail networks gives Dublin Port its importance in both the EU TEN-T network¹ and in the national port system.

In common with other important parts of national infrastructure, there has been significant underinvestment in Dublin Port for many decades. For example, for 31 years from 1979 to 2010 Dublin Port & Docks Board and latterly Dublin Port Company (DPC) sought permission to expand the port by infill into Dublin Bay opposite Clontarf rather than optimising existing quays and lands.

A new direction for the development of the Port was established by the Dublin Port **Masterplan 2012-2040** published in February 2012.

The Masterplan was reviewed and updated and the current version is **Masterplan 2040 Reviewed 2018**, published in June 2018.

Between the publication of the original Masterplan in 2012 and the updated version in 2018, the challenges facing the Port changed significantly due to a number of factors:

- Rapid economic recovery after the 2008 recession led to large growth in cargo volumes from 28.1m gross tonnes in 2011 to 38.0m gross tonnes in 2018, an increase of 35.2%.
- The country's population increased by 6.2% from 4.6m in 2011 to 4.9m in 2018.
- Following the referendum in the UK in June 2016, Brexit is anticipated in the near future and patterns of trade have already begun to change with increased growth on services between Dublin and ports in Continental Europe such as Rotterdam, Zeebrugge and Cherbourg.

The review of the Masterplan modified DPC's view of how Dublin Port needs to be developed:

- Firstly, the long-term growth rate assumption for capacity planning² was increased from 2.5% to 3.3%.
- Secondly, where the original Masterplan had posited the ultimate deepening of the Port to -12.0m CD, it is now accepted that the ultimate depth will be -10.0m CD.
- Thirdly, where the Masterplan published in 2012 had envisaged a possible return to the eastwards expansion of the Port, this has now been ruled out and all remaining developments will be based on the existing footprint of the Port.

¹ The Trans European Network for Transport (TEN-T) is a central concept within EU Transport Policy as set out in the EU white paper *Roadmap to a Single European transport area – Towards a competitive and resource efficient transport system, COM(2011) 144 final* and in many EU policy and funding initiatives subsequently. The TEN-T network recognises ports as key nodes within the wider road, rail and shipping networks that facilitate trade within and outside the EU. There are 319 ports identified in the network. 83 (including Dublin) are in the *core* network and 236 are in the *comprehensive* network.

² 30 year average annual growth rate of gross tonnes of cargo

- Finally, it is envisaged that major works in Dublin Port will need to be completed before 2040 at which stage the Port will have reached its maximum and ultimate capacity of 77.2m gross tonnes.

Figure 3 in the Masterplan (reproduced in Figure 3-1) identifies the land uses and development projects on port lands which will allow the Port to increase its capacity to 77.2m gross tonnes by 2040.

DPC envisages that the development of Dublin Port to its ultimate capacity will be achieved by three large developments, all SID projects:

- Alexandra Basin Redevelopment (ABR) Project (PA0034), which is under construction.
- MP2 Project, now proposed.
- A final project including development of land areas K, L, M, N and O (Figure 2-1) and possibly also including the development of the Southern Port Access Route (SPAR) to provide connectivity between the Dublin Port Tunnel and the south port lands as envisaged in NTA's Transport Strategy for the Greater Dublin Area 2016 to 2035.

The MP2 Project complements the ABR Project in providing capacity for growth in the Ro-Ro and Lo-Lo modes³ in **Area C** and **Area D** on the north side of the Port and at its eastern end (as shown in Figure 2-1).

MP2 Project Objectives

The MP2 Project is intended to provide a second tranche (after the ABR Project) of the additional capacity required to cater for a projected demand of 77.2m gross tonnes by 2040.

The project has been carefully devised by DPC to ensure that:

- It is consistent with the Dublin Port Masterplan 2040.
- The proposals selected for development make optimum use of the Port's finite resources of river berths and quayside lands.
- The proposed configuration reflects and responds to assessments of the potential environmental impact of different options to achieve the project's objectives.
- The chosen project option best meets all applicable environmental and ecological requirements.
- The project can be constructed in a way that minimises the impact on existing port operations.
- The proposed project is consistent with the principles of proper planning and sustainable development.
- The project makes provision for future population growth and a concomitant increase in demand for port infrastructure at the location closest to where the need for additional capacity arises.

³ Roll-On-Roll-Off (Ro-Ro) and Lift-On-Lift Off (Lo-Lo)

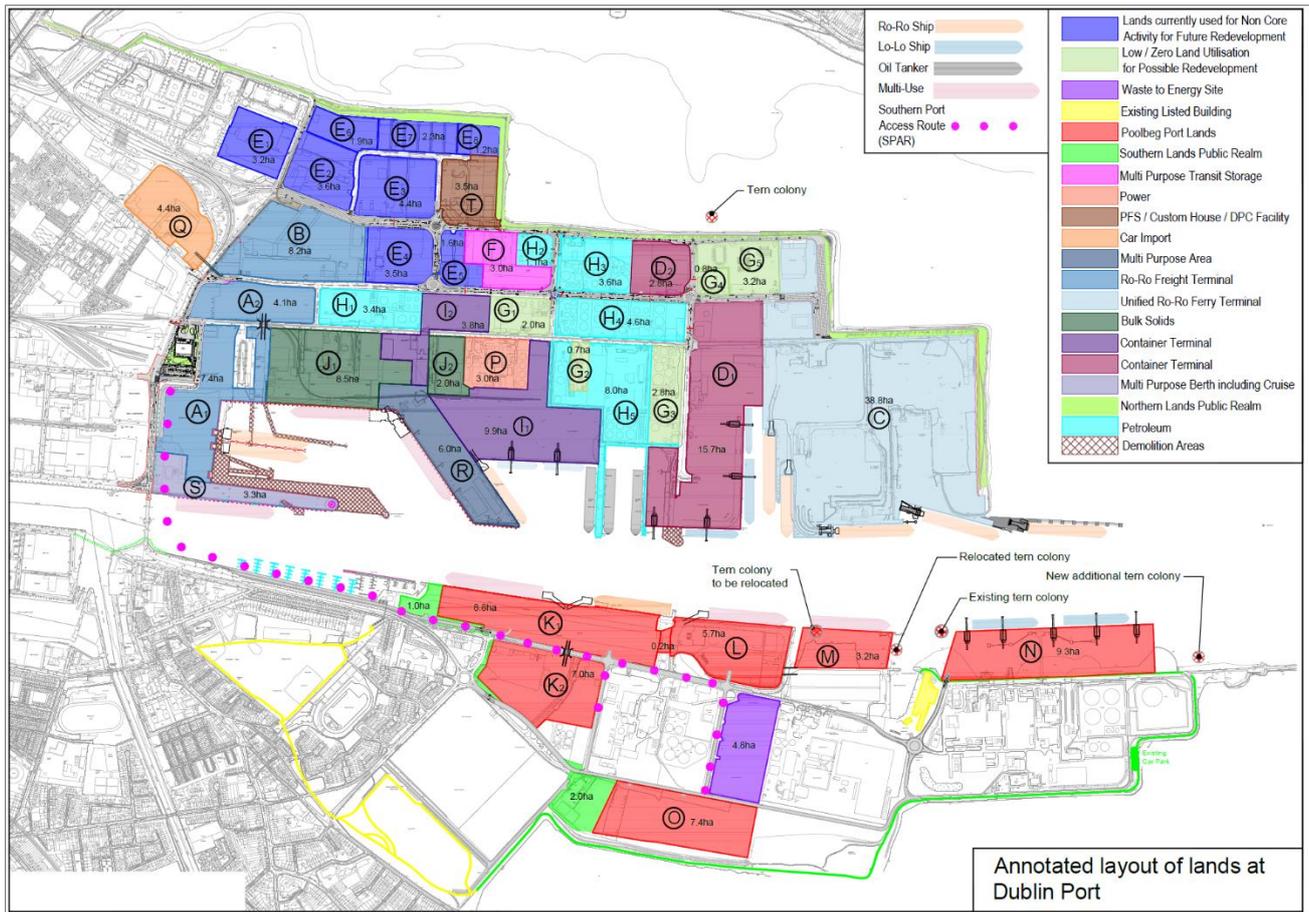


Figure 2-1 Dublin Port Masterplan 2040 (Figure 3)

Need for Berth 53

The additional long river berth to accommodate ferries up to 240m in length is essential to meet the objectives of Masterplan 2040:

- Berth 53 is required to deliver additional Ro-Ro capacity in Dublin Port in line with the projections set out in the Masterplan 2040.
- It is optimally located at the North Eastern corner of the Port to provide access to 38.8 hectares of shared passenger and freight terminal lands at **Area C** in Figure 2-1.
- The design of Berth 53 has been developed through an extensive process which had at its core the requirement to ensure that any development in this location respected the integrity of the nearby SPA.
- As a consequence, the location, design and functionality of Berth 53 have evolved since the project was first conceived and the proposal ensures that Berth 53 will not negatively affect the qualifying interests of the South Dublin Bay and River Tolka SPA.

Capacity constraints for Ro-Ro are foreseeable in Dublin Port and have led DPC to introduce policies to maximise the use of existing infrastructure in two ways:

- Firstly, in March 2019 DPC introduced a booking policy for cruise ships with the objective of limiting the number of bookings accepted for cruise ships from 2021 to ensure that future Ro-Ro freight capacity would not be compromised during and after major construction works⁴.
- Secondly, in April 2019 DPC introduced a policy to reduce the dwell time of containers and trailers in the port with the objective of maximising the utilisation of the capacity of existing Ro-Ro and Lo-Lo terminals⁵

The additional capacity of the proposed new Berth 53 would increase the Port's Ro-Ro capacity and would mitigate capacity constraints foreseeable for Ro-Ro freight. These policies, particularly the dwell time initiative, would ensure that the utilisation of this capacity would be maximised.

Impact of Brexit

The consenting phase of the MP2 Project coincides with Brexit and the construction and operational phases of the project will take place in the aftermath of Brexit.

In the context of the long life cycle for the development and operation of port infrastructure, DPC believes that the impacts of Brexit (which are unknown) will be short-term.

Just as the enormous shock to the Irish economy in the recession post 2008 has already been absorbed and port volumes in Dublin are on course this year for a fifth consecutive annual record, so also the effects of Brexit in years to come (as the MP2 Project is constructed and comes into operation) are not expected to be significant.

These potential effects are twofold:

- Firstly, a diminution in economic growth with a consequent effect on the growth of port volumes.
- Secondly, a changing of trade patterns with an increasing proportion of Ro-Ro and Lo-Lo trade on direct routes to Continental Europe at the expense of UK routes.

The first effect is a timing effect. A negative economic impact from Brexit will result in a lower growth in port volumes than there would otherwise have been in future years. This is consistent with the February 2018 Copenhagen Economics Brexit report which concluded that a hard Brexit would reduce Ireland's GDP in 2030 by 7.0% compared to what it otherwise would have been with no Brexit⁶.

Over the 12 years from 2019 to 2030, this 7.0% reduction would be equivalent to an annual reduction in GDP of 0.6%.

Against a background of 36.0% growth in Dublin Port volumes over the six years to 2018, such a slowdown in the years to 2030 would have no perceptible influence on the demand for the additional port capacity which the MP2 Project will deliver.

⁴ <https://www.dublinport.ie/briefing-document-minister-shane-ross-dublin-ports-new-cruise-ship-berthing-pricing-policy/>

⁵ <https://www.dublinport.ie/dublin-port-announces-new-dwell-time-initiative-increase-port-capacity-post-brexit/>

⁶ Ireland & the Impacts of Brexit Strategic Implications for Ireland arising from changing EU-UK Trading Relations: <https://dbei.gov.ie/en/Publications/Publication-files/Ireland-and-the-Impacts-of-Brexit.pdf>

The second effect of changing trade patterns is already evident with increased deployment of new large ships (e.g. Irish Ferries *W.B. Yeats* and CLdN's *Celine* and *Laureline*) on direct routes to Continental Europe.

The additional capacity of Berth 53, of the extended Berth 50A and the future availability of OB3 as a Lo-Lo berth all facilitate the provision of services to support these changed trade patterns.

Capacity enhancements as a result of the MP2 Project

The MP2 Project will deliver additional capacity in each of the Ro-Ro and Lo-Lo modes in circumstances where existing facilities are inadequate for future growth.

The **first focus** of the MP2 Project is to complete the development of a single unified Ro-Ro ferry terminal in **Area C** to cater both for existing operators (Irish Ferries, Stena Line and P&O) and for possible new operators. Current arrangements are not adequate to cater for anticipated growth and for the emerging changes in trade patterns. The existing operators provide services to ports in Britain and, increasingly, to ports in France. It is expected that there will be a further increase of services to France post Brexit.

The various traffics serviced by these ferries are:

- Driver accompanied freight vehicles.
- Unaccompanied freight vehicles.
- Passenger traffic mostly in vehicles (private cars and coaches) but also as foot passengers.

The unified Ro-Ro ferry terminal will also cater for seasonal fast craft operations (currently by Irish Ferries and the Isle of Man Steam Packet Company).

The MP2 Project will complete development in this part of the Port for Ro-Ro ferry operations and will deliver three long river berths (49, 52 and 53), all with double tier ramps, together with Berth 51 (double-tiered ramp) and Berth 51A (single tiered ramp).

The **second focus** of the MP2 Project is to bring the development of capacity for Lo-Lo operations in the DFT Container Terminal to completion in **Area D**.

In the wider context of Masterplan 2040, the MP2 Project is one of a number of projects which together will deliver the capacity required to cater for the Masterplan's projections to 2040.

In particular, the MP2 Project directly links with three other projects (all consented with one complete and two under construction) to deliver the Masterplan's vision for **Area C** and **Area D**. These three projects are summarised in Table 2-1.

In Masterplan 2040, DPC is planning to develop port capacity based on a projected average annual growth rate (AAGR) of 3.3% over the period from 2010 to 2040.

Table 2-1 Developments complementary to the MP2 Project

Project name	Planning reference	Status	Comment
ABR Project	PA0034	Underway	Includes the infill of the Berth 52/53 basin to provide additional land in Area C .
Roads project	3084/16	Underway	Provides expanded capacity for Dublin Port's internal roads network sufficient for projected volumes to 2040.
Redevelopment of Blugas Yard	2429/17	Complete	Provides an additional 2.8 hectares of terminal storage area for the DFT Container Terminal (Area D₂ in Figure 2-1).

Berth capacity, land capacity and projected utilisation levels

By 2040, there will be considerably increased levels of activity and throughput for both Ro-Ro and Lo-Lo. Table 2-2 shows indicatively how shipping activity and throughput will increase in **Area C** by 2040.

Table 2-2 Indicative increase in Ro-Ro throughput in Area C from 2018 to 2040

	2018	2040	% increase
Volume (units)	725,000	1,164,000	61%
Average units per day	1,986	3,189	61%
Average sailings per day	13	18	38%
Average units per sailing	153	177	16%

The growth in the volume of Ro-Ro freight to 2040 will come on routes to the UK (Holyhead, Liverpool and Heysham) and also on routes to Continental Europe (to ports such as Cherbourg, Zeebrugge and Rotterdam).

Berths dedicated to services to Holyhead can achieve high throughput levels (in the order of 350,000 units per annum) due to the reliability of shipping schedules on the short Dublin to Holyhead route and due to fast cargo handling operations because much of the Ro-Ro freight is accompanied.

Berths used for services to Liverpool, Heysham or ports in Continental Europe have lower potential throughput levels (up to 240,000 units per annum) due to the lower schedule reliability of longer sea routes and due also to the longer time needed for cargo handling operations as a result of a preponderance of unaccompanied Ro-Ro freight units.

In addition to providing capacity for freight and combined freight / passenger ferries, the five berths in **Area C** will also provide capacity for seasonal fast craft services (such as Irish Ferries' *Dublin Swift* service to Holyhead and the Isle of Man Steam Packet Company's service to Douglas).

Taking these uses together, Table 2-3 shows the indicative Ro-Ro freight berth capacity in 2040 for the five berths in **Area C**.

Table 2-3 Indicative berth throughout capacities in Area C

	Units p.a.	Indicative use
Berth 51	240,000	Freight services to Liverpool
Berth 51A	100,000	Fast craft passenger services and occasional use for freight services
Berth 49	350,000	Combined freight / passenger ferry services to Holyhead
Berth 52	350,000	Combined freight / passenger ferry services to Holyhead
Berth 53	240,000	Combined freight / passenger ferry services to Continental Europe
Totals	1,280,000	

MP2 Project and ferry passenger traffic

In addition to being the country’s largest port for cargo, Dublin is also the largest port for passengers, both on ferries and cruise ships. Table 2-4 shows that two million passengers passed through Dublin Port in 2018, the vast majority (90.3%) on ferry services to Holyhead, Liverpool and Cherbourg.

Table 2-4 Dublin Port passenger numbers, 2018

Ferries	1,827,674	90.3%
Cruise	196,899	9.7%
Total	2,024,573	100.0%

Ferry passenger numbers are on an upward trend and the planned introduction by major ferry operators (Irish Ferries and Stena Line) of large new ships in the next two years will support a continuing increase in ferry passenger numbers not only on routes to Holyhead but also increasingly to France.

Although the main focus of the developments proposed in the MP2 Project is on cargo, the overall development of **Area C** (both as a result of the works proposed within the MP2 Project and as a result of other Masterplan projects) will provide capacity of the continued growth of Dublin Port’s ferry passenger business. **Area C** will be the only area in Dublin Port where passenger ferry services will operate.

Future growth of Ro-Ro and Lo-Lo in Dublin Port

The need for the developments envisaged in the Masterplan and, in particular, the need now for the MP2 Project arises from the level of future growth which DPC is projecting.

The key driver of growth in Dublin Port is population increase. The National Planning Framework envisages the country’s population growing by 20% from 2016 to 2040. This is equivalent to a population increase of just over one million with 49% of this increase occurring in the Eastern & Midland region, the natural hinterland of Dublin Port. Table 2-5 shows the historic and projected levels of national population and of Dublin Port cargo throughput from 1950 to 2040. The population projection for 2040 is the planning assumption used in the *National Planning Framework*. The volume projection for 2040 is from Dublin Port’s Masterplan 2040.

Table 2-5 National population and Dublin Port volumes 1950 to 2040

	Population	Gross tonnes	AAGR
1950	3.0m	2.9m	
1980	3.4m	7.3m	3.2%
2010	4.6m	28.9m	4.7%
2040	5.6m	77.2m	3.3%

DPC looks at growth trends over long periods (30 years). The current planning projection of an average annual growth rate (AAGR) of 3.3% over the 30 years to 2040 is unremarkable by comparison with historic trends as Table 2-5 shows. Figure 2-2 shows the 30 year average annual growth rate from 1980 to 2018⁷. This indicates that the AAGR grew during the boom years to reach a high of 4.9% in 2008. It then fell to 4.5% in 2012 before beginning to grow again, reaching 5.5% in 2018.

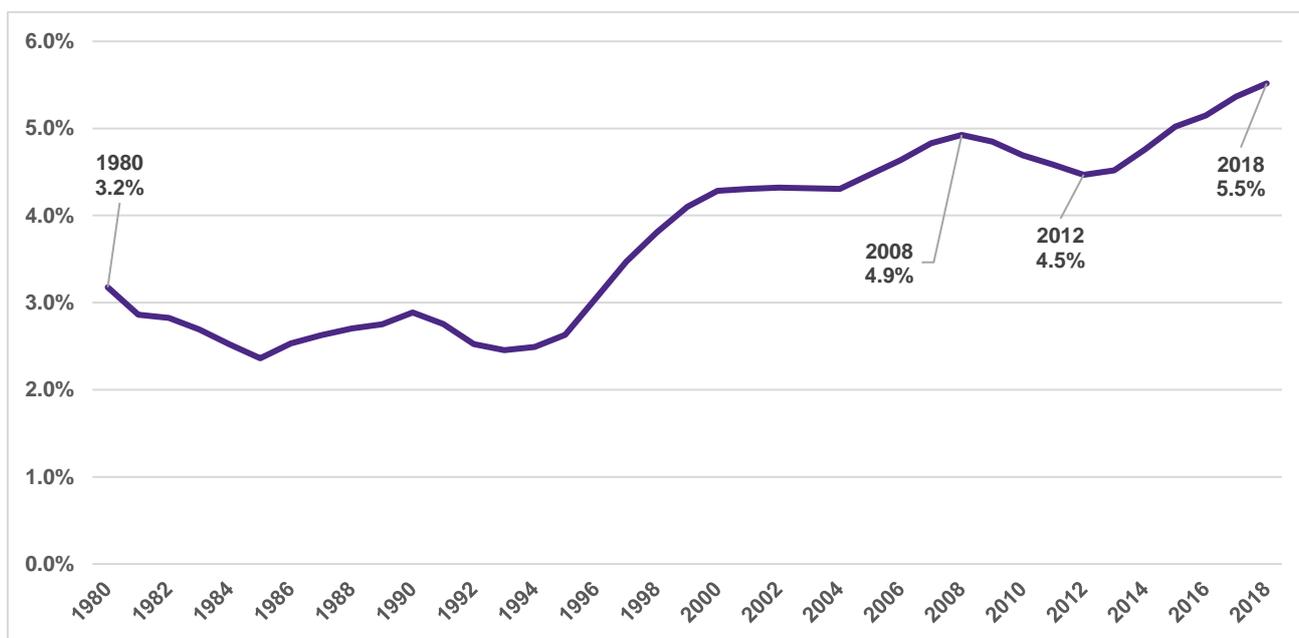


Figure 2-2 30 year Average Annual Growth Rates, 1980 to 2018

The trend shown in Figure 2-2 suggests that the Masterplan’s long-term planning growth rate assumption of 3.3% is more likely to be an underestimate than it is to be an over-estimate.

The MP2 Project is one of a series of Masterplan projects required to provide capacity for this growth and will of itself provide capacity for **30.2%** of the projected volume growth over the 30 years from 2018 to 2040.

⁷ By way of explanation, the growth rate shown in 1980 is the average annual growth rate over the 30 years from 1950 to 1980. Likewise, the rate for 2018 of 5.5% is the average annual growth rate over the 30 years from 1988 to 2018.

Growth in ship sizes

The future growth in Ro-Ro and Lo-Lo will be accompanied by increases in ship sizes and the MP2 Project will provide longer and deeper berths both for Ro-Ro ferries and for Lo-Lo container ships.

The MP2 Project is being proposed against a background where work is progressing within the ABR Project to deepen Dublin Port to -10.0m CD.

Moreover, Masterplan 2040 has confirmed that this will be the final deepening of Dublin Port.

These factors provide a clear context in which to relate the developments proposed in the MP2 Project to future ship sizes.

Looking firstly at the depth constraints in Dublin Port within which the MP2 Project is being proposed, Table 2-6 shows maximum ship draughts which Dublin Port will be capable of handling.

Table 2-6 Draught handling capabilities at -10.0m CD

	Mean high water	Channel depth	Max draught	Mean low water	Channel depth	Max draught
Spring tides	4.1m	14.1m	13.1m	0.7m	10.7m	9.7m
Neap tides	3.4m	13.4m	12.4m	1.5m	11.4m	10.4m

Note: max draughts assume an under keel clearance of 1.0m

In order to be able to maintain set schedules, Ro-Ro ferries need to be able to access Dublin Port at all stages of the tide. Table 2-6 above indicates that ferries with draughts up to about 9.7 metres will be able to access the port. This is sufficient for any conceivable size of Ro-Ro ferry that might be deployed by operators in the future.

Within the MP2 Project, therefore, the proposed draught at Berth 52 and at Berth 53 is -10.0m CD. This is also sufficient for any conceivable size of Ro-Ro ferry.

Table 2-7 shows the dimensions of selected Ro-Ro ferries including both ferries in service in Dublin Port or planned to be introduced together with ferries in service elsewhere or under construction.

Table 2-7 Sample Ro-Ro ferries

Ship	Operator	LOA	Draught	Comment
Ulysses	Irish Ferries	209m	6.4m	In service in Dublin Port since 2001
W.B. Yeats	Irish Ferries	195m	6.7m	In service in Dublin Port since January 2019
Hull 777	Irish Ferries	226m	6.7m	Commences in Dublin Port in 2020
Stena Hollandica	Stena Line	240m	6.5m	In service on Harwich to Hook route
Stena E-flexer	Stena Line	215m	6.4m	Commences in Dublin Port in 2019
Stena E-flexer	Stena Line	240m	6.4m	Construction of two ships commenced in July 2018
Celine	CLdN	234m	8.1m	In service in Dublin Port since October 2017
Laureline	CLdN	216m	8.2m	In service in Dublin Port since March 2019

It is envisaged that both Irish Ferries and Stena Line will operate from the river berths (specifically Berth 49 and Berth 52). Each operator has ferries in operation or on order with lengths in excess of what can currently be accommodated.

Moreover, there are already large ferries (*Celine* with a length of 234m and *Laureline* at 216m) in operation elsewhere in Dublin Port.

There is, therefore, a clear requirement for the MP2 Project to provide three river berths capable of accommodating ships up to 240m in length.

In the case of **Lo-Lo** container ships, the maximum size which can currently be handled in Dublin is limited by a combination of constraints (including berth depths and channel depth) to give a practical maximum draught in the region of 9.0m. The maximum size of container ship which has called to the Port in recent years is in the order of 1,400 TEU.

The deepening of the Port to -10.0m CD as part of the ABR Project removes the channel constraint. The lengthening of Berth 50A and the redevelopment of OB3 would lessen the existing berth constraints and allow large container ships to operate at the DFT Container Terminal.

The planned capacities of these berths is shown in Table 2-8. These berth capacities would allow considerably larger container ships berth at the DFT container terminal.

Table 2-8 Planned capacities of Berth 50A and OB3

Berth	Length	Depth
50A	306 metres	-11.0m CD
OB3	242 metres	-13.0m CD

Implementing the MP2 Project – the need for a 15 year planning permission

Given the Masterplan approach of redeveloping existing brownfield sites which are already in operation, constructing projects such as the MP2 Project is not straightforward. The areas in which construction work is proposed are in daily use and throughput volumes are growing.

DPC is currently constructing the ABR Project by way of discrete work packages designed to allow existing customers' growing businesses to continue with minimum disruption.

This same approach will be necessary with the MP2 Project and its construction will overlap with other projects which have already been consented including:

- ABR Project (PA0034)
- Dublin Port Roads Project (3084/16)
- Initial project at Dublin Inland Port (F18A/0139)

The experience of recent years suggests that there can be unforeseen circumstances which impact on the timing of planned project works in Dublin Port.

Looking to the future, an accelerated take-up of zero-emission cars could precipitate a faster decline in petroleum volumes than can be foreseen today. This, in conjunction with a high growth in Lo-Lo traffic (which is a possible consequence of Brexit), could necessitate bringing forward the works at OB3 and Berth 50A and perhaps pushing out works on Berth 53.

On the other hand, petroleum volumes might continue to grow as they have in recent years and persist at a high level for a long time. The throughput of petroleum products in Dublin Port in 2018 was 13% higher than prior to the recession (2007). More surprisingly, the volume in 2018 was 34% ahead of the low point reached in 2012 in the depths of the recession.

In such circumstances, it is very difficult to predict when individual works packages within the MP2 Project (such as the redevelopment of Oil Berth 3) should commence.

Because of such uncertainties, DPC requires a 15 year planning permission such that port capacity which is known to be required in the future can be delivered at the optimum time within that timeframe. In summary:

- The overriding imperative to ensure that Dublin Port continues to operate effectively during construction will require works to be staged in distinct phases.
- The works are to, a large extent, sequential and connected – one element cannot commence until an earlier related element is concluded.
- The works are all connected and need to be determined and assessed as a whole by An Bord Pleanála, rather than be subject to separate applications.
- Construction experience in Dublin Port in recent years shows that programme changes are both inevitable and difficult to predict. DPC's best estimate currently is that the MP2 Project works could be completed by 2032 but experience suggests that the actual construction period could be longer. DPC believes that it is preferable to address this reality at the outset and conduct the assessment of the MP2 Project on this basis.

The environmental appraisals presented in the 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.

- 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 and air quality.
- The footprint of the MP2 Project lies entirely within the Dublin Port Estate together with localised widening of the navigation channel. There are no terrestrial habitats, flora & fauna of conservation value within the 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 MP2 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.

- The location of the MP2 Project is remote from the nearest noise and air quality sensitive receptors due to the natural separation caused by the presence of the Tolka estuary and River Liffey. No prolonged nuisance to the local communities is therefore expected as a result of a 15-year construction period.
- The landscaping and planting associated with Greenway Project, which will be in place prior to the construction phase of the MP2 Project, will be maturing as the MP2 Project construction works advance over 15-years, thereby providing an enhanced visual buffer to the construction works over time.

Spatial Planning Policy

A review has been undertaken of EU, national, regional and local land use and transport planning and development policy guiding and regulating the development of Dublin Port.

Trans European Network – Transport (TEN-T)

The EU has defined a Trans European Network-Transport (TEN-T) which connects the major European urban areas and includes the major European transport corridors and multimodal hubs. The TEN-T network provides integrated international long-distance high speed routes. The network involves the provision of guidance and investment.

Ports are a key part of the TEN-T and Dublin Port is a core port on the TEN-T network. Dublin Port is a designated node on the North Sea-Mediterranean Core Network Corridor.

Dublin Port capital projects, including the ongoing Alexandra Basin Redevelopment (ABP Ref. PL 29N.PA0034), are grant funded under the TEN-T Programme and supported by finance from the European Investment Bank (EIB).

On 29th March 2017, the United Kingdom submitted the notification of its intention to withdraw from the EU pursuant to Article 50 of the Treaty on European Union, commonly referred to as Brexit. The Treaties will cease to apply to the United Kingdom from the date of entry into force of a withdrawal agreement or failing that, two years after that notification unless the period is extended. In view of the withdrawal of the United Kingdom from the EU, parts of the alignment of the North Sea – Mediterranean Core Network Corridor related to the United Kingdom will become obsolete. Recognising this Regulation (EU) 2019/495 amending Regulation (EU) No 1316/2013 provides for a realignment of the corridor once the United Kingdom leaves the EU. This regulation also makes provision for infrastructure for purposes of security and checks on external borders.

Marine Spatial Plan

In 2014 the adoption of Directive 2014/89/EU established an EU-wide framework for maritime spatial planning. The directive details the main goals and minimum requirements for Member States as follows:

- Balanced and sustainable territorial development of marine waters and coastal zones;
- Optimised development of maritime activities and business climate;
- Better adaptation to risks; and
- Resource-efficient and integrated coastal and maritime development.

Marine spatial planning may be defined as —

“... a process by which the relevant Member State’s authorities analyse and organise human activities in marine areas to achieve ecological, economic and social objectives” (Directive 2014/89/EU).

Ireland transposed the Directive through the European Union (Framework for Maritime Spatial Planning) Regulations 2016, signed into law on 29th June 2016. A National Marine Spatial Plan must be in place by 31st March 2021.

Project Ireland 2040 National Planning Framework

The Project Ireland 2040 National Planning Framework, published in July 2018, is the primary articulation of spatial, planning and land use policy within Ireland. The framework recognises the role ports play in supporting the Irish economy stating:

“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 94)

The framework recognises the 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)

National Policy Objective 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)

National Strategic Outcome 4 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 & 142)

The MP2 Project is consistent with national infrastructure policy and objectives.

National Development Plan

The implementation of the National Planning Framework will be fully supported by the Government’s investment strategy for public capital investment. The *National Development Plan 2018-2027* identifies the strategic priorities for public capital investment in order to underpin the implementation of the National Planning Framework.

The National Development Plan strongly supports the continued development and improvement in Ireland’s ports and strengthening access routes to ports.

The National *Development Plan 2018–2027* (NDP) identifies strategic priorities for public capital investment in order to underpin the implementation of the NPF.

National Strategic Outcome 6 *“High-Quality International Connectivity”* seeks to target continued investment in port and airport connections to the UK, the EU and the rest of the world. Given that Ireland is an island this is considered by the NDP to be integral to underpinning international competitiveness. It is also central to responding to the challenges as well as the opportunities arising from Brexit. Strategic Investment Priorities 2018–2027 allocate €4.8 billion to Airports and Ports.

It is envisaged by the NDP that this investment will strongly support the continued development and improvement in Ireland’s ports and State airports by the relevant responsible commercial State Owned Enterprises (SOEs), consistent with sectoral priorities already defined through National Ports Policy and National Aviation Policy.

The NDP continues that significant investment in Ireland’s airports and ports will play a major role in safeguarding and enhancing Ireland’s international connectivity which is fundamental to Ireland’s international competitiveness, trading performance in both goods and services and enhancing its attractiveness to foreign direct investment. The NDP clearly states that the importance of this objective cannot be understated in the context of the UK’s exit from the EU in 2019.

The MP2 Project consists of the next phase of this capital infrastructure programme at Dublin Port and is consistent with national policy.

National Ports Policy

The *National Ports Policy* is the statement of national policy underpinning the development and operation of Ireland’s ports. Ports are divided into Ports of National Significance (Tier1), Ports of National Significance (Tier 2) and Ports of Regional Significance.

Within the Irish 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 through Irish ports (of which Dublin Port handles 44%), and have clear potential to lead the development of future port capacity in the medium and long term, when and as required.

Referring specifically to the *Dublin Port Masterplan* the *National Ports 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 *National Ports 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 document 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 *National Ports 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 *National Ports Policy* are recognised in the planning hierarchy.

National Marine Spatial Plan

Marine Spatial Planning (MSP) in Ireland is underpinned at the highest level by the European Marine Spatial Planning Directive (Directive 2014/89/EU) (MSPD). This Directive sets out the date by which member states must have in place plans for their seas, 31st March 2021, as well as articulating a range of activities that must be included within the MSP process and plan. The MSPD is reflected in domestic law through the Planning and Development (Amendment) Act 2018. The Act describes MSP in Ireland as being made up of one marine spatial plan for the entire of the maritime area and/or different marine spatial plans for different parts of the maritime area with the singular plan or suit of plans.

Ireland's first marine spatial plan, National Marine Planning Framework (NMPF), will serve as a parallel to the NPF, will set out the Government's long-term planning objectives and priorities for the management of our seas over a 20-year time frame. It will create an overarching framework for marine decision-making that is consistent, evidence based and secures a sustainable future for Ireland's marine area.

A draft NMPF will be published in Q3 2019 for a period of public engagement and consultation (this follows an earlier engagement phase on the development of the NMPF Baseline Report), with the final plan due before

end 2020. Both the draft and final plan will set out specific objectives and marine planning policies for all of the activities taking place in Ireland's seas, from aquaculture through to waste water treatment.

Marine Planning Policy Statement (Consultation Draft)

The Department of Housing, Planning and Local Government is currently inviting submissions on the Marine Planning Policy Statement. The Marine Planning Policy Statement will apply to all facets of marine planning. It is being introduced initially on a non-statutory basis, pending the introduction of legislation in 2020 that will provide for the preparation, adoption and review of statutory marine planning policy statements on six-yearly cycles. It reflects the comprehensive updating and renewal now underway of Ireland's marine planning system, setting out core principles to inform evolving marine planning and development management process.

The draft Marine Planning Policy Statement is intended to do the following:

“Describe the existing components of Ireland's marine planning system;

Outline a vision for the future development of our marine planning system;

Set out the overarching policies and principles the Government expects marine planning bodies and other public bodies that engage with the marine planning system to observe (in terms, for example, of public engagement, transparency, governance, environmental assessment, climate action, social and economic benefit);

Set out high-level priorities for the enhancement of the marine planning system in Ireland.”

The provisions of national policy provide support for the development of, and investment in, Dublin Port in general as it is recognised as a key element of infrastructure necessary for economic growth. In particular, National Ports Policy explicitly endorses the planned development of Dublin Port. The proposed development is therefore consistent with national policy and objectives.

Regional Planning Guidelines for the Greater Dublin Area 2010-2022

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. The RSES is a strategic plan and investment framework to shape the future development of the region to 2031 and beyond. The RSES provides a:

Spatial Strategy – to manage future growth and ensure the creation of healthy and attractive places to live, work, study, visit and invest in.

Economic Strategy – that builds on our strengths to sustain a strong economy and support the creation of quality jobs that ensure a good living standard for all.

Metropolitan Plan – to ensure a supply of strategic development areas for the sustainable growth and continued success and competitiveness of the Dublin Metropolitan Area.

Investment Framework – to prioritise the delivery of key enabling infrastructure and services by government and state agencies.

Climate Action Strategy – to accelerate climate action, ensure a clean and healthy environment and to promote sustainable transport and strategic green infrastructure.

The RSES, prepared in accordance with the NPF, sets the context for each local authority within the Region to develop county and city development plans in a manner that will ensure national, regional and local plans align.

With respect to the profile of the region the RSES notes that the Dublin region is the main global gateway to Ireland, with Dublin Airport one of the fastest growing in Europe and continued growth both in the import and export of goods through Dublin Port. In this regard the RSES identifies three strategic connections in the region which include the Eastern Corridor, strategic connections to the Northern and Western Region, and strategic connections to the Southern Region.

The RSES defines the Dublin - Belfast Economic Corridor, which is contained within the Eastern Corridor, as the largest economic agglomeration on the island of Ireland with the cities and towns along the corridor home to a population of around 2 million. The corridor connects the large towns of Drogheda, Dundalk and Newry by high-capacity national road and rail links, major airports of Dublin Airport, Belfast International Airport and Belfast City Airport and Belfast and Dublin ports. The RSES supports the development of the Dublin - Belfast Economic Corridor through targeted investment in transport infrastructure and services complementing and maintaining its function as part of the EU TEN-T core network. Directly relevant to Dublin Port and its growth is the identification of the M50 Dublin Port South Access Road as one of the Strategic Road Network projects (RPO 8.10) which will be appraised and delivered subject to the outcome of appropriate environmental assessment and the planning process (page 185).

The RSES states that the Dublin City and Metropolitan Area accounts for about half of the Region's population or a quarter of the national population, as well as being the largest economic contributor in the state. As Ireland's only international city of scale, Dublin acts as the global gateway to Ireland and its influence extends well beyond its administrative boundaries. Growth Enablers for Dublin City and Metropolitan Area include:

“Protect and improve access to the global gateways of Dublin Airport and Dublin Port for the Region and to serve the Nation, and safeguard and improve regional accessibility and service by rail, road and communication, with a key focus on the Dublin-Belfast Economic Corridor.” (page 34)

To achieve the vision the MASP identifies a number of Guiding Principles for the sustainable development of the Dublin Metropolitan Area. With respect to Dublin Port these include:

“Dublin as a Global Gateway – In recognition of the international role of Dublin, to support and facilitate the continued growth of Dublin Airport and Dublin Port, to protect and improve existing access and support related access improvements.” (page 95)

The NPF includes High-Quality International Connectivity as a National Strategic Outcome and recognises the crucial role that the provision of high-quality international connectivity has for overall international competitiveness and addressing opportunities and challenges from Brexit through investment in our ports and airports, in line with sectoral priorities already defined through *National Ports Policy* and *National Aviation Policy* and signature projects such as the second runway for Dublin Airport and major redevelopment at Dublin Port including proposals for a southern port access route.

The RSES recognises that Ireland's port and shipping services play an important role as enablers of economic growth, noting that the Region is home to the largest sea port in the country, Dublin Port. The RSES states that

given the nature and function of ports, combined with the location interfacing with the marine environment, there is potential for environmental conflict with the existing ecosystem. It continues that this sensitivity is further increased by the proximity of most of the Region's ports to designated sites.

In order to minimise potential impacts on EU protected habitats, the RSES advocates, brownfield port developments which maximise the capacity of existing port sites should be prioritised over greenfield developments.

It continues that the approach to port development in the Region shall adhere to the European Commission guidelines on the Implementation of the Birds and Habitats Directives in Estuaries and Coastal Zones. As required by National Ports Policy (2013), a National Ports Capacity study has been commissioned which will assess the capacity of the national ports network.

In terms of port facilities, the RSES acknowledges that the *National Ports Policy* and the national hierarchy or tiering of ports recognises the longterm international trend in ports and shipping towards increased consolidation of resources in order to achieve optimum efficiencies of scale. It notes that 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. As set out under Section 3.3 *National Ports Policy* seeks to ensure that the strategic development requirements of Tier 1 Ports, ports of regional significance and smaller harbours are addressed to ensure their effective growth and sustainable development at a national and regional level, this is acknowledged in the RSES.

With specific regard to Dublin Port, the RSES states that it is the largest port in the Country handling almost 50% of all trade in Ireland and growth of 35.7% over the last five years. Dublin Port is recognised in this RSES as a critical national facility; a key economic driver for the Region and the nation and an integral part of Dublin City, in line with the Dublin Port Masterplan 2040, Reviewed 2018.

Regional Policy Objectives guiding the development of ports and specifically Dublin Port within the RSES which states:

"RPO 8.21: The EMRA will support the role of Dublin Port as a Port of National Significance (Tier 1 Port) and its continued commercial development, including limited expansion and improved road access, including the Southern Port Access Route.

RPO 8.23: The EMRA supports the protection of the marine related functions of ports in the Region in order to ensure the future role of ports as strategic marine related assets is protected from inappropriate uses, whilst supporting complimentary economic uses including the potential for facilitating offshore renewable energy development at ports.

RPO 8.24: The EMRA supports the undertaking of feasibility studies to determine the carrying capacity of ports in relation to potential for likely significant effects on associated European sites including SPAs and SACs." (Page 190)

Strategic Greenways proposed and/or under development in the metropolitan area include:

"East Coast Route from Sutton to Sandymount with potential to link into a Dublin Port Greenway, to extend north to link into the Fingal Coastal Way and to develop a wider East Coast Trail from Rosslare to Northern Ireland." (page 103)

The RSES also supports the protection of the Dublin Bay Biosphere. RPO 7.20 states:

“Promote the development of improved visitor experiences, nature conservation and sustainable development activities within the Dublin Bay Biosphere in cooperation with the Dublin Bay UNESCO Biosphere Partnership.” (Page 156)

The proposed development seeks to accords with the identified need to enhance international capacity and expand port facilities serving the region whilst protecting Dublin Bay Biosphere.

Transport Strategy for the Greater Dublin Area, 2016 - 2035

The *Transport Strategy for the Greater Dublin Area, 2016 to 2035*, prepared by the National Transport Authority sets out how transport will be developed across the region, covering Dublin, Meath, Wicklow and Kildare up to 2035.

As such the strategy is largely concerned with transport within the GDA and Ireland. The strategy does however seek to protect and enhance the capacity of the TEN-T network including Dublin Port. The importance of Dublin Port at a regional and national level is recognised within the strategy and the need for landside connectivity is prioritised.

“The need to facilitate the expansion of activity at Dublin Port into the future, as both a commercial and passenger port, must, therefore, be supported by the Strategy, through the clear identification and safeguarding of designated access routes”. (page 36)

The delivery of a link road connecting the southern end of the Dublin Port Tunnel to the South Port area is included as a National Road project to be delivered in the Transport Strategy.

The provisions of regional policy support the development of Dublin Port as it is recognised as a key element of infrastructure necessary for economic growth at the national level. The proposed development is consistent with regional policy and objectives.

Dublin City Development Plan 2016 - 2022

The Dublin City Development Plan 2016-2022 (Development Plan) is the primary statutory land use planning policy document guiding development within Dublin City including Dublin Port.

Section 4.5.1.2 of the Development Plan recognises and outlines general support for the activities of Dublin Port:

“Dublin City Council fully supports and recognises the important national and regional role of Dublin Port in the economic life of the region and the consequent need in economic competitiveness and employment terms to facilitate port activities.

Dublin Port will have a significant role to play in the future development and growth of the city and it is considered prudent to plan the structure of this part of the city, including the proposed public transport network, to fully integrate with the developing new city structure and character, while having regard to the Dublin Port Company Masterplan 2012 – 2040”. (page 59)

In addition to this high level support the Development Plan contains a number of policies and objectives facilitating Dublin Port operations and activities, including:

“SC9: To support and recognise the important national and regional role of Dublin Port in the economic life of the city and region and to facilitate port activities and development, having regard to the Dublin Port Masterplan 2012-2040. (page 46)

CEE23 (iii): To recognise that Dublin Port is a key economic resource, including for cruise tourism, and to have regard to the policies and objectives of the Dublin Port Masterplan”. (page 83)

Key strategic policies and objectives of Dublin City Council set out in the Development Plan endorse the improvement of port infrastructure in order to facilitate economic growth and policies relating to the protection of the natural and built environment. The MP2 Project is consistent with these policies and objectives.

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 nonetheless been framed within the context of EU, national, regional and local development plan policies and explicitly endorsed in the National Ports Policy, 2013. 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 passenger (including cruise ships).

The Masterplan was prepared by DPC in order to:

- *“Plan for future sustainable growth and changes in seaborne trade in goods and passenger movements to and from Ireland and the Dublin Region in particular.*
- *Provide an overall context for future investment decisions.*
- *Reflect and provide for current National and Regional Guidelines and initiatives.*
- *Ensure there is harmony and synergy between the plans for the Port and those for Dublin City, the Dublin Docklands Area and neighbouring counties within the Dublin Region.*
- *Give some certainty to customers about how the Port will develop in the future to meet those requirements”*
(page 14)

The MP2 Project seeks to deliver a number of the elements envisaged for each of the areas as set out in the Masterplan.

3 PROJECT DESCRIPTION

This section summaries the project description. The description is mandatory under the EIA Directive and comprises the location, design, size, scale of the project.

Location of the Project

The proposed development is located mainly within the Northern Lands of Dublin Port, Dublin City. Dublin Port is the largest Port in Ireland, situated on Ireland's Eastern Coastline, as shown in Figure 3-1. The project also includes capital dredging works within Dublin Port Harbour.

The Northern Lands of Dublin Port (referred to as the Dublin Port Estate within this EIAR) comprise 207 ha of land entirely within the ownership of Dublin Port Company. The entire Port Estate comprises 309 ha, including the lands at the Dublin Inland Port.

The main road transportation route between the Dublin Port Estate and the national road network is via the Dublin Port Tunnel. The site is also connected to the national rail network.

Dublin Port's navigation channel and fairway are currently maintained to a standard depth of -7.8m CD. The main navigation channel and fairway are currently being deepened to -10.0m CD under the permitted Alexandra Basin Redevelopment (ABR) Project (ABP Ref. 29N.PA0034) to enable the safe passage of larger vessels bringing freight and passengers to and from the Port.

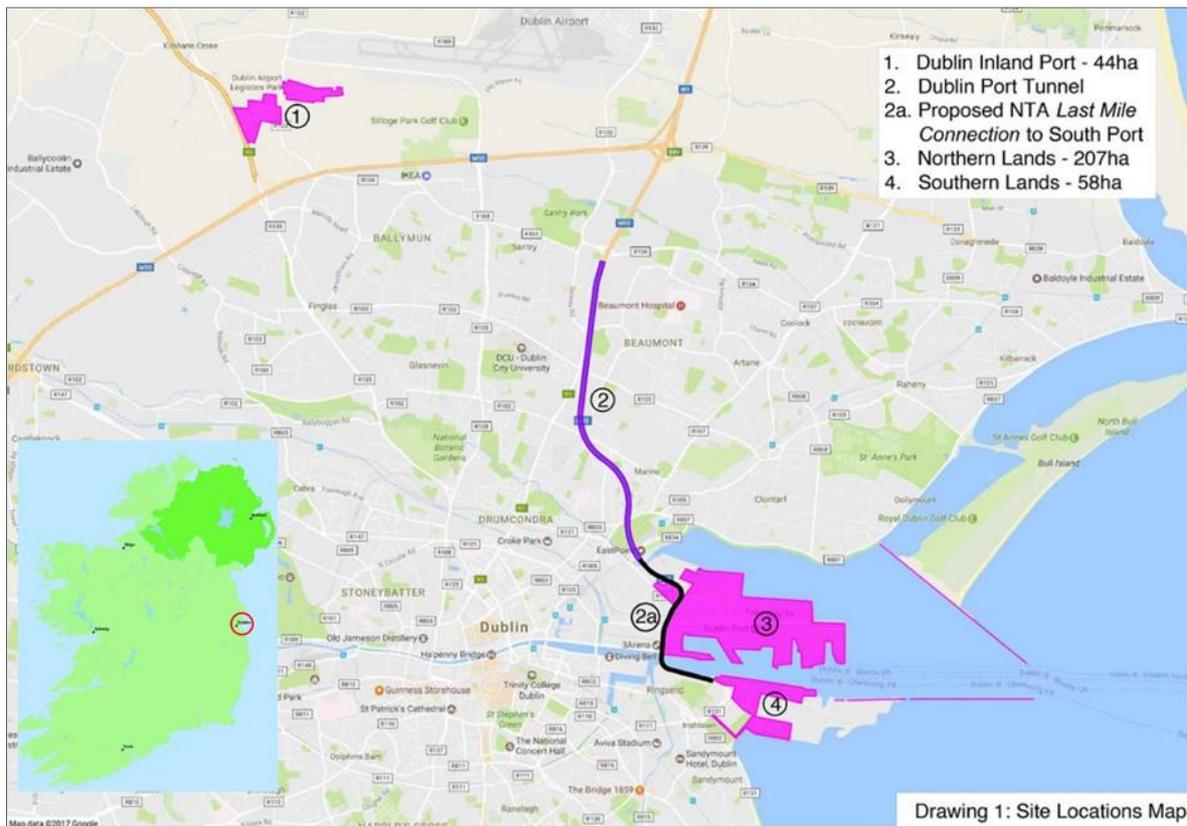


Figure 3-1 Site Location Map (reproduced from the Dublin Port Masterplan 2040, reviewed 2018)

Development Area

The area of the proposed development for which permission is sought, and in respect of which this EIAR has been prepared, is defined by the 'application boundary' as illustrated on Figure 3-2. The site is located at the eastern end of the Dublin Port Estate including an area to be dredged to the south of the site. The application site area is 165.2 ha.

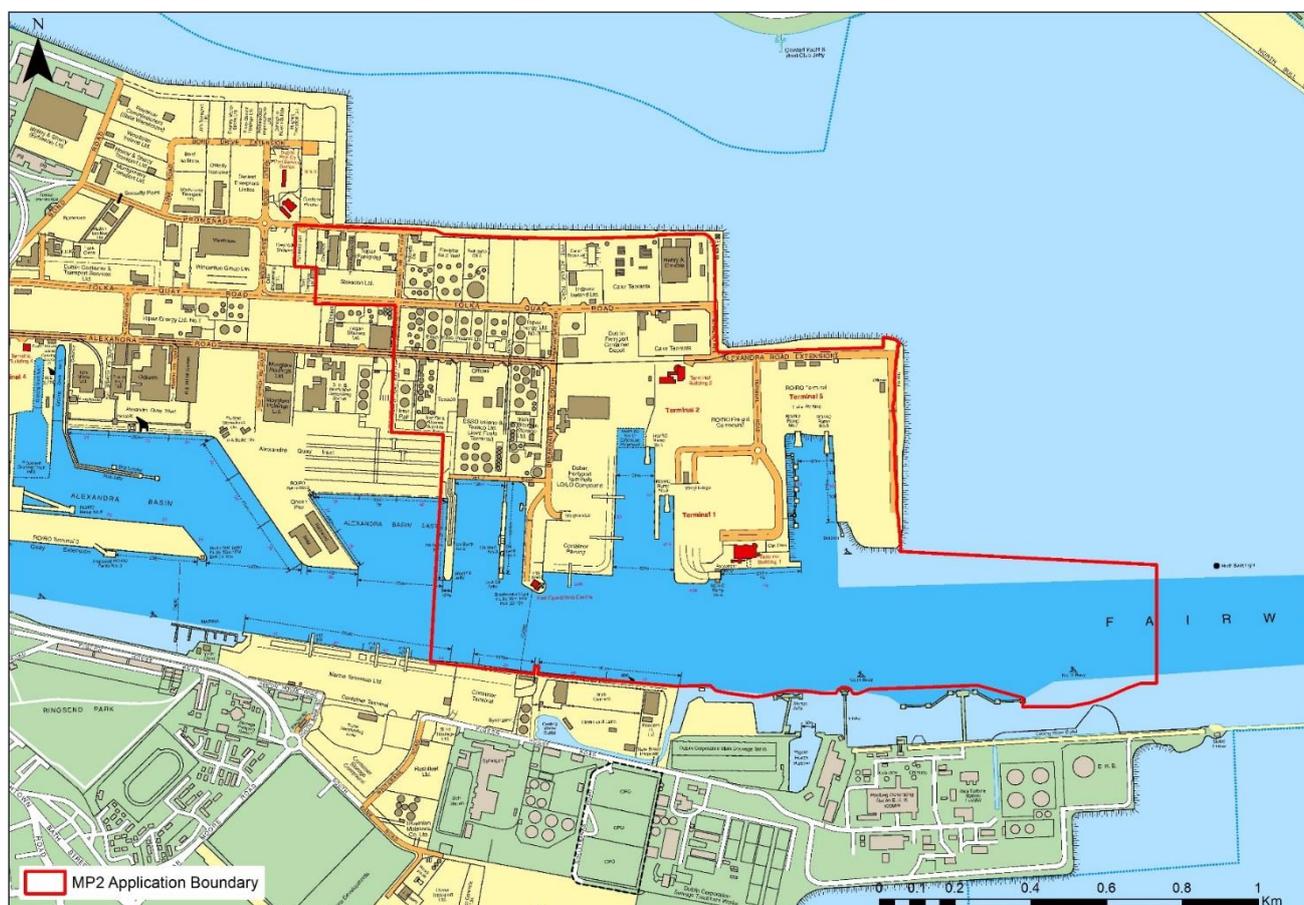


Figure 3-2 Existing Site with MP2 Application Boundary

Oil Berths: There are two Oil Jetties in operation within the Dublin Port Estate supporting a range of above ground pipework. The Western Oil Jetty has two berths (Oil Berths 1 and 2). These berths facilitate the majority of petroleum product imports at Dublin Port. The Eastern Oil Jetty also has two berths (Oil Berths 3 and 4).

Lo-Lo (Lift-On Lift-Off) Container Freight Terminal: There is one major Lo-Lo Container Freight Terminal within the application boundary of the MP2 Project.

Ro-Ro (Roll-On Roll-Off) Terminals: There are a currently five Berths within the development area with ramps for Ro-Ro freight and passengers. Ro-Ro refers to shipping services and activities where vehicles are driven on and off ferries or other specialised ships (such as car carriers). Some services are freight only; others carry a combination of freight and passengers.

Ro-Ro freight is transported either “accompanied” or “unaccompanied”. “Accompanied” refers to trailer units to which the cab is attached at all times and the driver accompanies the vehicle on the Ro-Ro ferry. “Unaccompanied” refers to freight trailers that are delivered and collected from the compound adjacent to the vessel. These trailers are driven on and off ships by dock workers.

The main difference in the two operations is the amount of land needed to service the units. In the case of accompanied freight, the units drive off the vessel and leave the port immediately. Unaccompanied freight requires larger areas of parking.

Ferry Terminal Buildings: There are three ferry terminal buildings located within the MP2 Project application boundary. Terminal 2 is used by Stena Line, Terminal 5 is used by Seatruck and Terminal 1 is used by Irish Ferries, with seasonal use by Isle of Man Steam Packet Company. Terminal 2 and Terminal 5 will be demolished as part of the works, with the existing Terminal 1 Building being used as a unified terminal building thereafter. The Seatruck operation at Terminal 5 will be relocated to the west of the Dublin Port Estate to a facility permitted under the ABR Project consent.

Permitted Development under the Alexandra Basin Redevelopment (ABR) Project: The ABR Project is currently at construction stage having been granted permission by An Bord Pleanála (ABP) in July 2015 (ABP Ref. 29N.PA0034). The ABR Project includes the infilling of Basin 52/53 which currently hosts two Ro-Ro Ramps operated by Seatruck. The permission also allows for the construction of a new riverside berth at the entrance to Basin 52/53 (Berth 52).

Adjacent Land Use

The site is bounded to the north and east by the Tolka estuary. The Tolka estuary is used for recreational purposes mostly by small sailing craft based at Clontarf. Swimming also takes place from the North Bull Wall throughout the year, including the winter season. There are no licenced aquaculture sites within the estuary. The Tolka Estuary is also of international importance due to its large populations of waterbirds.

The site is bounded to the south by the lower River Liffey (Dublin Harbour) which is the main navigation channel for Dublin Port. The Great South Wall lies outside, but in close proximity to, the boundary of the site. DPC is the authority with responsibility for the safe passage of all shipping entering and leaving the Port. No other commercial activities are permitted within the navigation channel for safety reasons. A number of events are hosted by DPC including the annual 'Riverfest'. Accommodation is also made for sailing and boating activity based at the Poolbeg Yacht, Boat Club and Marina and Stella Maris Rowing Club.

The site is bounded to the west by Port lands with similar land uses to that within the development area.

Amenity Designations

There are a number of Natura 2000 sites designated as Special Protection Areas (SPAs) or candidate Special Areas of Conservation (cSACs) which could have connectivity with the proposed development area. The key sites are considered to be:

- South Dublin Bay and River Tolka Estuary SPA
- North Bull Island SPA
- North Dublin Bay cSAC
- South Dublin Bay cSAC
- Rockabill to Dalkey Island cSAC

There are no protected archaeological or industrial heritage features designated within the development area. However the Eastern Breakwater and its terminus at Pier Head is on the Dublin City Industrial Heritage Record and is therefore of industrial heritage interest. Pier Head formed the end of the 19th Century Eastern Breakwater which marked the end of eastern extremity of Dublin Port during that era. This Pier Head is proposed to be demolished as part of the MP2 Project. The Great South Wall which lies outside, but in close proximity, to the development area is a protected structure and National Monument and is not affected by the MP2 Project.

Proposed Development Works

This section summarises both the proposed marine and landside structural works, and the associated dredging and infill works required to achieve the MP2 Project's objectives. The works proposed as part of the MP2 Project are summarised as follows (see previous Figure 1-1):

- Construction of a new Ro-Ro jetty (Berth 53) for ferries up to 240m in length.
- A reorientation of the already consented Berth 52 (ABP Ref. 29N.PA0034) and modification to Berth 49.
- A lengthening of an existing river berth (50A).
- The redevelopment of Oil Berth 3, and infill of Oil berth 4, as a future deep-water container berth for the Container Freight Terminal.
- The dredging of berthing pockets and channel widening.
- Consolidation of passenger terminal buildings, demolition of redundant structures and buildings, and removal of connecting roads to increase the area of land for the transit storage of Ro-Ro freight units as a Unified Ferry Terminal (UFT); a heritage zone adjacent to Berth 53 and the Unified Ferry Terminal set down area.

Berth 52/49

Berth 52 will be used predominantly for the berthing of Ro-Ro ferries. The berth will accommodate the bow-to and stern-to berthing of a wide range of ferries up to 240m in length.

The proposed works at Berth 52, presented in Figure 3-3 will comprise a modification to Berth 52 which was previously granted permission (ABP Reference 29N.PA0034). The modification will comprise the following:

- Rotation of Berth 52 by approximately 9 degrees (clockwise);
- Encompassing the proposed Berth 49 eastern dolphins within a new quay wall structure;
- Reorientation of the proposed linkspan and approach ramp to Berth 52.

The reorientation of Berth 52 by approximately 9 degrees is required to facilitate the development of Berth 53. This relatively minor reorientation allows Berth 53 connectivity with the Port lands, minimises its length and maximises the buffer between Berth 53 and the boundary of the South Dublin Bay and River Tolka SPA.

The works at Berth 52 comprise the following:

- The construction of a new Ro-Ro jetty structure approximately 288m in length. The structure comprises a combination of a steel cellular wall, steel sheet pile combi wall, and an open piled structure (at the commencement of Berth 53);

- Construction of new sheet pile combi-wall structure approximately 40m in length at the eastern end of Berth 49;
- Construction of new sheet pile combi-wall structure approximately 52m in length to accommodate the new linkspan structure and provide additional operational space at Berth 49;
- Construction of a new linkspan structure to allow two tier access to the Ro-Ro ferries;
- Construction of a new ramp structure to access the upper linkspan tier;
- Construction of a reinforced concrete bankseat for the linkspan;
- Installation of jetty furniture including fenders, mooring bollards, handrails and an automated mooring system;
- Installation of a power outlet for Ship to Shore Power which will be fed from the proposed substation adjacent to the proposed parking and set down area.

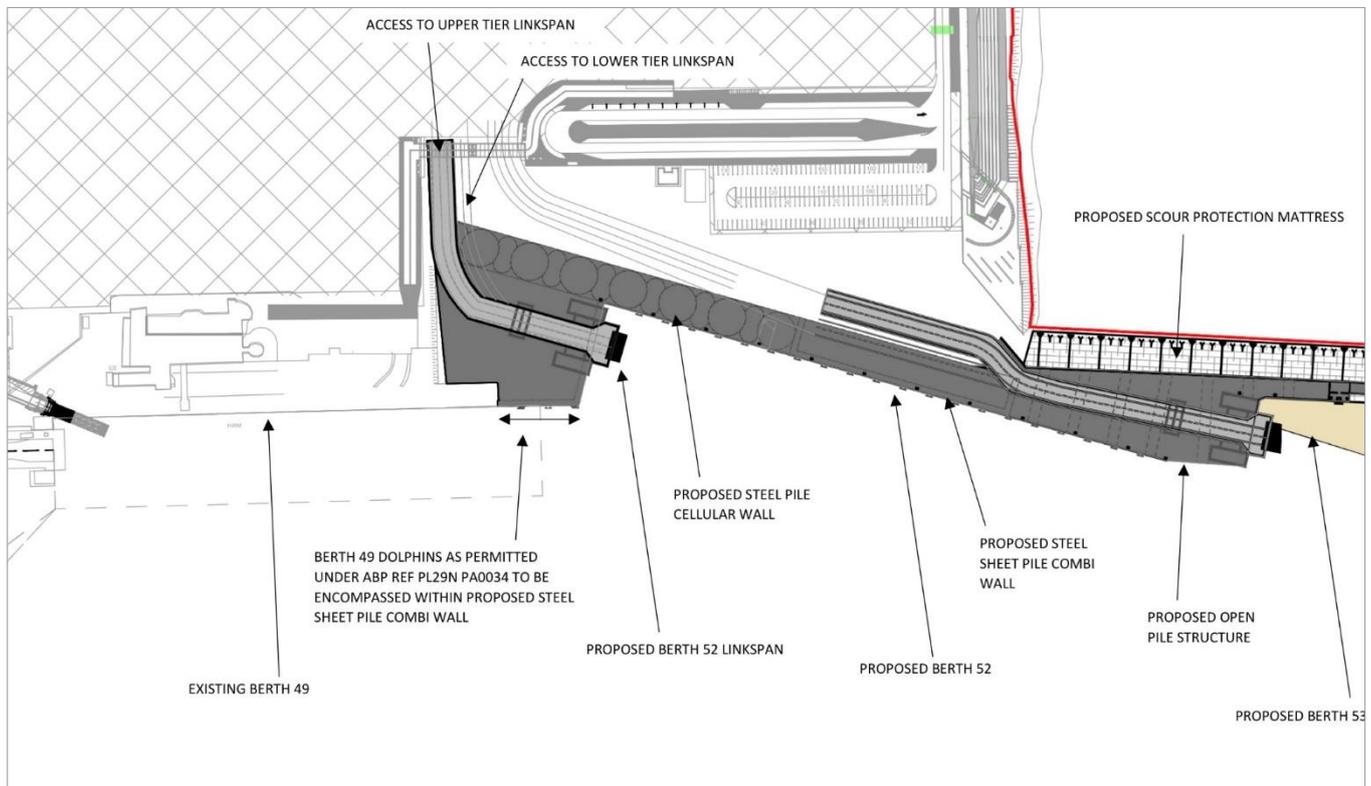


Figure 3-3 Plan View of Amendments to Proposed Berth 52 and Berth 49

Berth 53

Berth 53 will be used predominantly for the berthing of Ro-Ro ferries. The berth will accommodate the bow-to and stern-to berthing of a wide range of ferries up to 240m in length.

The design of Berth 53 has been developed by an iterative process considering, *inter alia*, its functional requirements, navigational safety, impact on views (particularly from Clontarf) and its potential impact on the conservation objectives of the South Dublin Bay and River Tolka SPA.

The proposed works at Berth 53 are presented in Figure 3-4 and will comprise:

- The construction of a new Ro-Ro jetty structure approximately 406m in length overall;
- The construction of 8 No. reinforced concrete mooring dolphins on tubular steel piles;
- Construction of a new linkspan structure to allow two tier access to the Ro-Ro ferries;
- Construction of a new ramp structure to access the upper linkspan tier;
- Construction of a new deck structure to allow access to the lower linkspan tier and dolphins;
- Construction of a reinforced concrete access/maintenance route to the dolphins;
- Construction of a reinforced concrete bankseat for the linkspan;
- Dredging of a berthing pocket to a standard depth of -10.0m CD;
- Installation of scour protection mattresses to provide slope stabilisation and scour protection to the dredged berthing pocket;
- Installation of a wash protection structure to the north line of the 406m jetty structure;
- Installation of jetty furniture including visual screening barriers, fenders mooring bollards, handrails and an automated mooring system;
- Installation of a power outlet for Ship to Shore Power which will be fed from the proposed substation adjacent to the proposed parking and set down area.

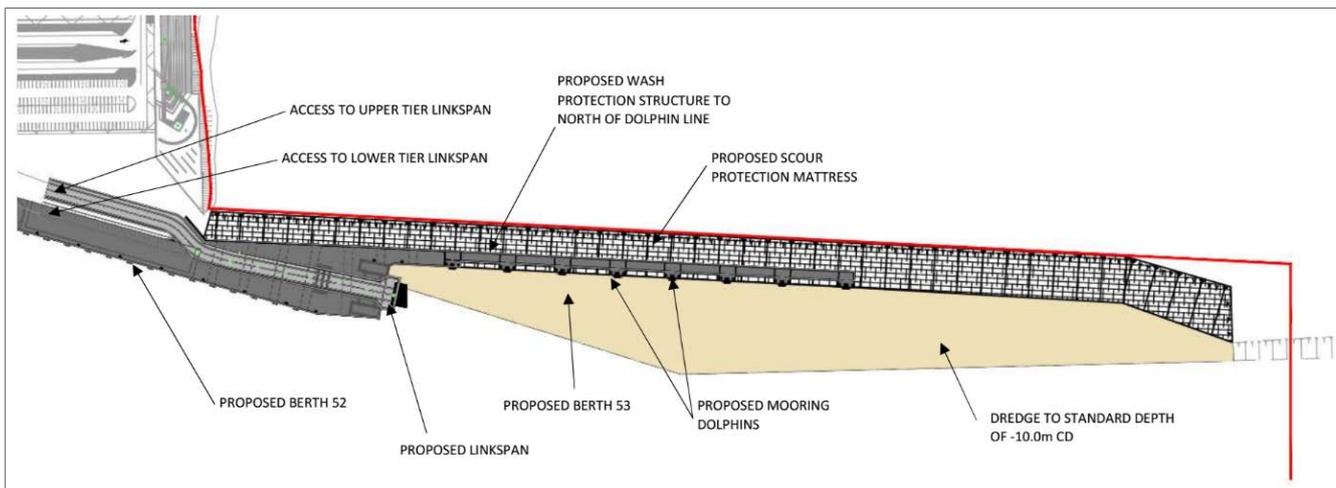


Figure 3-4 Plan view of proposed Berth 53

Berth 50A

It is proposed to extend the existing Berth 50A to provide a multi-purpose predominately Lo-Lo Container Vessel berth.

The proposed works at Berth 50A are presented in Figure 3-5 and will comprise the following:

- Demolition of the Port Operations Building and ancillary structures;
- Demolition of the Pier Head at the terminus of the 19th Century Eastern Breakwater including the salvage and storage of masonry units for future use in heritage gain projects;
- Demolition of the southern end of the Eastern Oil Jetty;
- Construction of a new steel sheet pile combi-wall which will act as the berthing face. The new section of quay wall will be approximately 125m in length, providing an overall quay length of approximately 305m;
- Installation of a sheet pile anchor wall and ties to support the combi-wall;
- Construction of a bridging structure to avoid disruption to existing 220KV High Voltage ESB Cables which run through the site, to include for temporary protection works;
- Backfilling of structure with engineering fill material and Construction & Demolition Waste (as part of Oil Berth 3 works);
- Installation of new tubular steel piles to support the extension of the existing crane rails;
- Construction of a new reinforced concrete deck.
- Dredging of a berthing pocket to a standard depth of -11.0m CD;
- Installation of jetty furniture including crane rails, fenders, mooring bollards and emergency ladders.

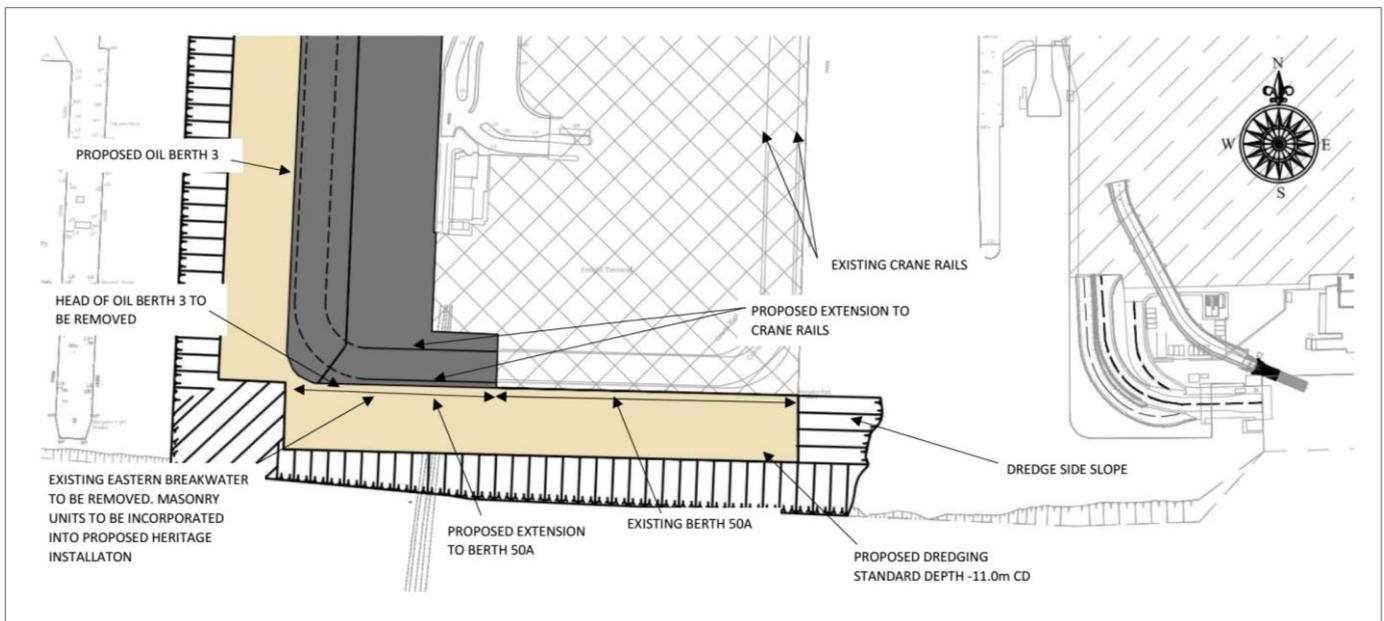


Figure 3-5 Plan view of proposed berth 50A

Oil Berth 3

The Eastern Oil Jetty comprises Oil Berth 3 to the west and Oil Berth 4 to the east. The proposed development will involve the removal of Oil Berth 4 and consolidating operations to Oil Berth 3. The berth will be designed as a multi-purpose structure, initially for oil tanker berthing, with a future potential use as a container vessel berth. The basin at Oil Berth 4 will be infilled to provide an additional container freight terminal storage area.

The proposed layouts are presented in Figure 3-6 and Figure 3-7.

The works will comprise the following elements:

- Temporary support of the oil berth gantry (framework) and equipment;
- Demolition of the southern end of the Eastern Oil Jetty (as per description of Berth 50A);
- Demolition of the existing pilot boat pontoon and gangway;
- Construction of a new steel sheet pile combi-wall at a minimum of 5m distance from the face of the existing. The proposed combi wall will be comprised of circular piles of circa 1.4m diameter with sheet pile infill panels Oil Berth 3. It is proposed to retain the existing structure in position throughout the works. The new quay wall will be approximately 239m long;
- Infilling of the basin at Oil Berth 4 with engineered fill material and suitable recycled Construction and Demolition (C&D) waste arising from proposed demolition works within the footprint of the MP2 Project development area. The void between the existing Oil Berth 3 and the proposed new sheet pile wall will also be filled with engineered fill material. The quantity of fill material required is approximately 145,000m³;
- Installation of a sheet pile anchor wall and ties to support the combi-wall;
- Installation of new tubular steel piles to support the potential future extension of the crane rails;
- Construction of a new reinforced concrete deck. The new deck will have a plan area of 20,000m² which is an increase of 17,500m² over the existing deck area.;
- Construction of a circa 2m high wall as a separation boundary between the Container Freight Terminal Yard and the Oil Berth;
- Dredging of a berthing pocket to a standard depth of -13.0m CD;
- Installation of jetty furniture including Fenders (panel and corner roller fenders), mooring bollards and emergency ladders.

The dredging of a berthing pocket to a standard depth of -13.0m CD at Oil Berth 3 will require stabilisation of the existing quay wall at Jetty Road. It is not proposed to use this quay wall for the berthing of vessels.

The works will comprise the following elements:

- Construction of a new steel sheet pile combi-wall 5m in front of the face of the existing Jetty Road quay wall. The new quay wall will be approximately 120m long;
- Installation of ground anchors to stabilise the new sheet pile combi-wall. These anchors will be fixed into bedrock. This system negates the need for a sheet pile anchor wall;

- Installation of fill material behind the new wall;
- Construction of a new reinforced concrete capping beam;
- Re-decking the existing Jetty Road;
- Installation of furniture including emergency ladders and handrails.

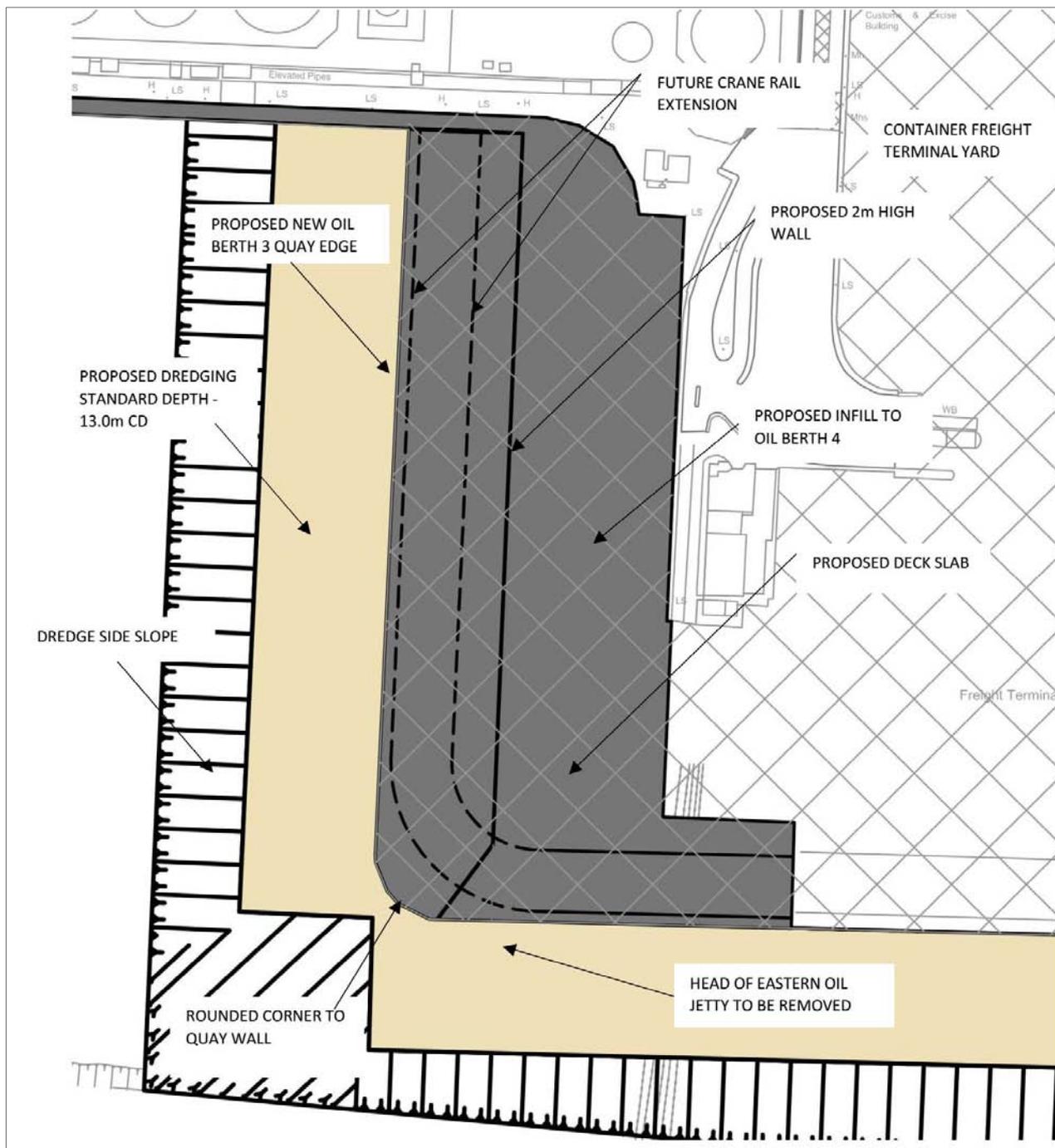


Figure 3-6 Plan view of proposed Oil Berth 3

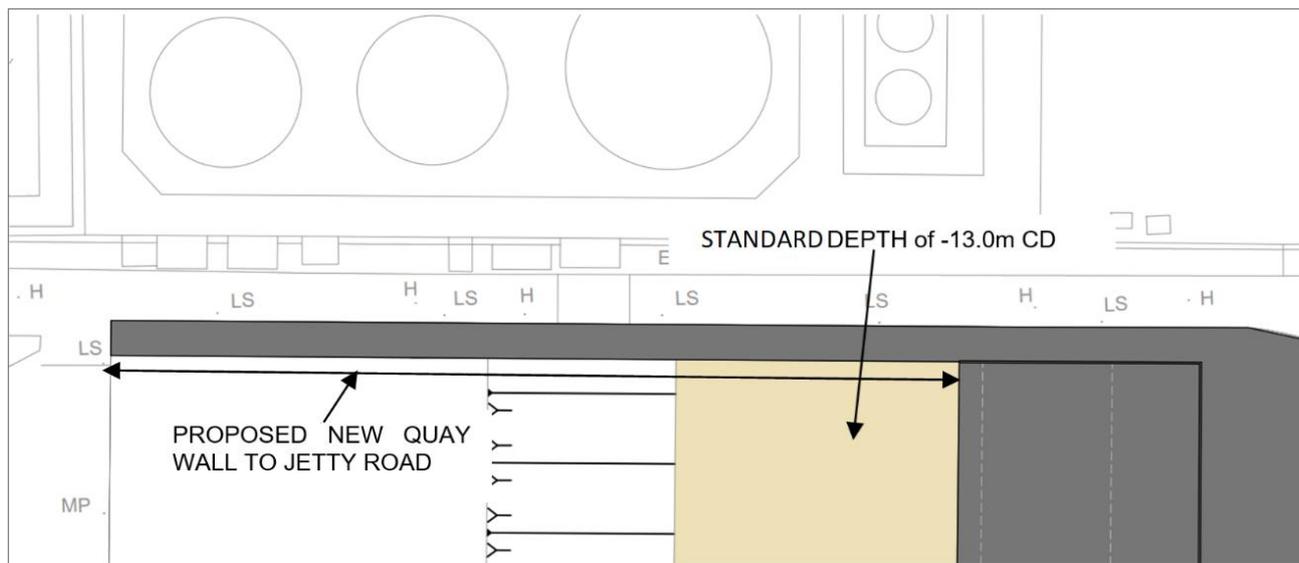


Figure 3-7 Plan of proposed Jetty Road Quay Wall

Channel Widening Works

To facilitate the safe navigation and turning of vessels of up to 240m in length, and the expected increased frequency of sailings, channel widening works will be required to the south of the existing navigation channel. Widening will be carried out via dredging works. The standard depth of the channel will be -10.0m CD.

The layout design of the dredging works, indicated in Figure 3-8 has been developed via an iterative process considering, amongst others, its navigational safety, proximity to proposed berths, its potential impact on the Great South Wall and its potential impact on the conservation objectives of the South Dublin Bay and River Tolka SPA.

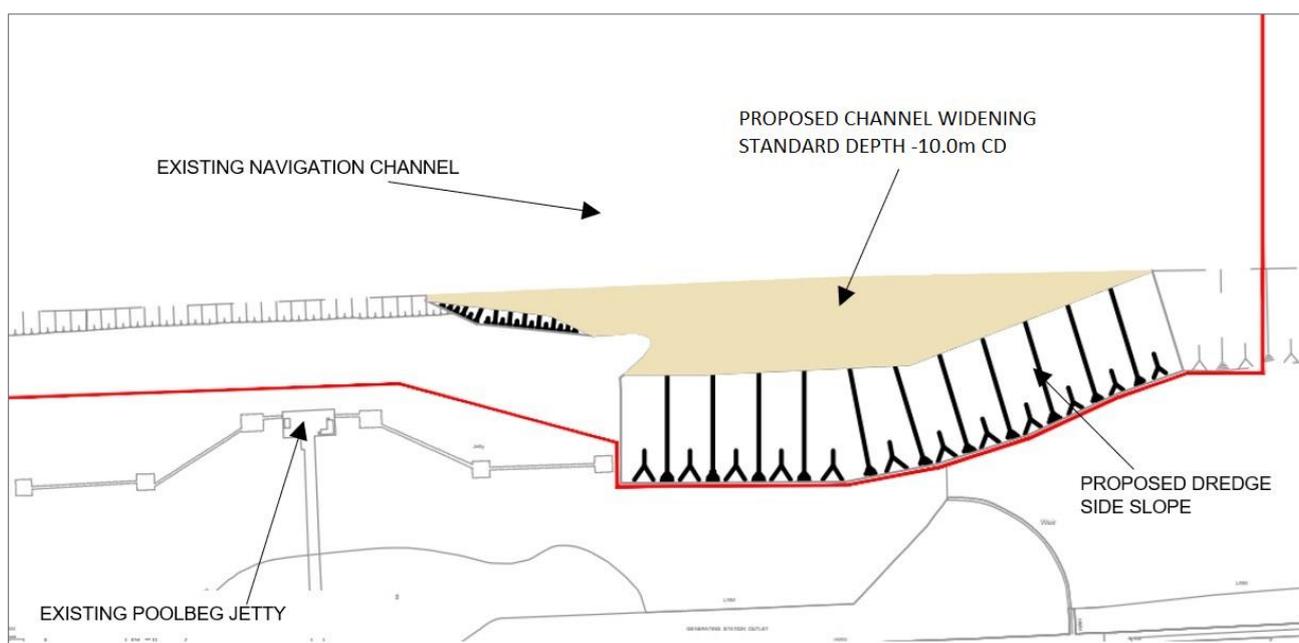


Figure 3-8 Plan view of proposed channel widening works

The navigation channel has permission to be deepened from -7.8m CD to -10.0m CD under the ABR Project (ABP Ref. 29N.PA0034). The capital dredging scheme for the ABR Project commenced in October 2017 with dredging activity taking place within the navigation channel and fairway within Dublin Bay. The ABR Project capital dredging of the section of navigation channel adjacent to the proposed MP2 Project channel widening is scheduled for the winter season October 2020 – March 2021.

Dredging and Disposal Works

The volume of capital dredging required for each element of the works is tabulated in Table 3-1.

Table 3-1 Dredging Summary

Element of Work	Standard depth	Volume
Berth 53	-10.0m CD	159,595m ³
Channel Widening	-10.0m CD	111,995m ³
Oil Berth 3	-13.0m CD	83,414m ³
Berth 50A	-11.0m CD	69,640m ³
Total Volume to be dredged		424,644m³

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 bed-leveller to remove peaks and troughs created by the dredger. It is proposed to dispose of the dredged material at the licenced dump site at the entrance to Dublin Bay located to the west of the Burford Bank, presented in Figure 3-9.

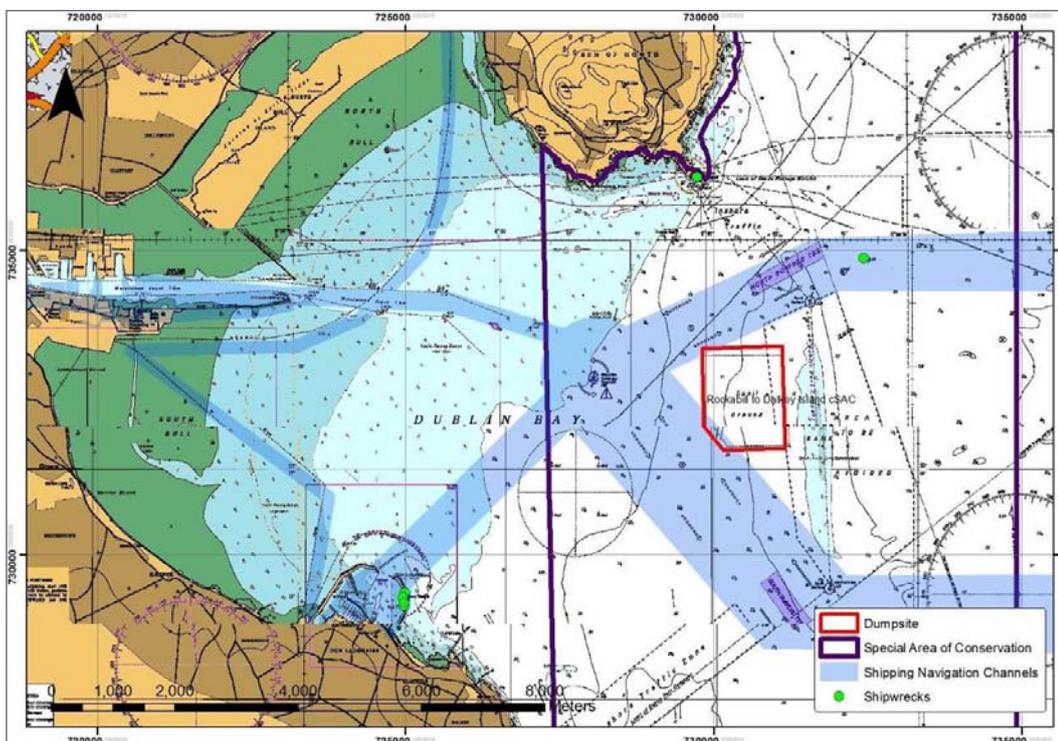


Figure 3-9 Location of licensed offshore disposal site

The loading and dumping of the dredged material will be subject to separate consents; a Foreshore Licence is required from the Department of Housing, Planning and Local Government (DHPLG) and a Dumping at Sea Permit is required from the Environmental Protection Agency (EPA).

Unified Ferry Terminal

It is proposed to provide a Unified Ferry Terminal at the eastern end of the port to facilitate Irish Ferries, Stena Line, P&O and the seasonal Isle of Man service. The existing Seatruck operation in this area will be relocated to the western end of the port.

The area at the eastern end of the port currently includes facilities for traffic and passengers both within the International Ship and Port Facility Security Code (ISPS) restricted area and areas outside the restricted area where public access is possible. In order to improve efficiency and optimise the Ro-Ro yard area it is proposed to relocate all public access to the perimeter of the site leaving the internal area free for unified port operations.

The area will be flexible as the usage of the port evolves and will generally be split into staging areas for accompanied heavy goods vehicles (HGVs), accompanied cars and unaccompanied trailers. Circulation routes will be provided to route vehicles from the check in area to each staging area and from each staging area to the berths. Routes will also be provided to route vehicles from the berths back to the unaccompanied staging area and to the exit via the state services yard. A site plan of the proposed land elements of the works is presented in Figure 3-10.

The proposed land elements of the works will not impede on the existing railway lines present within the site boundary.

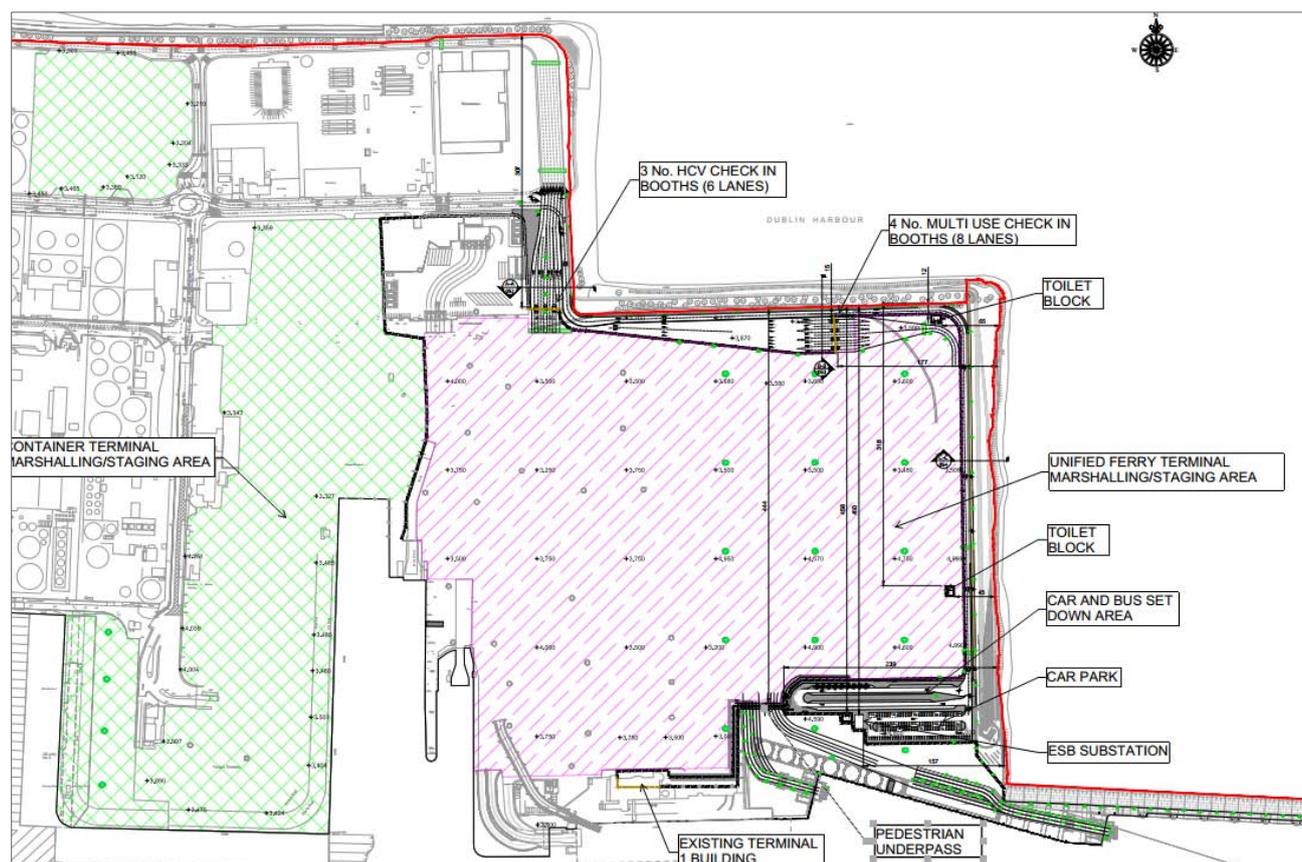


Figure 3-10 Site Plan of the proposed landside elements of the works

Demolitions

In order to facilitate the proposed Unified Ferry Terminal [UFT] it is a requirement to demolish existing structures within the site. The demolitions proposed as part of the MP2 Project are: Terminal 2 Building, Terminal 2 Check In, Terminal 5 Building, Terminal 5 Check In, Terminal 5 Sheds (3 no.), Terminal 5 Substations (2 no.), Terminal 1 Car Check In, Oil Berth 4 basin pontoon, Pier Head, modular lightweight port operations building and steel framed mast, and Head of Oil Berth 3..

Departures

It is proposed that departing vehicles will arrive to the new Unified Ferry Terminal (UFT) via Promenade Road and the Promenade Road Extension. The proposed departure route is presented in Figure 3-11. As part of the Dublin Port Internal Roads Project, there are seven southbound lanes proposed to link the Promenade Road Extension to the entrance to the UFT at Alexandra Road. There are also four north bound lanes to link arrivals from UFT to Tolka Quay Road.

At the end of Promenade Road Extension, the seven departure lanes will be separated through gantry signage with lane designations.

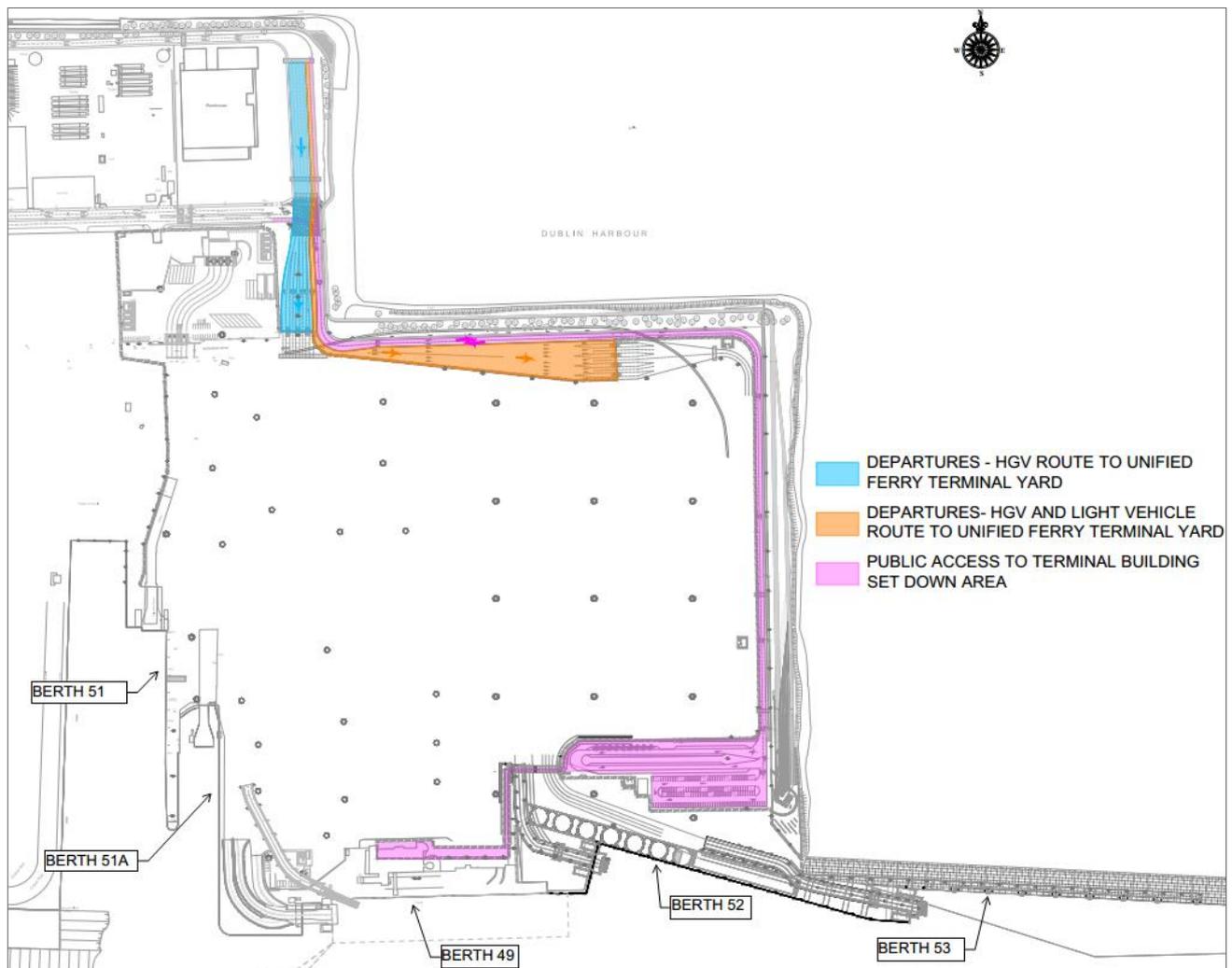


Figure 3-11 Departure Routes

Heavy Goods Vehicles: HGV check in will be facilitated at the proposed six lane HGV check-in facility at Alexandra Road and the proposed dual use eight lane check in facility towards the North East corner of the site. The queue lengths have been estimated based on target check in times to ensure adequate space is available in advance of the check-in booths to prevent pre-check in HGV queues from impacting on the public access to the Terminal building or light vehicle access to the dual use check in booths. As the port traffic increases, evolving technology will reduce the target check-in times to reduce the queue. Additional pre-check-in staging areas for HGVs will be provided elsewhere within the port if required. The proposed check-in areas include new double-sided check-in booths with a canopy provided above for cover. It is proposed to provide three new booths to service the six dedicated HGV check in lanes and an additional four booths to service the eight dual use lanes.

Following check-in, accompanied HGVs will be routed through internal circulation roads to a dedicated HGV pre-boarding holding area to await departure. Toilet facilities will be provided in this area and a pedestrian route to the terminal building will also be available via the proposed pedestrian underpass which will maintain all accompanied passengers within the ISPS restricted area. Once called from the holding area by the operator the HGVs will be routed through the internal circulation roads to the relevant berth for departure.

Unaccompanied HGVs will be directed through internal circulation routes to the relevant unaccompanied HGV staging area. Each HGV will be routed to the relevant set down space and drop off the HGV trailer before the HGV tractor unit will leave the port. The trailers will be collected by port tractor units and moved onto the relevant ship for departure.

Car / Tourism Vehicles: It is proposed that check-in for car / tourism vehicles will be facilitated at the new 8 lane dual use (HGV and light vehicle) check in facility at the north eastern corner of the site. The check in area will include four new booths to facilitate eight check-in lanes as discussed in HGV check-in section above. Gantry signage will be used to designate lanes and separate cars and HGVs queuing in this area.

Following check-in, accompanied cars will be routed through the internal circulation routes to the dedicated car staging area to await departure. Toilet facilities will be provided in this area and a pedestrian route to the terminal building will also be available via the proposed pedestrian underpass which will maintain all accompanied passengers within the ISPS restricted area. Once called from the holding area by the operator the vehicles will be routed through the internal circulation roads to the relevant berth for departure.

Foot Passengers: The existing Terminal 1 will facilitate foot passengers for all berths and operators. Access to the Terminal building will be via public road. A set down area for both cars and buses and parking facilities is provided outside the south-east corner of the UFT. Access from this point to the terminal building will be on foot with a pedestrian underpass provided to cross pedestrians beneath vehicle movements associated with Berth 52 and 53. Foot passengers will use the existing check-in facilities to cross into the ISPS restricted area within the building. Access to ships on Berth 49 will be available directly from Terminal 1 with access to vessels on other berths by bus from the building. For Berths 51 and 53 the bus will drop passengers off within the vessel and the busses will drop off at passenger walkway structures for Berths 51 and 52.

Arrivals

A new State Services facility has been constructed as part of the Interim Unified Passenger Terminal (IUPT) Project to the north of the UFT. All vehicles using the port will continue to depart via this area (Figure 3-12),

where checkpoint and inspection facilities are provided for An Garda Síochána, Revenue and the Department of Agriculture, Food & Marine.

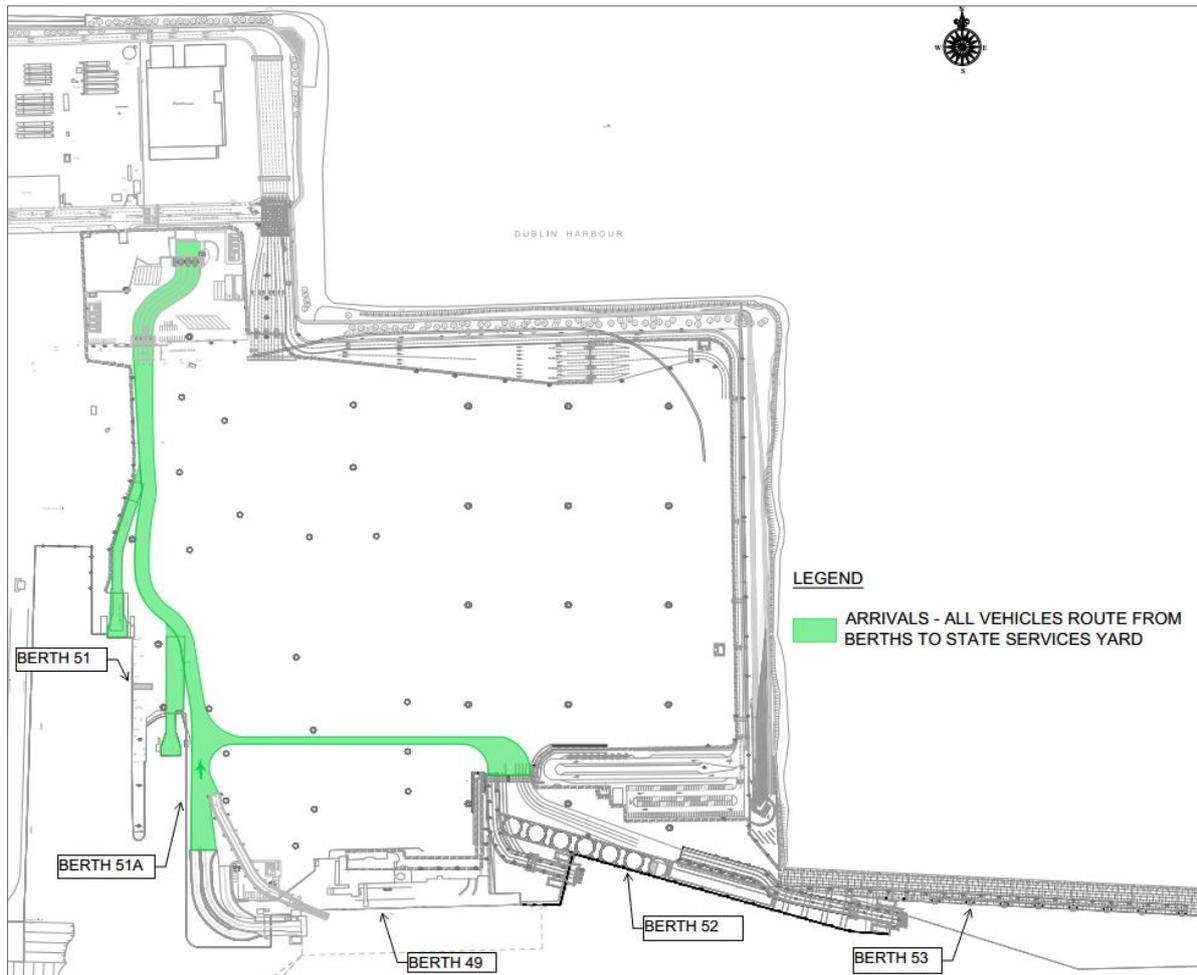


Figure 3-12 Arrival Routes

Accompanied Vehicles: Accompanied vehicles will be unloaded from the ships and directed through internal circulation routes to the state services yard. The operational layout of the UFT indicates how internal circulation could be provided with flexibility in mind to ensure it is possible to re-route vehicles arriving on the ships through the UFT to reach the back of any arrivals queue in the event of a delay in the state services yard. Lanes within the pre-boarding staging areas may also be used to hold arrival vehicles if required in the event of a significant delay.

Unaccompanied Units: The unaccompanied units will be unloaded by port tractors to a designated unaccompanied trailer holding area. The articulated tractors collecting the vehicles will enter the port through the HGV check in lanes and route to the relevant unaccompanied staging area and collect the relevant trailer. The HGV tractor and trailer unit will then exit via the state services yard.

Foot Passengers

Arriving foot passengers will be transported back to the terminal by bus (and walkway from Berth 49). They will exit the ISPS Restricted Area through the check point for An Garda Síochána; Revenue and the Department of Agriculture, Food & Marine using the facilities already in place in Terminal 1. They will then walk through the public side of the pedestrian underpass to access the pick-up and public transport facilities available at the set

down and parking area. Vehicles departing this area will then pass along the public perimeter road on the north and east boundary of the UFT and cross the HGVs queuing pre-check-in using the proposed signalised junction before joining the main port exit route on Tolka Quay Road.

Structures

The proposed primary landside structures are as follows:

- Heritage Installation
- Pedestrian Underpass
- Passenger Walkways
- Existing Passenger Terminal 1 Building
- Toilet Blocks
- Gantries
- Lighting
- Security Fence
- Utilities (Watermain, Wastewater Drainage, Stormwater Drainage, Electrical, Communication Network) It is not proposed to make significant adjustments to existing utilities).

Heritage Installation: The MP2 Project includes a proposal to create a Heritage Zone, commemorating the industrial and cultural heritage of Dublin Port in the following ways:

- The original location of Pier Head (which will be removed as part of the MP2 Project) will be recorded in inscribed text on the new quay at Berth 50A.
- A new structure or 'Marker' will be created to denote the final entrance and exit point to the port as envisaged by the Dublin Port Masterplan 2040, reviewed 2018. The Marker will incorporate the original bell and lantern which have been salvaged for conservation from the lighthouse that once stood at the end of Breakwater Road, which demarcated the end of the port in the Victorian era. A view of the Marker is presented in Figure 3-13.
- Accessible to the public by bridge, the Marker includes a viewing and interpretative deck to communicate the history of Pier Head, the legacy of Port Engineer Bindon Blood Stoney and the significance of the surrounding environment, providing views over the port and Dublin Bay.
- Beneath the Marker, an informal performance space in the shape of the Breakwater 'roundel' will create a small amphitheatre defined by retained granite from Pier Head.
- The proposal includes for a Sea Organ and Aeolian Harp, natural musical instruments which 'play' when water laps against a series of pipes and wind blows against a series of strings.
- The Heritage Zone will converge with the end of the new 4km Greenway already planned at Dublin Port (Dublin Port Internal Road Network – Reg. Ref. 3084/16), providing newly accessible public realm for leisure and recreation purposes.



Figure 3-13 View of the Marker looking South

Construction Phase

The proposed construction phasing plan is presented in Figure 3-14. The construction sequencing programme is presented in Figure 3-15.

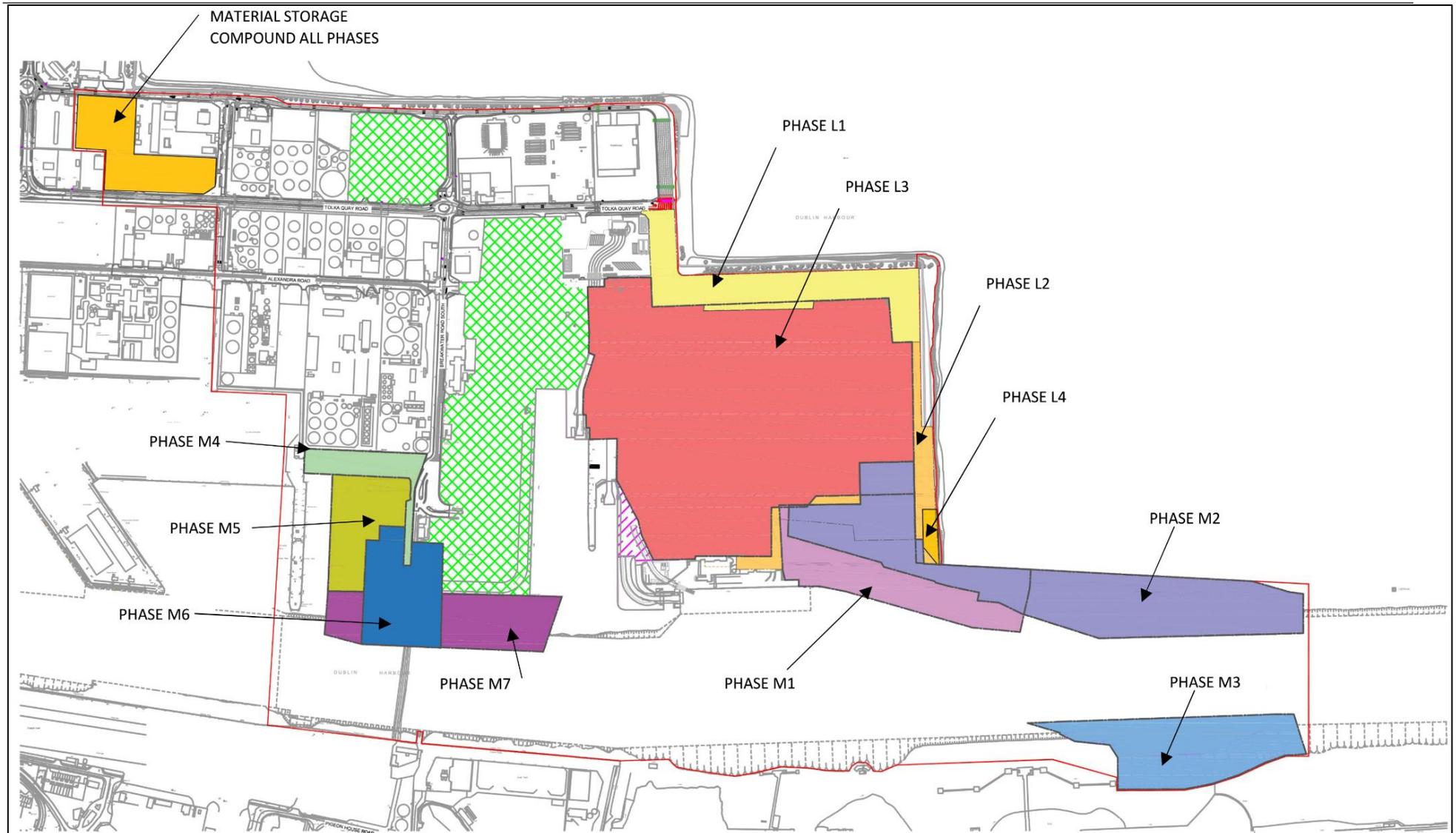


Figure 3-14 Plan of general project phasing

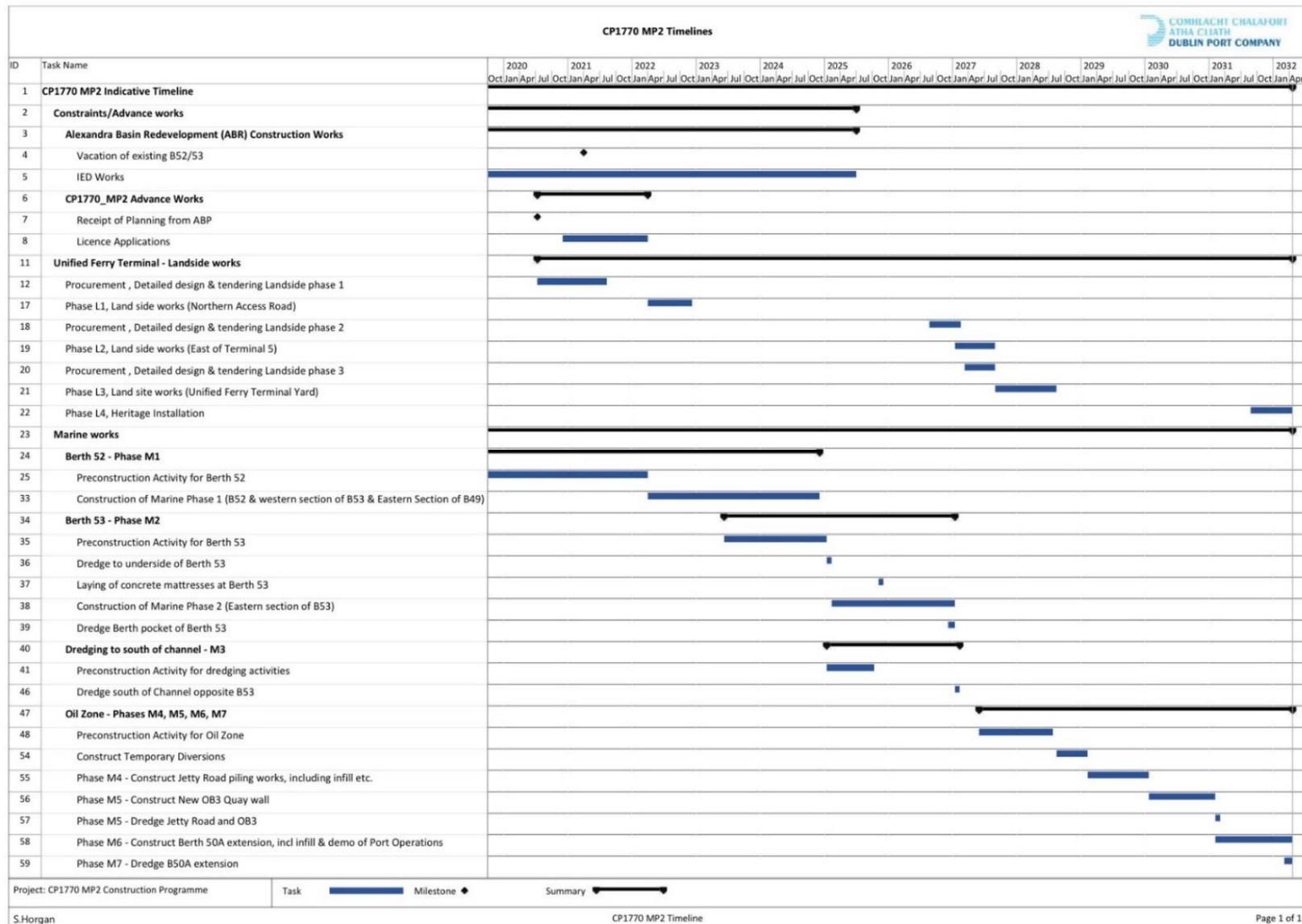


Figure 3-15 Construction Sequencing Programme

The construction sequence summary has been separated into two elements: land phases and marine phases.

Phase L1 – Northern Access Road

Phase L1 will take approximately 6 months to complete, commencing in Q1 2022 and comprises:

- Demolition of: Terminal 5 Shed 1, Terminal 5 Shed 2, ESB Substation 1; Works will involve the installation of below ground watermain, storm sewer, cabling and ducting for communication and electrical infrastructure. Works will involve excavation of relevant areas, installation of infrastructure and reinstatement of ground to required level and surface material. Construction of new access routes, including gantry signage and street lighting, to the north side of the site and tie in with the DPC internal road network.
- Gantry structures are proposed to direct traffic both to and within the UFT. The structures will be in line with existing galvanised steel gantry signage located within the port. Gantries will be supported on piled foundations.
- Additional High Mast and Street Lighting are proposed as part of the works. High Mast Lighting proposed for the new development is indicated within the project drawings. A piled foundation is proposed for High Mast Lighting with standard concrete gravity foundations proposed for regular street lighting.
- Construction of Toilet Block 3; Toilet blocks will be of traditional masonry construction with a lightweight timber roof. The ground below will be excavated, and a suitable stone base installed below a concrete raft foundation.)
- Installation of both check-in areas for future commissioning; The check in area is to be constructed of steel framed lightweight construction. The ground below will be excavated, and a stone base installed below a concrete raft foundation.
- Installation of gated access to the greenway at the north east corner of the site.

Phase M1 – Berth 52 / 49

Phase M1 will be 33 months, commencing at the same time as Phase L1 (Q1 2022). It is proposed to complete the filling of the basin, by the construction of a temporary rock armour causeway to the south of the basin. The rock armour causeway will seal the basin from the main navigation channel. The causeway will then be used as the construction platform for the commencement of Phase M1.

The following works in the water are proposed:

- Construction of cellular sheet pile wall (modification from ABP permission 29N.PA0034);
- Construction of steel pile combi-walls;
- Commencement of the installation of the piles and lower deck level to Berth 53.

The following works out of the water are proposed:

- Installation of linkspan structure;
- Installation of reinforced concrete deck;

- Installation of access structure to upper tier linkspan;
- Installation of services and jetty furniture.

Piling in the River Liffey Channel will not take place between March and May in order to avoid the main salmon smolt run. Piling on the land for the deadman (anchor) walls and rear of the cellular sheet pile structures may occur in this period.

Construction works will temporarily cease at Berth 53 during extreme low Spring Tides when bird feeding habitat becomes available within the SPA immediately northward of the works.

The construction of the steel sheet pile cellular wall will be the first section of the wall to be constructed. Plant will be positioned on the causeway and allow the craneage and piling of sheet piles.

When the sheet pile cellular wall has been completed, works will commence on the sheet pile combi wall to the east. This wall will require the installation of a deadman anchor wall to restrain the berthing wall in position. The anchor wall will be installed through the existing land. The combi wall will comprise tubular steel piles with steel sheet piles between the piles. Berth 53 – 406m long structure with vertical and raking piles; Berth 52 – 168m of cellular sheet pile wall, 204m of steel sheet pile combi wall (including for return walls at the linkspan); Berth 50A – 120m of steel sheet pile combi wall;

When the sheet piles have been installed, reinforced concrete panels will be installed as the berthing face to the sheet piles. These panels will be precast and lowered into position by crane.

Phase M2 – Berth 53

Phase M2 will be 24 months, commence in Q1 2025 after Phase M1 is completed. The new deck constructed for Berth 53/ Phase M1 will allow construction access to Berth 53.

The following works in the water are proposed:

- Dredging of berth pocket (to a standard depth of -10.0mCD) and side slopes and disposal at sea;
- Installation of slope stabilisation mattresses;
- Installation of vertical and raking piles for the jetty deck and dolphins;
- Installation of vertical piles for wash protection structure.

The following works out of the water are proposed:

- Construction of reinforced concrete decks;
- Construction of reinforced concrete dolphins;
- Installation of steel beams and precast concrete baffles for the wash protection structure;
- Installation of reinforced concrete maintenance access road;
- Installation of linkspan structure;
- Installation of access structure to upper tier linkspan;
- Installation of services and jetty furniture.

Construction works will temporarily cease at Berth 53 during extreme low Spring Tides when bird feeding habitat becomes available within the SPA immediately northward of the works.

The dredging works to Berth 53 will take place in advance of the main construction works to the berth. This material will be dredged using a trailer suction hopper dredge or equivalent. The dredge material will be loaded into barges and disposed of at a licensed sea disposal site. All capital dredging works will take place within the period October to March.

As the dredging progresses in an eastward direction, concrete mattresses will be installed on the dredge side slopes to stabilise the slopes. The mattresses will be manufactured off site and comprise articulated concrete blocks which will adapt to the shape of the dredge side slope. The dredging and mattress installation works will take approximately 2.5 months to complete and will be completed before the piling commences.

Piling works for the jetty structure at Berth 53 will commence at the west end, after the completion of Berth 52. The first number of piles will be installed from Berth 52. The majority of piles will require installation from barges.

The barges will be used to crane the hollow precast dolphin superstructures on the piles. When positioned on the piles, the precast superstructures will be filled with reinforced concrete. Precast concrete bridge beams will be installed from the barges. These will span between the dolphins. The precast bridge beams will also be filled with reinforced concrete, with voids being maintained for services. The spud leg barge will also be used for the installation of fenders and ladders.

Phase L2 – Eastern Access Road

Works at Phase L2 will take approximately 6 months to complete, commencing in Q1 2027, after the filling the basin and after Phase M2, i.e. Q1 2027. It will utilise the construction methodologies identified for similar facilities under Phase L1 and comprise the following:

- Demolition of: Terminal 5 Check In, Terminal 5 Building, Terminal 5 Shed 3; with associated installation of underground services and drainage and construction of new access routes, including gantry signage and street lighting, to the east side of the site;
- Construction of an at-grade car park with designated spaces and bus and car set down area;
- Construction of Toilet Block 1;
- Construction of ESB Substation;
- Installation of pedestrian underpass with ramp and stair access; The pedestrian underpass will be of precast concrete construction with the approach ramps and vertical circulation structures constructed of reinforced concrete. Piles will be installed, and existing material and piles will be excavated to a suitable formation level. A concrete slab / pile cap will be installed on the piles and the precast concrete underpass sections will be dropped into place above. The ground at the proposed approach ramps and stairs will be excavated with a stone base and concrete retaining walls and slabs installed to form the structure. Areas will be backfilled to finished level as the installation progresses;

Phase L3 – Unified Ferry Terminal Yard

Phase L3 will take approximately 12 months to complete, commencing in Q3 2027, and will be the final phase of works at the Unified Ferry Terminal Yard. Works to the State Services Yard will have been completed as part of the Interim Unified Ferry Terminal project before the commencement of Phase L3.

It will use similar methodologies to Phases L1 and L2 and comprise the following:

- Demolition of ESB Substation 2, Terminal 1 Check In, Terminal 2 Building, Terminal 2 Check In;
- Construction of Toilet Block 2;
- Installation of pavements in required areas (demolished buildings etc.);
- Regrading of levels at western edge of consented ABR infill;
- Installation of underground services and drainage;
- Installation of ISPS fencing; It is proposed to install a new security fence to define the edge of the ISPS Restricted Area at the perimeter of the UFT. The typical boundary proposed is a 4m high steel bar railing as indicated in the project drawings. The vertical steel posts are to be installed at regular centres in a concrete gravity foundation;
- Installation of road markings;
- Installation of High Mast Lighting;
- Connection to the L1 and L2 road networks;
- Internal upgrade works to the existing Terminal 1 Building; The existing Passenger Terminal 1 Building will be utilised as the Unified Ferry Terminal Building to facilitate foot passenger check in and provide facilities for those in accompanied units awaiting departure. The building already has facilities for State Services to inspect foot passengers;

Phase M3 – Channel Widening Works

Phase M3 works will comprise the dredging and disposal at sea of seabed from the Liffey Channel and will take place post Phase L1 but pre-Phases L2, L3 and L4. The dredging works will be carried out over one dumping at sea season with a programme of 1 month, commencing in Q1 2027. The works will be carried out after the dredging of Phase M2, but during the M2 primary jetty construction works. All capital dredging works will take place within the period October and March. The dredge material will be loaded into barges and disposed of to a licensed sea disposal site. There will also be a requirement for a back-hoe dredger on site to carry out the finer elements of the dredging works. Material will be loaded into a hopper barge and disposed of at the licenced sea disposal site. The dredging will proceed from north to south, with the dredger working in a west to east direction

Ancillary dredging vessels such as a survey vessel, work boats and a bed leveller shall be required throughout the dredging activities. These vessels will be similar to vessels currently operating day-to-day at the port.

Phase M4 – Jetty Road

Phase M4 will take approximately 12 months to construct, commencing in Q1 2029, after the completion of Phase M3. In advance of Phase M4 commencing, the bitumen importation pipelines will be relocated to Oil Berth 1 and 2. The gas importation pipelines will remain in operation. No works will be permitted when vessels are berthed. Phase M4 will comprise the construction of a new sheet pile combi wall at the jetty road. This element of the works. The following works in the water are proposed:

- Installation of sheet pile combi-walls; a jack-up barge and spud leg barge will be mobilised to site for the installation of the steel sheet pile combi wall. Steel sheet piles will be vibrated/driven between adjacent tubular steel piles;
- Filling of the void between the existing wall at the Jetty Road and the proposed new wall with engineering fill;
- Filling of void between Oil Berth 4 and revetment with engineering fill;

The following works out of the water are proposed:

- Temporary diversion of the existing bitumen importation pipes;
- Installation of a temporary frame to support the existing gantry;
- Installation of sheet pile anchor walls;
- Installation of ground anchors;
- Construction of reinforced concrete decks;
- Installation of services and jetty furniture.

Phase M5 – Oil Berth 3

Phase M5 will commence in Q1 2030, and last approximately 12 months, with the dredging work a further one month commencing in Q1 2031. Phase M5 will commence after Phase M4 is completed and will comprise the construction of a new steel combi sheet pile wall at Oil Berth 3. The following works in the water are proposed:

- Installation of sheet pile combi-walls (using similar methodologies to Phase M4);
- Filling of void between existing wall at Oil Berth 3 and the proposed new wall with engineering fill;
- Filling of void between Oil Berth 4 and revetment with engineering fill;
- Dredging to a standard depth of -13.0m CD and side slope and disposal at sea;

The following works out of the water are proposed:

- Temporary diversion of the existing bitumen importation pipes;
- Installation of a temporary frame to support the existing gantry;
- Removal of existing deck beams which span the concrete caissons;
- Installation of sheet pile anchor walls;

- Installation of steel bearing piles for the future crane rails;
- Construction of reinforced concrete decks;
- Installation of services and jetty furniture.

Phase M6 – Berth 50A

Phase M6 will commence after Phase M5 is completed and comprise the construction of a new sheet pile to the west end of Berth 50A. The primary construction works will last approximately 15 months, commencing in Q1 2031. The following works in the water are proposed:

- Excavation of Pier Head at the Eastern Breakwater. All masonry units will be recorded and re-used as part of a heritage installation at the port (Phase L4). The made ground will be excavated and disposed of at a suitably licenced site;
- Excavation of the south end of the existing Oil Berth 3/4 jetty;
- Installation of sheet pile combi-walls walls;
- Fill of void between existing wall at Oil Berth 3 and the proposed new wall with engineering fill;
- Filling of void between Oil Berth 4 and revetment with engineering fill;
- Installation of ESB 220kV feeder cable bridging structure;

The following works out of the water are proposed:

- Demolition of the Port Operations Building;
- Installation of a temporary frame to support the existing gantry;
- Installation of sheet pile anchor walls;
- Installation of steel bearing piles for the future crane rails;
- Construction of reinforced concrete decks;
- Installation of services and jetty furniture;

Piling in the River Liffey Channel will not take place between March and May in order to avoid the main salmon smolt run. Piling on the land for the deadman (anchor) walls and piling through the existing Eastern Breakwater may occur in this period. To limit the works in the water, it is proposed to install the steel sheet pile combi wall from the existing eastern breakwater. When the piles are installed, excavation of the existing eastern breakwater can commence. The existing granite structure will be recorded and moved to the proposed heritage installation location.

ESB cable ducts pass under the existing Eastern Breakwater. It is proposed to keep these cables in position during the works, and the ducts will be facilitated in the construction of the wall.

Phase L4 – Heritage Installation

Phase L4 will commence in Q3 2031, mid-way through Phase M6, and take 9 months to complete. The works will comprise the construction of the heritage zone incorporating the masonry blocks recovered during Phase

M6 and the installation of the heritage structures. Its main components, comprising the 'Marker' and access bridge, will be fabricated off-site. These components will be transported and assembled on site. These elements will require precast concrete piled foundations which will be installed using the same construction techniques as the landside structures (High Mast Lighting). The other public realm elements will be built using conventional construction techniques.

Phase M7 – Dredging of Berth 50A

Phase M7 will commence in Q1 2032, upon completion of Phase M6. The works will take one month to complete. Phase M7 will comprise the dredging in front of the existing Berth 50A to a standard depth of -11.0m CD and disposal at sea of the material.

Source of Fill Material

Suitable infill material (crushed rock) will be sourced from authorised quarries and shall be imported by road to fill the void at Oil Berth 4, and to fill the voids behind the proposed structures at Jetty Road and Berth 52. This material will be sourced locally within the region.

The anticipated volumes and type of fill material required to meet the design ground levels for Dublin Port lands are set out as follows:

Phase M1 (Berth 52): Circa 143,357m³ of imported material will be required. Of this, 121,374m³ has been consented (ABP Ref No.29N.PA0034). A net increase of 21,982m³ of imported fill material will be required (equating to circa 39,567T based on a conversion of 1.8T/m³).

Phase M4 (Jetty Road): Circa 3,600m³ of imported fill material (equating to circa 6,480T based on a conversion of 1.8T/m³)

Phase M5 (Oil Berth 3): Circa 145,000m³ of imported fill material (equating to circa 261,000T based on a conversion of 1.8T/m³).

Working Hours

Where construction activity takes place for the redevelopment in the vicinity of residential properties, the activities will operate between the hours of 08:00 and 18:00 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 Dublin City Council. Capital Dredging works are remote from residential properties and will be undertaken on 24 hour / 7 days per week basis.

Construction Traffic

Construction traffic will arrive and depart the port via the national road network. All HGV movements will be in compliance with the Dublin City Council HGV Management Strategy. Within the Dublin Port Estate, traffic will be routed through the existing road network to reach the proposed MP2 Project site boundary. Traffic within the proposed site will be diverted in a phased manner to ensure the existing facilities at Terminal 1 and Terminal 2 remain operational with minimal impact.

The Sequencing Programme for the MP2 Project has been used to determine the future construction traffic on the road network.

Site Compounds

Separate compounds will be used for different phases of the works. The compounds have been sized to accommodate welfare facilities, site offices and parking, construction plant storage, and materials storage. Each compound is located in or immediately adjacent to the relevant works phase, such as to cause minimal interference to general port operations. Compounds are not required for Phase M3 & M7 as works will be carried out by dredging plant.

Construction Environmental Protection Measures

Effects during construction can often be more significant than those which arise during the operational life of the project, as is the case for the MP2 Project.

A series of construction environmental protection measures for the MP2 Project were 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. The preparation of the environmental appraisals was guided by the requirements of EU Directives and Irish law regarding Environmental Impact Assessment (including the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018) and 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).

Detailed scoping was undertaken in respect to the MP2 Project in accordance with the European Commission's 2017 "Environmental Impact Assessment of Projects Guidance on Scoping" and the EPA's Environmental Impact Assessment Reports, Draft Guidelines (August 2017). The scoping of the MP2 Project greatly benefitted from the environmental monitoring programme which is currently in place for the construction of the ABR Project. The site-specific scientific data collected to date has been used to support the preparation of the EIAR and NIS for the MP2 Project and facilitates a depth of understanding of the environment in and around Dublin Port including the inner Liffey channel and Dublin Bay. The scope of the MP2 Project was further considered in the context of the extensive environmental datasets collated during the preparation of the Strategic Environmental Assessment (SEA) which complemented the review of the Dublin Port Masterplan during 2017 and 2018.

Above all, the extensive consultation process undertaken during both the review of the Dublin Port Masterplan and specifically for the MP2 Project provided a sound basis for confirming the key issues to be addressed, the extent of the environmental appraisals required, and the level to which these issues needed to be addressed.

Following the scoping process, all environmental topics have been comprehensively addressed within the EIAR including:

- Examination of Alternatives
- Risk of Major Accidents
- Biodiversity, Flora and Fauna
- Soils, Geology and Hydrogeology
- Water Quality and Flood Risk

- Noise & Vibration
- Material Assets – Coastal Processes
- Material Assets – Traffic and Transportation
- Archaeology and Cultural Heritage
- The Landscape and Visual Impacts
- Population and Human Health
- Waste
- Cumulative Effects

Once the key issues were identified, baseline studies/surveys were carried out. The studies enable the prediction of the likely environmental impacts arising from the MP2 Project. These impacts are evaluated in terms of their significance, nature and magnitude.

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.

A prime example is the construction of Berth 53. This has been a key environmental consideration due to its close proximity to the South Dublin and Tolka Estuary SPA and its potential impact on views, notably from Clontarf.

Berth 53 will demarcate the most easterly development of the Dublin Port Estate. Its development will eliminate the requirement for future land reclamation within the Tolka Estuary.

Berth 53 has been designed as an open-piled structure whose footprint lies outside the boundary of the SPA. The design minimises the impact of the structure on the natural tidal flows between the Liffey channel and the Tolka estuary. As a result, there will be no significant change to the coastal processes including the morphology of the Tolka estuary. Potential changes to the feeding grounds of waterbirds at extreme low spring tides are therefore expected to be *de minimis*.

The potential impact on the SPA as a result of dredging the berthing pocket and approach channel to Berth 53 together with the use of bow thrusters used to manoeuvre vessel's to and from the berth have also been considered. Mitigation by engineering design has again been used to prevent changes to the morphology of the Tolka estuary including the use of mattresses on the side slopes of the berthing pocket to provide additional bank stability and a wash protection structure attached to the underside of the jetty to reduce flow rates arising from the bow thrusters and thereby prevent scouring.

Berth 53 has also been designed to minimise disturbance to feeding waterbirds. Visual screens have been incorporated into the design of the jetty structure and the functionality of the berth has been reduced.

Mitigation by avoidance has also been used, where possible.

Examples of mitigation by avoidance include restricting capital dredging to the winter seasons (October to March) to avoid disturbance of nesting terns and prohibiting riverside piling activity between March and May to avoid the main salmon smolt run within the River Liffey.

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 MP2 Project.

These include a range of noise, dust and construction traffic mitigation measures to minimise nuisance to neighbouring communities during construction.

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). Notably 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.

Chapter 19 of the EIAR sets out all of the mitigation measures and monitoring programmes which will be implemented during the construction phase of the MP2 Project.

Construction Environmental Management

The MP2 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 MP2 Project and forms part of the application for permission (under separate cover).

Operational Phase

The key objective of the MP2 Project is to increase the throughput of cargo and passengers 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 operations, processes and activities (regular and occasional) proposed by the MP2 Project.

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

Maintenance

During the operational stage, maintenance of the quay/jetty structures will be minimal. Some maintenance of fenders, bollards, link spans and service infrastructure may be required. Maintenance access will be carried out from the deck of the structure.

There will be a requirement for maintenance dredging to be carried out within the berthing pockets and channel area. Future maintenance dredging will be subject to consents required by the Environmental Protection Agency (EPA) and the Department of Housing, Planning and Local Government (DHPLG).

Pollution Control

Storm Water

There is limited additional hardstanding area proposed as part of the project. At Berth 53 it is proposed to collect storm water from the new hardstanding areas in a closed system and discharge via a new silt trap and oil interceptor/separator to the local storm water drainage network (which is consented under the ABR Project). The consented ABR Project storm drainage network ultimately discharges to the sea at Berth 52 via a flap valve (or similar) in the quay wall. Minor modifications will be made to the drainage consented under the ABR Project to facilitate the Berth 52 realignment.

Rainfall on the new hardstanding at the infilled basin at Oil Berth 4 will be collected by a series of gullies and drains. The new network will be routed through new silt traps and oil interceptors/separators before discharge to the sea at the new quay wall.

Wastewater

A gravity sewer is proposed to link the proposed toilet blocks to the existing gravity sewer serving Terminal 5 (which is to be demolished). The existing toilet provision at Terminal 1 Building is considered adequate for the proposed use. The existing network servicing the unified ferry terminal discharges via a series of gravity sewers and pumping stations to the main public foul network outside the Dublin Port Estate. It is not anticipated that there will be any increase in the peak wastewater discharge to the public sewer as a result of the development.

Waste Disposal from Vessels

All waste from berthed vessels will be disposed of in accordance with the Dublin Port Ship's Waste Management Plan. The storage of waste at the berth will not be permitted. Waste will be collected directly by a licensed waste disposal contractor. Disposal from vessels directly into the water at the berth, Liffey Channel, or Dublin Bay is strictly prohibited.

Ship to Shore Power

Ship to Shore Power facilities are provided for vessels on Berth 52 and Berth 53 to provide required hoteling load for vessels. This will allow engines to be turned off when vessels are berthed.

Navigation

Vessel Speed Limit

The development will not impact upon the navigation speed limit enforceable within the harbour.

Navigation Charts

The proposed development will require updating of the appropriate navigation charts for the area. This will be done through consultation with the United Kingdom Hydrographic Office.

Radar and GPS

Impacts on radar are not envisaged. Global Positioning System navigation charts will be updated based on updates to Navigation Charts.

VHF & Communication

Impacts on VHF radio and other communication systems are not envisaged.

Marine Notices

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

Vessel Manoeuvring

The dredging works will improve navigability on the approach to Dublin Port.

Description of the risk of accidents having regard to substances and technologies used

The risk of accidents can arise during both the construction and operational stages of the project. There are no substances or technologies being proposed are not considered 'normal' either by the construction industry or by Port operations.

The risk of accidents and mitigation measures considered to reduce the potential for risk has been considered and is presented under the assessment of each environmental variable assessed in this EIAR.

Project change and decommissioning

Following completion of the construction phase of the works, temporary works required to facilitate the construction of the permanent works will be removed from site. The temporary works include the use of large items such as marine jack-up barges and pile guides which will be dismantled and removed from site by sea and road respectively. Temporary works requiring the use of temporary piles have been designed to be incorporated into the permanent works, negating the need to remove them.

There are no plans proposed for the decommissioning of the permanent marine elements of the MP2 Project given the nature of the Port development which can be considered as 'permanent works'.

The landside elements of the unified ferry terminal aspect of the MP2 Project have been designed to allow maximum flexibility because its use will be a function of customer requirements which may change over time (accompanied Ro-Ro versus unaccompanied Ro-Ro versus passenger vehicles). Flexibility is also required as a result of the uncertainty of land requirements by the State Agencies as a result of Brexit. To provide this flexibility the proposed landside structures have been limited to entrance booths, signage gantries, lighting, toilet blocks, pedestrian underpass, substation, fencing and other works required for the safe movement of freight and passengers. Any changes to the landside layout which may be required, including the decommissioning of signage gantries, will be the subject of subsequent planning consent and appropriate mitigation can be applied to those consents.

Other related projects and potential for ex-situ effects

Planning history relevant to the MP2 Project is outlined below with the approximate location of each planning reference illustrated on Figure 3-16.

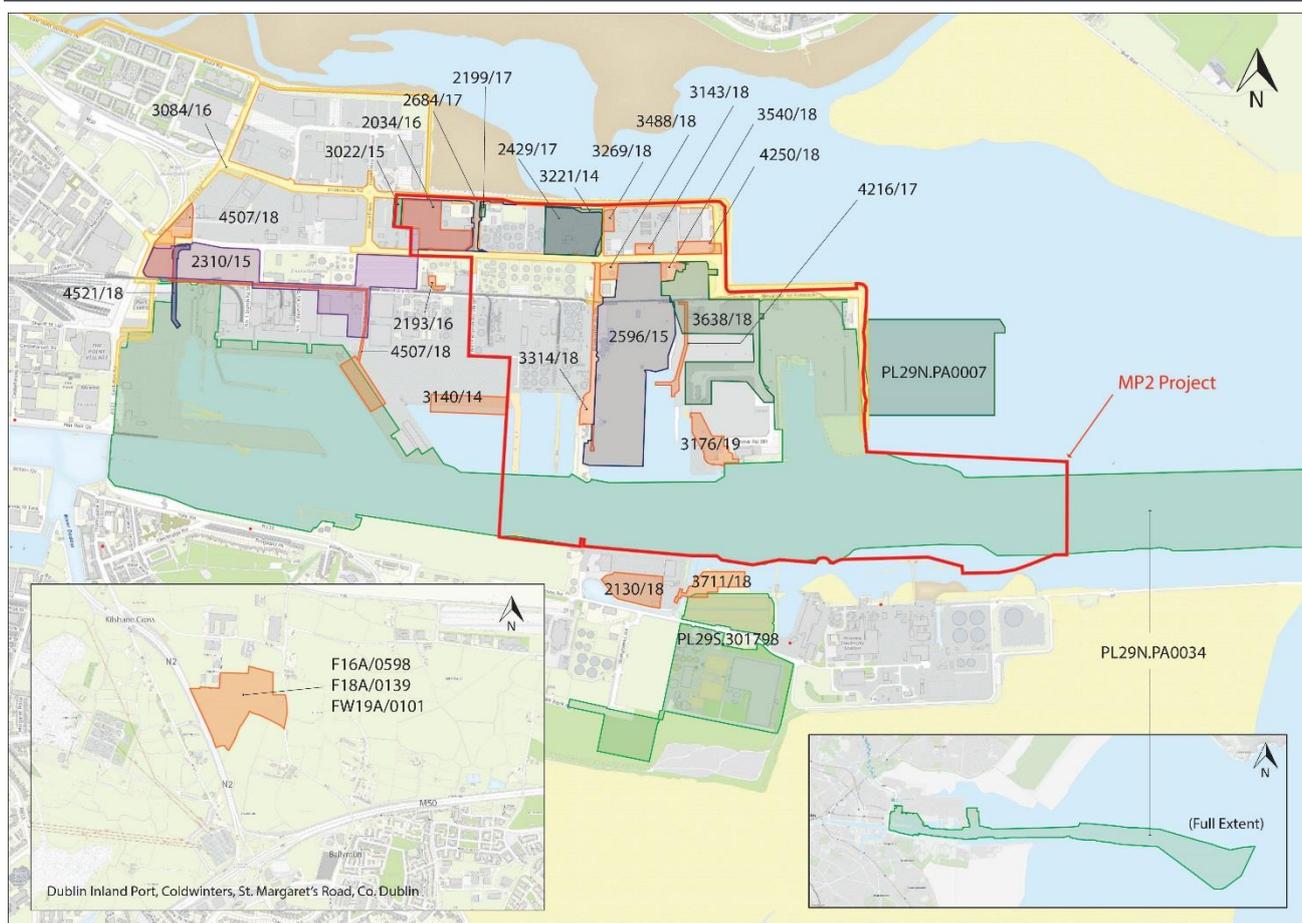


Figure 3-16 Planning History Relevant to the MP2 Project

The following projects were considered in relation to the proposed development:

- Dublin Gateway Project – PL29N.PA0007
- Alexandra Basin Redevelopment - PL29N.PA0034
- Topaz – Reg. Ref. 3221/14
- 1 Branch Road North – Reg. Ref. 2310/15
- Vehicular and Pedestrian Entrances off Breakwater Road South - Reg. Ref. 2596/15
- Promenade Road – Reg. Ref. 3022/15
- 2 Branch Road North - Reg. Ref. 2034/16
- Dublin Port Internal Road Network – Reg. Ref. 3084/16
- Tedcastle Operations building and Substation - Reg. Ref. 2199/17
- Demolition of buildings and Provision of Yard - Reg. Ref. 2429/17
- Floating Dock Section - Reg. Ref. 4216/17
- Vehicle service/maintenance facility and office accommodation - Reg. Ref. 3143/18
- Calor Office Site - Reg. Ref. 3540/18

- Dublin Ferryport Terminals Access - Reg. Ref. 3314/18
- Demolition of Calor Offices and Provision of Yard - Reg. Ref. 3540/18
- Yard Upgrade - Reg. Ref. 3269/18
- Asahi Demolition and Provision of Yard - Reg. Ref. 3488/18
- Interim Unified Passenger Terminal - Reg. Ref. 3638/18
- ESB Substation Demolition and Construction - Reg. Ref. 4250/18
- Berth 49 Approach and Ramp - Reg. Ref. 3176/19

Developments in the Surrounding Area were also considered:

- Ship to Shore Gantry - Reg. Ref. 3140/14
- Lagan Bitumen site – Reg. Ref. 2193/16
- Pigeon House Road- Reg. Ref. 2130/18
- Ringsend Wastewater Treatment Plant – PL 29S.301798
- Cruise Ship Turnaround Facilities - Reg. Ref. 4507/18
- Terminal 4 Bridge - Reg. Ref. 4521/18
- Berth 47A Pigeon House Road- Reg. Ref. 3711/18
- Dublin Inland Port – Reg Refs. F16A/0598, F18A/0139 and FW19A/101

The potential for cumulative impact and interaction with these projects has been assessed under each environmental topic presented in this EIAR.

Of particular note, the phasing of the proposed MP2 Project construction programme took into account the ongoing construction programme associated with the Alexandra Basin Redevelopment (ABR) Project.

Planning Order - SI 57 of 2019

In February 2019, the Minister for Public Expenditure and Reform, in advance of the impending withdrawal and/or the withdrawal of the United Kingdom from the European Union on 29th March 2019, made the Planning and Development Act 2000, Section 181(2)(a) Order No. 1, 2019 [S.I. No. 57 of 2019]. Pursuant to that Order, the provisions of the Planning and Development Act 2000, and the provisions of Part 9 of the Planning and Development Regulations, 2001 shall not apply to the development being carried out on behalf of the Minister by the Office of Public Works.

The locations and descriptions of the development are set out in the schedule included within the order. The order relates to development on the following sites:

- Former Crosbie's Yard at Crosbies Yard, Tolka Quay Road, Dublin Port, Dublin 1, DO1 K7T3.
- Former Storecon site at Tolka Quay Road (site bounded by 1 Branch Road South to the east and by Promenade Road to the north), Dublin Port, Dublin 1, DO1 AH31.

Both of these sites are located within the application boundary for the proposed MP2 development. It should be noted that the MP2 Project does not encompass or propose development at the former Crosbie's Yard site, however, temporary works are proposed at the Former Storecon site, i.e., those lands are proposed to be used as a temporary construction compound when the site is not occupied by the Office of Public Works.

4 ASSESSMENT OF ALTERNATIVES

The section summarises how the Project evolved by considering alternatives at strategic and project level. Assessment of reasonable alternatives is mandatory under the EIA Directive. The process allows for adjustment to minimise environmental impact thus minimising project significant effects on the environment.

Alternatives are different ways of carrying out the Project in order to meet its agreed objective and there are a range of types of alternatives in relation to a Project:

- Design;
- Technology;
- Location;
- Size; and
- Scale.

The detailed assessment of alternatives, presented Chapter 4 of the EIAR, was carried out in accordance with the following guidance documents:

- The EU Commission's 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)
- The EPA's Advice notes on Current Practice (in the preparation of Environmental Impact Statements) and The Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIARs) (EPA, 2017)
- The Department of Housing, Planning and Local Government Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment August 2018.

The assessment process addresses 13 key issues identified in the EU Commission's Guidance:

1. Alternatives suggested during scoping

The alternatives suggested during scoping came from Dublin Port's Masterplan, as reviewed in 2018 and have been considered at a plan / strategic level.

The strategic assessment of alternatives considered at Masterplan level was conducted in accordance with the pertinent SEA Directive and its supporting guidance. This level of assessment addressed reasonable and feasible alternatives mainly with regard to the location, size and scale of these alternatives.

The selected strategic alternative (Option 2), incorporates an MP2 Project which implements the reviewed Masterplan's fundamental approach of providing capacity in Dublin Port for the 77.2m gross tonnes projected by 2040 by maximising the utilisation of Dublin Port's brownfield lands and new additional inland Port facilities (rather than seeking to expand eastwards into Dublin Bay).

The assessment process, in support of the Masterplan review, identified that this is the most feasible and reasonable approach, and therefore the most sustainable approach.

The primary reason for the decision to select this alternative over the original Masterplan is the avoidance of direct adverse significant environmental impact on the designated SPA within the Tolka Estuary.

2. Additional Alternatives (developed at project level)

Additional alternatives have emerged at detailed, technical level, in the design stage evolution of the MP2 Project.

The assessment of these detailed alternatives considers primarily the design and technology alternatives and variants with due regard to their location, size and scale.

Additional alternatives for each of the Masterplan's key infrastructure elements were considered and, where appropriate, assessed:

- Construction of a new Ro-Ro jetty (Berth 53); the evolution of this element was strongly influenced by environmental matters. Four progressions evolved with alteration to the jetty's Design; Technology; Location; Size; and Scale and incorporation of environmental mitigation.
- Reorientation / minor modification of the already consented Berths 52 / 49; seven reorientation options were developed to accommodate operational improvement of this pre-consented element and a wall added to encompass the dolphins at Berth 49.
- Lengthening of an existing river berth (50A); one progression emerged with no environmentally better construction or operational alternative given the conventional nature of this element.
- Infilling of Oil Berth 4 and redeveloping Oil Berth 3; one progression emerged with no environmentally better construction or operational alternative given the conventional nature of this element.
- Landside works; nine options emerged (within four design layouts for the buildings: original, new, removal and maximised). These accommodated operational improvements with no environmentally better construction or operational alternative given the conventional nature of this element.
- Channel widening to the south of the Liffey Channel; the evolution of this element was strongly influenced by environmental matters. Four progressions evolved with alteration to the area's Design; Location; Size; and Scale and incorporation of environmental mitigation.
- Dredging and Disposal/Re-use/Activities; the sizing, scale and location of these works originate from navigational and design studies and their environmental progressions. Further alternative technologies for the associated disposal and re-use options of the dredged marine sediments were considered including: Beneficial Re-use; Disposal on Land; Incineration; and Disposal at Sea. One progression emerged, with a combination of technologies and incorporation of environmental mitigation.
- Piling Activities; the sizing, scale and location of these works originate from navigational and design studies and their environmental progressions. The further alternatives assessment considered materials and technologies in parallel as they interact and are dictated by the site ground conditions. Alternatives were examined including: do-nothing; alternative materials and associated alternative technologies, with different associated construction forms (such as concrete piles and gravity walls). One progression emerged, with a combination of technologies and incorporation of environmental mitigation.

3. Project development process

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 informed by environmental expert inputs, navigation simulation and morphological modelling to refine the design layouts.

The various design iterations were informed by a number of key factors such as:

- Compliance with project brief;
- Location of element;
- Scale and size;
- Form of construction;
- Construction methodology;
- Project phasing;
- Environmental impacts;
- Operational impacts (Land & marine).

For each scheme element, a summary of the predicted environmental effects of each option was presented. The do-nothing option was included for comparison against every progression that emerged from environmental matters. The final design was summarised in terms of its positive and negative environmental impacts, highlighting the environmental considerations that influenced the final design selection.

4. Alternatives to the design

As summarised in step 2, alternatives to the design strongly influenced the design evolution of the construction of a new Ro-Ro jetty (Berth 53) and the inter-related channel widening to the south of the Liffey Channel.

5. Alternatives to technology

As summarised in step 2, alternatives technologies strongly influenced the design evolution of the construction of a new Ro-Ro jetty (Berth 53) and the inter-related Disposal/Re-use Activities/Piling Activities.

6. Alternatives to the location

As summarised in step 2, alternatives to location strongly influenced the design evolution of the construction of a new Ro-Ro jetty (Berth 53) and the inter-related channel widening to the south of the Liffey Channel.

7. Alternatives to the size

As summarised in step 2, alternatives to size strongly influenced the design evolution of the construction of a new Ro-Ro jetty (Berth 53) and the inter-related channel widening to the south of the Liffey Channel.

8. Alternatives to the scale

As summarised in step 2, alternatives to scale strongly influenced the design evolution of the construction of a new Ro-Ro jetty (Berth 53) and the inter-related channel widening to the south of the Liffey Channel.

9. Baseline situation (the 'do-nothing' scenario)

As summarised in step 3, the baseline situation (or do-nothing scenario) was included for every scheme element. The summary of Predicted Impacts considered each environmental topic in turn. This allowed the baseline's comparison, in terms of its positive and negative environmental impacts, against every progression that emerged from environmental matters.

10. Realistic Alternatives that meet the objectives

As summarised in steps 2 and 3, a number of realistic alternatives for key elements were identified and the environmental impacts of each progression was considered. The final design for each element was summarised in terms of its positive and negative environmental impacts, highlighting the environmental considerations that influenced the final design selection.

11. Main reasons for choosing the proposed Project

The main reasons for the proposed Project elements are summarised as follows:

- The final design of Berth 53 has been developed via an iterative process, considering a wide range of environmental matters. A comparison of the environmental effects of the alternatives considered, indicates that Design Progression Four is the most sustainable option available and has thus been chosen as the final design. Design Progression Four has been selected as the preferred alternative as it has the least significant impact upon sediment movement, thus resulting in no significant change to the nearby low-tide bird feeding area of the SPA, and its dependent bird populations.
- The optimum design solution for Berth 52 / 49 was determined through an iterative design process. It was selected by way of consideration of the impacts of the design upon the position of Berth 53, and the subsequent (lack of) effects of this upon the bathymetry of the South Dublin Bay and Tolka Estuary SPA, also with reference to navigation simulation modelling to achieve optimum navigation safety. The final design is thus the optimal design solution; being both technically feasible (with optimal operational safety in mind) and environmentally sustainable (no impact upon environmental factors; particularly with regard to protected bird species).
- The final design for the redevelopment of Berth 50-A was chosen as opposed to the do-nothing scenario. Whilst some of the potential environmental effects of this alternative are comparatively less favourable than those associated with do nothing scenario, the positive long-term impacts of this development upon the economy; particularly with regard to the creation of jobs and the prosperity of the region through trade, tax and other investment, is the principle reason for this decision. The negative environmental effects of the redevelopment of Berth 50-A can be mitigated.
- The repurposing of Oil Berths 3 and 4 was chosen instead of the do-nothing scenario. Whilst some of the potential environmental effects of this alternative are comparatively less favourable than those associated with do nothing scenario, the positive long-term impacts of this development upon the economy; particularly with regard to the creation of jobs and the prosperity of the region through trade, tax and other investment, is the principle reason for this decision. The negative environmental effects of the redevelopment can be mitigated.

- The development of the Unified Ferry Terminal was chosen instead of the do-nothing scenario. For the most part, the potential environmental effects of this choice are comparatively less favourable. However, the long-term impact of this development upon the economy; particularly with regard to the creation of jobs and the prosperity of the region through trade, tax and other investment is the principle reason for this decision. The negative environmental effects of the redevelopment can be mitigated.
- The development of the Channel Widening option was chosen instead of the do-nothing scenario. Design Progression Four has been chosen as the final design for the manoeuvring area owing to its lesser potential to impact upon protected bird species and their habitats as a result of the design's lesser potential impact upon coastal processes, and also the lesser potential impact on cultural heritage due to the mitigation impingement on the protected Great South Wall.
- The further assessment of alternatives to the associated disposal at sea/re-use of dredged materials identified one suitable option, disposal at sea in combination with Environmental Enhancement - Sediment Cell Maintenance technology, at the licenced offshore disposal site located at the approaches to Dublin Bay to the west of the Burford Bank. This option has been incorporated into the design of the MP2 Project owing to the absence of technically feasible alternatives. There are no environmental effects of this alternative.
- The piling works further alternatives assessment selected tubular sheet piles (open jetty structures and crane rails), with Steel Sheet Pile Combi-Walls (closed jetties and quay walls). A combination of vibrodriving and impact driving methods was selected. Landside structures and buildings utilise conventional driven pile foundations and raft foundations. This option has been incorporated into the design of the MP2 Project owing to the absence of technically feasible alternatives. The negative environmental effects of the piling works can be mitigated.

12. Main environmental effects of the Alternatives

For all key elements the assessment concluded that some of the environmental effects of the final design are comparatively less favourable than those associated with do-nothing scenario. However, the positive long-term impacts upon the economy; particularly with regard to the creation of jobs and the prosperity of the region through trade, tax and other investment, is the principle reason to justify progressing with this development. Negative environmental effects can be mitigated with good construction and operation practice.

The four main environmental considerations are summarised as follows:

- The construction of Berth 53 has been a key environmental consideration due to its close proximity to the South Dublin and Tolka Estuary SPA and its potential impact on views, notably from Clontarf.

Berth 53 will demarcate the most easterly development of the Dublin Port Estate. Its development will eliminate the requirement for future land reclamation within the Tolka Estuary.

A combination of detailed baseline surveys, computational modelling studies, consultation with statutory bodies including Dublin City Council and National Parks & Wildlife Service, consultation with local community groups and the general public, interaction between the DPC engineering design team and planning & environmental team has resulted in a design evolution of Berth 53 which satisfies the key environmental constraints identified during the scoping and consultation phase of the MP2 Project.

Berth 53 has been designed as an open-piled structure whose footprint lies outside the boundary of the SPA. The design minimises the impact of the structure on the natural tidal flows between the Liffey channel and the Tolka estuary. As a result, there will be no significant change to the coastal processes including the morphology of the Tolka estuary. Potential changes to the feeding grounds of waterbirds at extreme low spring tides are therefore expected to *de minimis*.

The potential impact on the SPA as a result of dredging the berthing pocket and approach channel to Berth 53 together with the use of bow thrusters used to manoeuvre vessel's to and from the berth have also been considered. Mitigation by engineering design has been used to prevent changes to the morphology of the Tolka estuary including the use of mattresses on the side slopes of the berthing pocket to provide additional bank stability and wash protection structures attached to the open piled structure to reduce flow rates arising from the bow thrusters and thereby prevent scouring.

Berth 53 has also been designed to minimise disturbance to feeding waterbirds. Screens have been incorporated into the design of the jetty structure and the functionality of the berth has been reduced whereby passengers will be directly transferred to the vessel for embarkation by coach. Gates will also be operated on the Greenway to prevent its use during periods of extreme low spring tides when feeding grounds in the vicinity of Berth 53 become available. Appropriate signage will be used to explain to the public the importance of this mitigation measure to the protection of the Tolka estuary's bird life.

The length of Berth 53 has been designed to be kept as short as possible to both minimise its impact on the morphology of the Tolka estuary and minimise its impact on views from Clontarf, the North Bull Wall and the Great South Wall. Activities on the jetty will be restricted to vessel berthing; the movement of Ro-Ro traffic and passengers to and from the berthed vessel via a linkspan located at the root of the jetty; and maintenance purposes.

- The potential impact on the Great South Wall has been a key environmental consideration due to its status as both a Protected Structure and Monument and its amenity value to the people of Dublin.

The original design of the MP2 Project included a manoeuvring area for vessels to turn in close proximity to the proposed berths at the eastern end of the Dublin Port Estate. To avoid encroachment into the South Dublin & Tolka Estuary SPA, the manoeuvring area was designed to include an area of foreshore directly to the north of the Great South Wall.

Consultation with the Department of Culture, Heritage & Gaeltacht and Dublin City Council confirmed the importance of the Great South Wall and the range of studies which would need to be undertaken to demonstrate that the construction and operation of the MP2 Project would have no impact on the integrity of the Great South Wall.

Subsequent studies, including the potential impact of vessel's using bow thrusters whilst turning and moving forward into the navigation channel found that engineering intervention measures between the manoeuvring area and the Great South Wall would be required to safeguard the integrity of the Great South Wall. To eliminate this potential risk, in the absence of an over-arching Heritage Plan for the Great South Wall, DPC decided to remove the manoeuvring area from the scope of the MP2 Project. This resulted in an alternative design comprising limited channel widening to the east of the Poolbeg Oil Jetty.

The alternative design safeguards the integrity and stability of the Great South Wall. No impacts are proposed.

- The proposal for a Unified Ferry Terminal within the footprint of the MP2 Project has been a key environmental consideration due to the Health & Safety implications of drawing passengers into an area in close proximity to existing COMAH sites.

The original design of the MP2 Project included the design of a new Unified Ferry Terminal Building and multi-storey carpark in close vicinity to the existing Calor Gas COMAH site. Consultations with the Health & Safety Authority with respect to the potential risk of major accidents determined that the proposed site of the Unified Ferry Terminal and multi-storey carpark was not suitable from a health & safety perspective. DPC therefore decided to remove the Unified Ferry Terminal and multi-storey carpark from the scope of the MP2 Project. This resulted in an alternative design comprising the demolition of the Terminal 2 and 5 buildings and the use of the existing Terminal 1 building as a Unified Terminal Building. Terminal use studies confirmed the suitability of the existing Terminal 1 Building for this use.

This change to the proposed design of the terminal buildings also assisted in maximising the flexibility required for the operational use of the MP2 Project land area in order to accommodate potential future changes as a result of a potential hard Brexit.

- The construction of Berth 50-A and Oil Berth 3 has been a key environmental consideration due to the required demolition of the 19th Century Pier Head of the Eastern Breakwater of Alexandra Basin which marked the most easterly extent of Dublin Port within that era. The construction methodology of the Pier Head is of particular cultural heritage interest being designed by Port Engineer, Bindon Blood Stoney.

Extensive consultation was undertaken with the Department of Culture, Heritage & Gaeltacht and Dublin City Council with regard to the archaeological recording of the Pier Head and the opportunity to recover exemplars of Bindon Blood Stoney's work, and to understand more fully the construction process developed to create the 19th Century deep water basin.

Heritage gain proposals were also discussed in detail with the Department of Culture, Heritage & Gaeltacht and Dublin City Council. DPC will create a public realm visitor experience at the new eastern limit of the Dublin Port Estate that includes the re-use of the granite blocks and related elements of the Eastern Breakwater Pier Head and the Breakwater Lighthouse (demolished circa 20 years ago), reconceived as an experiential place where walkers and cyclists can learn about the cultural and natural heritage of the Port. The former location of the Pier Head will be marked with inscribed commemorative text, to ensure that there is a permanent in situ record of its former presence.

13. Mitigation Measures of Alternatives

Step 12 summarises the main mitigations adopted within the alternatives process, and the subsequent environmental assessments. Overall, the authors of the EIAR believe that the MP2 Project complies with the principles of proper planning and sustainable development, and that the EIAR has objectively demonstrated not to adversely affect the environment in all its facets, including the integrity of Natura 2000 sites.

5 PROJECT CONSULTATION & SCOPING

The evolution of the MP2 Project to its current form reflects the extensive consultation processes undertaken, initially in the preparation of the Masterplan, and more directly in the context of this specific project. The process of consultation has enabled DPC to solicit opinions on general development options for the port and facilitated differing perspectives to be taken into account in the initial stages of the project.

The Environmental Impact Assessment (EIA) Directive provides for a mandatory scoping process where requested by a developer, however, DPC did not request a “formal” scoping opinion from any competent authority in relation to the MP2 Project, rather, and in accordance with good practice, DPC “informally” or voluntarily scoped the contents of an Environmental Impact Assessment Report (EIAR) by engaging in consultations with prescribed and other statutory bodies and stakeholders and through public consultation. The informal scoping was undertaken in accordance with the European Commission’s 2017 “Environmental Impact Assessment of Projects Guidance on Scoping”, which states:

“It is good practice to carry out Scoping even if it is not required by legislation: Developers should endeavour to include a Scoping stage in their work programme for EIA, so that all of the concerns can be identified and addressed during the Scoping stage.”

The purpose of the EIAR scoping process is to identify the issues which are likely to be important during the environmental impact assessment and to eliminate those that are not relevant. The scoping process identifies 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. It defines the appropriate level of detail for the information to be provided in the EIAR. The primary focus of scoping is to define the most appropriate assessment of significant effects related to the proposed development.

In relation to consultation, the EIA Directive, Irish implementing legislation and recent guidance documentation make clear that there are specific requirements regarding the use of the EIAR, both as a tool to inform concerned stakeholders and the public, as well as to make decisions regarding development consent for projects. Accordingly, this EIAR provides evidence of effective consultations which have already taken place and provides the basis for effective consultations to come.

The scoping and consultation process has resulted in an iterative design procedure, such that the project has been modified to address the issues raised by statutory consultees, stakeholders and the public.

Consultation and the Masterplan Review

In 2017, DPC commenced a review of the Dublin Port Masterplan 2012 – 2040 (the Masterplan). When adopted in 2012, the Masterplan made provision for periodic reviews to take account of changes in the demand for the use of port facilities and developments in port operations.

This first review of the Masterplan has involved a detailed public consultation process aimed at securing views from relevant stakeholders whose perspectives on the port are important.

The consultation process took two distinct stages:

Stage 1: 2017 Masterplan Review Consultation Process

The 2017 Masterplan Review consultation process ran from January 2017 to March 2017 and involved the following elements:

- The publication of a detailed Masterplan Review 2017 Consultation Paper, outlining the issues that were being taken into consideration in the context of the review of the Masterplan.
- The initiation of a formal consultation process to secure submissions on the Masterplan Review.
- Extensive face to face briefings with key stakeholders prior to the launch of the Masterplan Review 2017 Consultation Paper.
- Presentations to the Central and South East Local Area Committees of Dublin City Council on the review of the Masterplan.
- A comprehensive media campaign surrounding the Masterplan Review designed to generate interest and encourage participation in the master planning process.
- A public information campaign including advertisements, door to door leaflet drops and an information briefing published for local residents and stakeholders.
- Briefings with DPC staff on the review of the Masterplan and an information display for the duration of the consultation period at the offices of DPC with all materials available for staff and visitors to inspect.
- Social media campaign to raise awareness, engagement and attendance across Facebook and Twitter channels.
- A Street Team active over two days in areas directly adjacent to Dublin Port distributing 6,000 flyers, placing 300 posters and visiting over 260 individual commercial premises.
- A series of events including:
 - local community briefings at Clontarf, East Wall and Ringsend
[Clontarf Public Information Day held at Scoil Uí Chonaill GAA Club, 13th February 2017];
[East Wall Public Information Day held at Sean O’Casey Community Centre, 15th February 2017];
[Ringsend Public Information Day held at Clanna Gael Fontenoy GAA, 16th February 2017];
 - direct briefings with a selection of community and environmental groups.
- The publication of a Masterplan Review 2017 Environmental Report Consultation Paper by RPS Consultants in January 2017.

The 2017 consultation process led to a high level of participation from stakeholders with 130 people attending community briefings. There were 67 formal written responses received from a broad range of respondents including individuals, Resident’s Groups, commercial interests, statutory bodies and environmental entities.

Following the 2017 consultation process a detailed report outlining the responses to the consultation process was prepared. This Report can be accessed on the Dublin Port website (www.dublinport.ie).

Stage 2: 2018 Masterplan Review Consultation Process

In 2018, DPC undertook a further consultation process concerning the Masterplan which involved:

- Publication of a Strategic Environmental Assessment (SEA) Environmental Report and a Natura Impact Statement (NIS) on the draft Dublin Port Masterplan 2040, reviewed 2018. These environmental assessments compared the original Masterplan proposals published in 2012 to revised proposals that would enable Dublin Port to meet the anticipated throughput of 77.2 million tonnes per annum by 2040. The revised proposals comprised two significant Strategic Infrastructure Development Projects within the Dublin Port Estate; the Alexandra Basin Redevelopment (ABR) Project, already at construction phase, and the MP2 Project in combination with improvements to the internal road network and the development of a Dublin Inland Port. The strategic environmental assessments found these revised development proposals, including the MP2 Project, to have significantly less environmental impacts compared to the Dublin Gateway Project which was proposed within the original Masterplan. This is because the Dublin Port Masterplan 2040, reviewed 2018, focusses on the redevelopment of existing port infrastructure on brownfield sites already in operation within Dublin Port, rather than expanding into the Tolka estuary.
- The draft Dublin Port Masterplan 2040, reviewed 2018, along with the associated SEA Environmental Report and NIS were completed and circulated in April 2018 to the Irish and UK statutory consultees for SEA. A public notice was placed in the National Press and on the DPC's website to notify the public about the draft Dublin Port Masterplan 2040, SEA Environmental Report and NIS, and to welcome comments. The consultation phase was open to responses from 17th April 2018 to 25th May 2018.
- A national and local media campaign in July 2018 formally announcing the publication of the final Dublin Port Masterplan 2040, reviewed 2018, with a social media campaign running in tandem.

The 2018 Masterplan Review consultation process drew 12 responses from a range of stakeholders, including Resident's Groups, statutory authorities, individuals and commercial organisations. Whilst no specific issues were raised with regards to the MP2 Project, the consultation responses have nevertheless provided an over-arching context to the scoping of environmental issues to be addressed within the EIAR for the MP2 Project.

Consultation and the MP2 Project

Building on the consultation carried out during the process to review the Dublin Port Masterplan 2040, DPC and their consultants, RPS, carried out further extensive consultation on the MP2 Project in the course of developing the current proposal.

Pre-application Consultation Meetings with An Bord Pleanála

Three pre-application meetings took place with An Bord Pleanála (the Board) between December 2017 and July 2018.

Further to the meetings, the Board determined that the MP2 Project constituted Strategic Infrastructure Development. The Inspectors Report supporting the Board's determination provided advice with respect to the scope of the EIAR which is summarised below:

- Clearly state the rationale and justification for the proposed development.
- The request for a 15-year planning permission should be justified.

- Scale and rationale for the proposed new jetty (Berth 53) should be clearly stated and the need justified; consult with NPWS in relation to potential impacts on the South Dublin Bay and Tolka Estuary SPA; and potential visual impacts should be assessed.
- Detailed assessment of construction and design of the new jetty (Berth 53) is required along with layout and servicing details including boundary treatment, buffers, landscaping and phasing.
- Have regard to current national advice in relation to the implementation of EIA Directive 2014/52/EU in relation to EIS developments.
- A comprehensive and detailed EIAR should be prepared which has particular regard to the impact of the proposed development on coastal processes, ecology (aquatic and terrestrial), archaeology, industrial heritage, water quality, flood risk and traffic management (including any new or modified road or rail proposals such as a Luas extension).
- A comprehensive and detailed Natura Impact Statement (NIS) should be prepared having regard to the presence of several European sites in the surrounding area.
- Due consideration should be given to in-combination effects on the environment with other proposed developments in the wider area.
- Public consultation should be as extensive as possible, and consultations should take place with Prescribed Bodies and the local community.

Pre-application Consultation Meetings with Dublin City Council

The following consultation meetings took place with Dublin City Council (DCC), the Planning Authority, presented in Table 5-1.

Table 5-1 Consultation Meetings with Dublin City Council

Consultation Meetings with Dublin City Council	Date
DCC Planning and Property Development Section, Meeting 1	29 th March 2018
DCC Noise and Air Quality Sections	2 nd May 2018
DCC Marine Archaeology Section	14 th May 2018
DCC Water Quality and Waste Sections	17 th May 2018
DCC Archaeology, Conservation & Heritage Section	31 st May 2018
DCC Traffic & Transportation Section	25 th June 2018
DCC Planning and Property Development Section, Meeting 2	3 rd July 2018
DCC Parks and Biodiversity Sections	6 th September 2018

Pre-application Consultation Meetings with Statutory Bodies

The following meetings took place with the following statutory bodies, presented Table 5-2.

Table 5-2 Consultation Meetings with Statutory Bodies

Consultation Meetings with Statutory Bodies	Date
Department of Culture, Heritage and the Gaeltacht (DCHG) – Marine Archaeology and Built Heritage	30 th May 2018
EPA, Office of Environmental Sustainability	5 th June 2018
Health & Safety Authority (HSA)	11 th June 2018
Department of Housing, Planning & Local Government (DHPLG), Foreshore Unit and Marine Institute	5 th July 2018
Inland Fisheries Ireland	6 th July 2018
Department of Culture, Heritage and the Gaeltacht (DCHG) – National Parks & Wildlife Service	2 nd August 2018
ESB Networks	12 th June 2018, 31 st July 2018, 8 th January 2019

Pre-application Consultation Meetings with other Statutory and Non-Statutory Bodies

A letter and information pack on the MP2 Project was issued to 43 statutory and non-statutory bodies listed in Table 5-3 in June 2018. The consultees were invited to make a submission on the proposed development and outline any issues which they would like to see addressed in the EIAR and NIS. Responses were received from eleven of the Statutory and Non-Statutory Bodies consulted as part of the EIA Process

Table 5-3 Statutory and Non-Statutory Bodies consulted as part of the EIA Process

Consultee List		
Dept. of Housing, Planning and Local Government	Dept. of Communications, Climate Action & Environment	Dept. of Agriculture, Food and the Marine
Environmental Protection Agency	Office of Public Works	South Dublin County Council
Fingal County Council	Dun Laoghaire Rathdown County Council	Eastern and Midland Regional Assembly
Dept. of Transport, Tourism and Sport	National Transport Authority	Transport Infrastructure Ireland
Commission for Railway Regulation	Irish Rail	Health and Safety Authority
Commissioners of Irish Lights	RNLI	Arts Council
Heritage Council	Failte Ireland	An Taisce
Waterways Ireland	Bord Iascaigh Mhara	Sea Fisheries Protection Authority
Marine Survey Office	Marine Institute	Geological Survey of Ireland
Birdwatch Ireland	Irish Whale and Dolphin Group	Irish Seal Sanctuary
Irish Water	Eircom	Electricity Supply Board (ESB)
Gas Networks Ireland	Department of Education and Skills	Department of Business, Enterprise and Innovation
Dept. of Foreign Affairs & Trade	Department of Health	Health Service Executive
Office of Radiological Protection	Coillte	Development Applications Unit, Dept. of Culture, Heritage and the Gaeltacht
Inland Fisheries Ireland		

Public Consultation

An extensive programme of public consultation was undertaken between April and July 2018 to seek the views of the wider public on the MP2 Project and the proposed community gain initiative to be advanced as part of the project.

The consultation process involved:

- The publication of a community newsletter on the MP2 Project and the community gain element, presented in Volume 3, Appendix 5-5 of this EIAR, which was circulated to over 36,800 homes in areas adjacent to the port.
- Meetings with local community groups in areas directly adjacent to the port.
- Briefings with local public representatives on the MP2 Project and the community gain element – these meetings included one to one briefings with individual public representatives and also with the local Area Committee of Dublin City Council.
- A dedicated community consultation process to seek views on both the MP2 Project and the Community Gain initiative – the consultation process sought respondents' views in general but also invited responses around specific questions about the project and the Community Gain proposal.
- An extensive media campaign to publicise the project which secured wide coverage in all national and local print, broadcast, online media outlets. A social media campaign across Facebook and Twitter to support same.

Additional Consultations

Additional consultation has taken place in the lead up to the application for consent during 2019 including ongoing interactions with Dublin Port tenants, Community Groups, Dublin City Council and St Joseph's Co-Educational National School with respect to the Community Gain proposal and discussions with government bodies with respect to Brexit. The range of ongoing consultations is presented in Table 5-4.

Table 5-4 Summary of Additional Consultations (January 2019 – June 2019)

Date	Consultee	Subject
Ongoing interactions	Docklands Consultative Council	Outline of MP2 Project and developments within Dublin Port generally
Ongoing interactions	Dublin City Council Parks Department	Ongoing engagement on Community Gain proposal
Ongoing interactions	Board of Management, St Joseph's Co-Educational National School, East Wall	Ongoing engagement on Community Gain proposal for St Joseph's School
Ongoing interactions	Central Government Groups assessing Brexit impact (Cross Department and inter agency groups)	Consultation on the impact of Brexit on Port Operations and the implications of Brexit for future Port Development Projects including the MP2 Project
Ongoing interactions	Calor/Irish Tar, Irish Rail, Petrogas, Valero, Topaz (Circle K)	Ongoing consultation on MP2 project
Ongoing interactions	Irish Ferries, Stena line	Ongoing consultation on MP2 project
Ongoing interactions	ABR Project Liaison Group	Quarterly updates on ABR Project but including MP2 Project
6 March 2019	Irish Planning Institute	Presentation including question & answer session on ABR Project and MP2 Project including site visit
12 April 2019	Chartered Institution of Water & Environmental Management (CIWEM)	Presentation including question & answer session on ABR Project and MP2 Project including site visit
30 April 2019	Clontarf Residents Association	Consultation on boundary treatment impacting on MP2 Project
17 May 2019	ESB Networks	Further consultation on the outline of the MP2 Project

The development proposals advanced in the MP2 Project reflect the significant levels of consultation that have taken place since 2017 on the future of Dublin Port.

The various submissions and comments made in relation to the MP2 Project have been fully considered by the consultants in the preparation of the EIAR and by the applicants in the design of the scheme. Every effort has been made to address all concerns raised and, where possible, mitigation measures have been proposed to minimise the environmental impact of the MP2 Project.

Scoping

Detailed scoping has been undertaken in respect to the MP2 Project in accordance with in the European Commission's 2017 "Environmental Impact Assessment of Projects Guidance on Scoping" and the EPA's Environmental Impact Assessment Reports, Draft Guidelines (August 2017), which state:

"Scoping' is a process of deciding what information should be contained in an EIAR and what methods should be used to gather and assess that information. It is defined in the EC guidance⁴⁵ as:

'determining the content and extent of the matters which should be covered in the environmental information to be submitted in the EIAR'

Scoping is best carried out by personnel having appropriate expertise and relevant prior experience of the factors involved. Knowledge of the characteristics of the project type and of the sensitivities likely to be present in the receiving environment are particularly useful for scoping.

[...]

Scoping is carried out on a case-by-case basis because the significant issues, for different projects are unlikely to ever be identical. However, there are standard issues that a developer should consider for each project to establish whether they apply in specific cases. The Advice Notes⁴⁷ contain guidance on relevant environmental factors for principal project types.

The potential for likely significant effects throughout different phases of the proposed project, are considered as far as possible at scoping stage – whether they would individually require consent or not. These include, as relevant, site investigations, construction, commissioning and operation to eventual decommissioning. Scoping also considers the range of alternatives to be considered in an EIAR.

The scoping of the MP2 Project has greatly benefitted from the environmental monitoring programme which is currently in place for the construction of the ABR Project. The site-specific scientific data collected to date has been used to support the preparation of the EIAR and NIS for the MP2 Project and facilitates a depth of understanding of the environment in and around Dublin Port including the inner Liffey channel and Dublin Bay. The scope of the MP2 Project was further considered in the context of the extensive environmental datasets collated during the preparation of the Strategic Environmental Assessment (SEA) which complemented the review of the Dublin Port Masterplan during 2017 and 2018.

Above all, the extensive consultation process undertaken during both the review of the Dublin Port Masterplan and specifically for the MP2 Project provided a sound basis for confirming the key issues to be addressed, the extent of the environmental appraisals required, and the level to which these issues needed to be addressed.

Following the scoping process, all environmental topics have been comprehensively addressed within the EIAR including:

- Examination of Alternatives
- Risk of Major Accidents
- Biodiversity, Flora and Fauna
- Soils, Geology and Hydrogeology
- Water Quality and Flood Risk
- Noise & Vibration
- Material Assets – Coastal Processes
- Material Assets – Traffic and Transportation
- Archaeology and Cultural Heritage
- The Landscape and Visual Impacts

- Population and Human Health
- Waste
- Cumulative Effects

Once the key issues were identified, baseline studies/surveys were carried out. The studies enable the prediction of the likely environmental impacts arising from the MP2 Project. These impacts are evaluated in terms of their significance, nature and magnitude.

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.

6 RISK OF MAJOR ACCIDENTS & DISASTERS

The development is within the vicinity of several establishments that fall within the scope of the *Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations, 2015* (the COMAH Regulations), in particular the Calor establishment and the Indaver establishment, to the west of the development on the northern side of Tolka Quay Road. In light of the nature of the activities that will take place at the MP2 Project site, and the nature of the surrounding environment, the most significant risks of major accidents and disasters are associated with the COMAH establishments.

Byrne Ó Cléirigh conducted a COMAH land use planning assessment for the MP2 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 Calor (and other COMAH) establishments.

The COMAH establishments within Dublin Port (on the north side of the River Liffey) are listed in Table 6-1. Most of these establishments store petroleum products (eight of the ten establishments). Of the remaining two, one stores and distributes LPG (Calor), and the other (Indaver) operates a hazardous waste facility.

There are also three COMAH establishments on the south side of the River: the two National Oil Reserves Agency (NORA) upper tier establishments at Ringsend and Poolbeg, and the Dublin Bay Power lower tier establishment. The NORA Ringsend establishment stores Class III petroleum, the NORA Poolbeg establishment (which is being refurbished) will store Class II and Class III petroleum, and the Dublin Bay Power establishment stores Class III petroleum as a backup fuel for its natural gas supply. The potential impacts from a major accident at any of these three establishments are not significant at receptors in the north of the Port and therefore they have been screened out of the assessment.

There are risks other than from COMAH establishments that may impact on the MP2 Project, including natural events (such as earthquakes, lightning strikes, extreme weather events, etc.) and other external events (such as aircraft impacts) that may cause or exacerbate a major accident at a COMAH establishment, which may in turn impact on the MP2 Project. These events are considered, both in the context of the MP2 Project and the individual COMAH establishments.

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 MP2 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 MP2 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.

Table 6-1 COMAH Establishments in vicinity of the MP2 Project⁸

Establishment	Location	Tier	Activity	Consultation Distance ⁹
Calor Teoranta	Tolka Quay Road, Dublin 1	Upper	LPG storage & distribution	600 m
Fareplay Energy Ltd. (under the Topaz Energy Group)	Tankfarm 1, Alexandra Road, Dublin Port, Dublin 1 Tankfarm 2, Tolka Quay Road, Dublin Port, Dublin 1	Upper	Oil storage & distribution	400 m
Indaver Ireland Ltd.	Tolka Quay Road, Dublin Port, Dublin	Upper	Hazardous waste	700 m
Tedcastles Oil Products	Yard 1, Promenade Road, Parish of St. Thomas, Dublin Port, Dublin 1	Upper	Oil storage & distribution	400 m
Tedcastles Oil Products	Yard 2, Tolka Quay Road, Parish of St. Thomas, Dublin Port, Dublin 1	Upper	Oil storage	400 m
Valero Energy Ireland Ltd.	Alexandra Road, Dublin Port, Dublin 1	Upper	Oil storage & distribution	400 m
Electricity Supply Board	North Wall Generating Station, Alexandra Road, Dublin 1	Lower	Oil storage	300 m
Iarnród Éireann	Alexandra Road, North Wall, Dublin 1	Lower	Oil storage	300 m
Topaz Energy Limited	Terminal 1, Alexandra Road, Dublin Port, Dublin 1	Lower	Oil storage & distribution	400 m
Topaz Energy Limited	Yard 3, Alexandra Road, Dublin Port, Dublin 1	Lower	Oil storage	300 m

⁸ The HSA publishes details of upper tier and lower tier establishments on its website, www.hsa.ie.

⁹ The Dublin City Development Plan 2016 – 2022 includes the consultation distances for the COMAH establishments.

7 BIODIVERSITY, FLORA & FAUNA

A biodiversity appraisal of the direct and indirect significant effects of construction and operation of the MP2 Project on biodiversity has been completed. It comprises a number of ecological assessments on different specialist subject areas of ecology, and has been written by a number of experts. It contains assessments of:

- Terrestrial Biodiversity
- Benthic Biodiversity and Fisheries
- Marine Mammals
- Avian Biodiversity
- Designated Sites (other than European sites)

A Habitats Directive appraisal has been prepared separately, containing Stage 1 screening and Stage 2 appropriate assessment appraisals required under Article 6(3) of the Habitats Directive. They are contained within a Natura Impact Statement (NIS), submitted to the competent authorities under separate cover.

The assessments contained within the biodiversity appraisal are based on the project description detailed in Chapter 3 of the EIAR. They are prepared in accordance with the following guidance:

- European Commission's Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU) ([EC, 2017](#))
- European Commission's Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment ([EC, 2013](#))
- Environmental Protection Agency's Guidelines on the Information to be contained in Environmental Impact Assessment Reports ([EPA, 2017](#))
- Chartered Institute of Ecology and Environmental Management's Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine ([CIEEM, 2018](#))
- Transport Infrastructure Ireland's Guidelines for Assessment of Ecological Impacts of National Road Schemes ([NRA, 2009](#))
- British Standards Institution BS 42020:2013 Biodiversity: Code of practice for planning and development ([BSI, 2013](#))

Terrestrial Biodiversity

Habitat survey was conducted in May 2018 and repeated in May 2019. Eight habitat types were identified on the site of proposed development which is dominated by a single habitat type (Buildings and artificial surfaces). Most habitats recorded at the site of proposed development were of local (lower) / site value, and the vegetated coastal bund between the terrestrial and marine environments is of higher value but still at a local level.

No rare or protected plants and no invasive alien species of flora were identified during surveys conducted in 2018 and 2019.

Ground mammal survey was conducted in May 2018 and repeated in May 2019. No badger prints, latrines, or hairs were recorded and no otter prints, spraints or prey remains were recorded on site during the surveys conducted in 2018 and 2019.

Bat survey was conducted in May and July 2018, and again in May and June 2019. Activity survey, driven transect survey and inspection of buildings to be demolished was undertaken. No bat roosts were recorded in the buildings to be demolished or a tree-line to be removed, no bats were detected emerging from or returning to roosts, and no foraging or commuting bat activity was recorded in survey over two consecutive seasons in the MP2 Project site.

The MP2 Project is of negligible value to local populations of terrestrial mammals.

Buildings and artificial surfaces will be redeveloped. No permanent loss will occur. 1.2ha of recolonising bare ground and 0.4ha of amenity grassland will be lost. A tree-line containing fourteen planted silver birch will be removed. No effects will occur on terrestrial mammals. The effects that will occur are not significant.

Twenty additional projects were considered for their potential to result in cumulative effects on terrestrial biodiversity features with the MP2 Project. Cumulatively, there will be no terrestrial biodiversity impacts between the MP2 Project and the other projects considered.

In summary, there are no significant impacts predicted on any terrestrial biodiversity feature as a result of the construction or operation of the MP2 Project. As there are no significant impacts predicted in the assessment of terrestrial biodiversity features, there is no requirement for mitigation measures and no requirement for monitoring.

Benthic Biodiversity and Fisheries

Benthos

Samples were collected for the benthic assessment for the MP2 Project in May 2018. Samples were collected using standard benthic grabs (0.1m² Van Veen Grabs) and sieved through a 1mm mesh sieve to collect fauna from the sediment. Faunal identification was undertaken by expert taxonomists. Data for the dredge spoil disposal area to the west of the Burford Bank were assessed using data from previous work undertaken in the disposal area.

Results from the benthic data indicate the presence of a single habitat type within the development area. The dominant species present in the area was the polychaete worm *Capitella capitata*. The faunal group identified has been classified as *Capitella capitata* in enriched sublittoral muddy sediments. This concurs with the findings of another survey undertaken in 2015 as part of the Alexander Basin Redevelopment (ABR) Project, which noted this as the dominant habitat in the Dublin Port area out to the Poolbeg lighthouse. Connor et al (2004) says of this biotope: 'typically occurs in marine inlets or estuaries where organic enrichment allows *C. capitata* to out compete other taxa'. It also extends into the intertidal stretches of the survey area, with greater *C. capitata* abundances present at stations close to the shipping channel, with lower numbers further from the channel.

The benthos at the dredge spoil disposal area to the west of the Burford Bank was assessed using data collected by ASU in 2016 as part of the monitoring programme for the ABR Project. Faunal communities within the disposal area were found to be strongly influenced by sediment type, with fine muddy sands located along the western stretches of the site and coarser sediments present along the northern and eastern parts. The communities present were similar to those identified in previous surveys, highlighting the stable nature of the benthos in the area.

Potential Impacts

Impacts associated with the MP2 Project were listed under the following headings; 1. Habitat Removal, 2. Habitat Disturbance due to Dredging and 3. Impacts Associated with Dredge Spoil Disposal.

The proposed development will result in the loss of 1.7 ha of benthic soft sediment due to the infilling of Oil Berth 4. Due to the nature of the faunal community present here, the impact is considered permanent, slight negative. In addition, the removal of hard structure from the demolition of Pier Head at Eastern Breakwater will result in a net gain of 0.28 ha of soft sediment subtidal. This is considered permanent, slight positive. The placement of concrete mattresses on the sloping edges of the dredged areas, to prevent slumping, will result in the permanent loss of 1.78 ha of soft sediment subtidal and although this is considered permanent, the creation of a comparable area of hard benthos associated with the concrete mattresses is considered a slight positive as it results in a more diverse benthic habitat environment.

The dredging of 424,644m³ of sediment from 11.67 ha of benthos is expected to result in the temporary removal of benthos within the footprint of the dredge area. Due to the opportunistic nature of the species present in area, this impact is considered to be short-term, slight negative, with recovery expected to occur rapidly once dredging has been completed.

The offshore disposal site located to the west of the Burford Bank is currently being used to deposit circa 6 million m³ of mixed sediment from capital dredging works associated with the ABR Project. In addition, ongoing maintenance dredging is also being undertaken within Dublin Port, with disposal of this spoil also taking place at the disposal site. It should be noted that there will be no overlap between the disposal of sediments from either ongoing maintenance dredging or capital dredging works associated with the ABR Project and the proposed disposal programme for the MP2 Project. The dynamic nature of the site is such that recovery is expected to occur rapidly after the cessation of disposal activities. The volumes associated with the proposed disposal is less than half of the annual disposal from the ABR Project capital dredging works. As a result, it is expected that the disposal of the sediment from the MP2 Project would delay recovery at the site by an additional 1-3 years. This anticipated cumulative impact is therefore considered a short-term, moderate, negative impact.

Fisheries

The fisheries assessment for the MP2 Project was based principally on a desk review and a focused beam trawl survey in the development area which was undertaken in May 2018. Data sources for the review included Inland Fisheries Ireland (IFI) for their WFD fisheries surveys in the Liffey Estuary, the Marine Institute for their glass eel, elver and river lamprey data from their Islandbridge elver trap and adult salmon data from ESB Fisheries Conservation.

The data show that the Liffey estuary is home to a typical marine / estuarine list of common fish species such as sprat, mullet, flounder, sand gobies etc. The beam trawl survey recorded five species including, flounder, plaice, pogge, dragonet and butter fish. Large numbers of typical invertebrates such as shore crab, sea squirts and marine worms were also taken in some of the trawls. In addition to the resident and semi-resident species, the Liffey acts as a migratory channel for salmon, eel and river lamprey. The desktop review showed peak glass eel migration in April and May at Islandbridge on the Lower River Liffey, although they are probably in the estuary from as early as December. Peak adult salmon movements occur from May/June to

September/October, although there could be adults passing through in almost any month. River lamprey seem to have two peaks one in spring (February to April) and one in autumn (September to October).

Potential Impacts

Impacts associated with the project would arise principally during the construction phase of the project and relate to habitat disturbance and alterations, fish entrainment and elevated suspended solids during dredging, and disposal; and noise impacts during pile driving. In addition, there will be a net habitat loss associated with the extension of berths (1.42 ha), which is considered to be a slight negative and long-term impact, given that the area is very minor in the context of the Lower Liffey as a whole (~0.3%). It is expected that during dredging resident fish will be entrained by the dredger drag-head more or less in proportion to the frequency of their occurrence in the development area with those living closest to the bottom at greater risk. Annex II migrating species including adult salmon, river lamprey and eel are also vulnerable to entrainment although a number of factors will likely reduce the impact, including a no-dredge window between March and May which is specifically designed to protect salmon smolts but which will also benefit glass eel and spring migrating river lamprey. In addition, given the very limited suction area around the drag-head compared to the width of the dredged channel (200-400m), entrainment is expected to have only a slight negative impact on the population of any individual species.

Suspended solids if present in levels high enough can adversely impact fish species through suffocation or indirect gill disease effects. Modelling of the dredging associated increase in suspended solids both in the dredge area and at the disposal site indicates that the area of very elevated solids concentrations will be confined both spatially and temporarily and adverse impacts are expected to be just slight, negative and temporary. Recent (September 2018) beam trawl surveys have shown a diverse fish population in and around the Burford Bank disposal site, just 6 months after the disposal of a large volume of dredge spoil indicating that the disposal of MP2 Project dredge spoil should not have a significant adverse impact on the use of the site for fish feeding which will therefore continue to act as a foraging site for porpoise.

The provision of concrete mattresses (1.78ha) as a means of stabilising new channel slopes along the new Berth 53 will introduce a new hard-benthos element to an otherwise largely soft bottom benthic environment which in turn may favour fish associated with these surfaces. Overall, this change is considered neutral or slightly positive, permanent.

Noise associated with impact piling of large circular piles has the potential to induce fish mortality or recoverably injury within a 10-12m radius around the active pile. While any fish within this area could be killed there are a number of factors which will likely reduce this potential impact becoming significant. These include the fact that only one (or at most 2) large tubular pile rigs will operate at the same time. Piling will only be undertaken between 08:00 and 20:00 in any 24 hour period and for just 6 days per week. In addition, no large tubular piling will take place within the Liffey Channel from March to May inclusive each year in order to protect outward migrating smolts from potential injury, a measure that will also provide protection for glass eels as well as spring adult salmon and adult river lamprey migrating at the same time. It should also be noted that many fish species studied have been shown to avoid very loud noises. Taken together these considerations indicate that no species should be adversely impacted at the population level due to the proposed piling schedule for the project.

Marine Mammals

The potential impacts on marine mammals was explored and mitigation measures recommended. Dublin Bay is recognised as an internationally important site for marine mammals. Grey and common (harbour) seals occur within the site and one of only three protected sites in Ireland for harbour porpoise occur immediately to the east of Dublin Port. Knowledge of the marine mammal community in Dublin Port and adjacent waters was greatly enhanced by data collected during Dublin Port's ABR Project. Sightings data was collected by dedicated MMOs during ABR Project dredging campaigns and during mitigation, as well as an extensive acoustic database from four monitoring sites at the dredge spoil ground and at a control site to assess the use of the area by harbour porpoise. Monthly seal counts at a haul out site on Bull Island have also been carried out during the ABR Project which were also used in this assessment.

Harbour porpoise

There were 77 sightings (26% of total marine mammal sightings) of harbour porpoise during the first season of the ABR Project capital dredging campaign and one sighting of a single bottlenose dolphin. All sightings were outside Dublin Harbour with sightings increasing further east and on the spoil ground. A similar pattern was recorded during two maintenance dredging campaigns during 2017 and 2018 with 29 (16% of total) and 35 sightings (32%) of harbour porpoise. Static Acoustic Monitoring data showed porpoise were detected on 95-100% of days, with the highest Detection Positive Minutes per day (DPM) were at Buoy 2 (91; centre of spoil ground), with similar DPMs (c.45-55) at buoys 1 (north Burford Bank), 3 (south of spoil ground) and 4 (control site) in 2017-18 but higher detections at buoy 4 (102) during 2018-19, with similar levels of detections (42-65) at the sites at the spoil ground. Results from these deployments showed that porpoises were the most frequently detected odontocete species, with few confirmed dolphin detections and are present nearly every day and all year around, including on the dredge spoil disposal site.

Harbour porpoise do not use the immediate port area and are rarely recorded inside Dublin Harbour but are frequent along the navigation channel in Dublin Bay and on the dredge spoil disposal site. Thus harbour porpoise in Dublin Bay will only be affected by dredging and dumping of spoil and shipping traffic and not construction activities or site investigations within the Liffey channel.

Grey and Common seals

There were 209 sightings (70% of total marine mammal sightings) of grey seals during the ABR Project capital dredging campaign (2017-2018) with only 12 sightings (4%) of common seal. Grey seals were observed within, and at the mouth of, Dublin Harbour, with sightings decreasing further east and on the dredge spoil disposal site. Common seal followed a similar distribution, but with more sightings at the dredge spoil disposal site. Bull Island was surveyed for hauled out seals from May 2016 to August 2018. Grey seals were recorded hauled out on Bull Island on 52% of survey days with highest numbers of individuals recorded in June 2017, with 34 grey seals present. Their abundance peaked from June to August, with low numbers from September to November and no seals were present in December, which coincides with their breeding and moulting seasons. Common seals were present year around (87% of survey days) with a seasonal affect with numbers declining in the summer months and peaking in the winter months. Common seal breeding season occurs from approximately May to June and their annual moult occurs from August to September, when they would spend a significant time resting on land, including Ireland's Eye and Lambay Island. The highest abundance recorded was in January with 22 seals present.

Area's of the port that will be affected by construction by the MP2 Project, the Liffey Channel, is frequently used by seals and is the same area as affected during the ABR Project. Seals using the outer harbour and in Dublin Bay will only be affected by dredging and dumping of spoil and shipping traffic.

Potential impacts on Marine Mammals

Direct impacts on marine mammals may occur during construction including piling and during dredging and dumping operations. Predicted impacts on seals may occur if seals are close to piling activities on start-up. The likelihood of impacts are low but the impact could be significant without mitigation. Predicted direct impacts from dredging and dumping may arise if marine mammals are very close to the dredger during start up or during dumping of sediment at the spoil ground leading to injury. The likelihood of impacts are extremely low and the impact also low. Modelling suggests that noise associated with dredging and dumping is unlikely to have a significant effect.

Proposed mitigation, through the implementation of NPWS (2014) Guidelines and appropriate Mitigation Zone will reduce this potential impact to non-significant levels both at the individual and population level. As an additional mitigation measure for harbour porpoises it is proposed to maintain the static acoustic monitoring (SAM) programme established during the ABR Project, to ensure there is no impact on the Conservation Objectives of the Rockabill to Dalkey Islands SAC. Monthly counts of seals hauled out on Bull Island will be continued to ensure there is no long-term impact of construction activities at Dublin Port on this important haul-out site and to contribute to increasing knowledge of seals using this UNESCO World Heritage site. It is also recommended that consideration is given to assessing current levels of noise associated with shipping noise to establish baseline for future reference.

Avian Biodiversity

This section assesses the potential impacts of the proposed development on the numbers and diversity of birds that use the area around Dublin Port in the breeding and non-breeding seasons. Dublin Bay is of international importance for waterbirds throughout the year. The main reasons for this are the populations of wintering waterbirds that use the tidal waters and a breeding colony of terns (small migratory seabirds) within the Port. In addition, there is a small population of another seabird, the Black Guillemot, that breeds within the port infrastructure.

There is a long series of continuous data on the bird populations of Dublin Bay from the 1990s with especially intensive research having been carried out by BirdWatch Ireland since 2013 as part of the Dublin Bay Birds Project which is funded by Dublin Port Company. In addition, a series of low tide bird surveys was carried out in the Tolka Estuary during the winters 2017/18 and 2018/19 to assess the proximity of foraging waterbirds to the port. To assess the potential impacts of the proposed Berth 53, a series of additional surveys was undertaken in this area at extreme low tides in the same two winters when there is some intertidal exposure in this area. Monitoring of the tern colony was undertaken each year since 2013 by recording the number of active nests on four separate structures within the Port. Similarly, the breeding population of Black Guillemots in the Port has been censused annually since 2013 with a boat-based survey.

The Black Guillemot population in the Port varied from 46 to 82 with an average of 69 individual birds. In the area directly affected by construction of the MP2 Project the total number of birds was estimated at 5 in 2018 (mean 9 over the period 2013-2018). The number of tern nests on artificial structures in the Port varied from

444 to 592 with the peak number recorded in 2018. Non-breeding waterbirds occurring in the vicinity of the proposed Berth 53 were extremely variable with a peak of 739 in March 2019. The number of dates when intertidal exposure occurs in this area is very small and the period of exposure is very short. The birds concerned are primarily gulls but small numbers of waders have been recorded on some dates. Brent Geese are rare in this area.

The main direct impact of the MP2 Project on birds will be the removal of several Black Guillemot nest sites in the quay walls and Ro-Ro ramps within Oil Berth 3, Oil Berth 4, Berth 50A and Berth 51/52. This will directly affect approximately 9 birds (average of the period 2013-2018) which is possibly equivalent to 5 pairs. Prior to construction, a number of custom-made nest boxes will be provided in adjacent areas of the Port in which any displaced birds will be able to nest in future. This will mitigate any negative impacts of the proposed development on this species.

No direct impacts are predicted on terns as there are none of these species nesting in the immediate area of the MP2 Project. It is concluded that construction noise from the proposed project site will not be threatening to these tern species. There is no evidence that dredging operations affect the small shoaling fish that are the prey of the terns.

The proposed development will have no direct impact on non-breeding waterbirds as it does not include any intertidal areas. Indirect impacts assessed include possible displacement due to construction disturbance, noise from pile-driving and lighting of the proposed development. All construction works at Berth 53 and the heritage installation will be suspended during periods of low spring tides below 0.25m OD when there is potential for waterbirds to forage on intertidal sediments in the area within 200m of the berth site. These periods can be predicted for the full period of construction based on tide tables. This will avoid any indirect effects of human disturbance on the birds during construction.

To mitigate any visual disturbance of waterbirds during operation of the development appropriate screening will be used at Berth 53. Gates will be used at the site of the Greenway to control the movement of people during periods of greatest low spring tides, again, to avoid disturbance at feeding grounds within the Tolka Estuary. Published evidence from elsewhere shows that these bird species are not likely to be affected by construction noise or artificial lighting.

The current Dublin Bay Birds Project, which is funded by Dublin Port Company, will be continued for the full period of construction and for a specified period thereafter. This project involves long-term monitoring of all waterbirds on a monthly basis throughout the year and includes monitoring of breeding terns within the Port.

Designated Sites

An assessment of designated sites (other than European sites) concludes that significant environmental effects (in the absence of mitigation) are predicted upon water quality and marine habitats in coastal zones of North Dublin Bay proposed Natural Heritage Area and South Dublin Bay proposed Natural Heritage Area or core areas of the UNESCO Dublin Bay Biosphere; and that disturbance or displacement effects could occur to waterbird populations of North Dublin Bay proposed Natural Heritage Area and South Dublin Bay proposed Natural Heritage Area. Mitigation has been proposed where necessary and there is no significant residual environmental effect upon these designated sites with effective implementation of the proposed mitigation measures.

8 SOILS, GEOLOGY AND HYDROGEOLOGY

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

The investigation identified that the site is underlain by made ground, sands, gravels and clay.

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 at greater depth within the sand and gravel deposits.

The conceptual site model developed in the assessment has not identified any potential significant relevant pollutant linkages (RPLs) for the site.

The proposed development will not have any substantial, negative impacts on the 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. The Marine Institute confirmed that they would have no objection to the disposal of this sediment at the licensed offshore disposal site located at the approaches to Dublin Bay west of the Burford Bank. The marine sediments can therefore be classified as Class 1 (Uncontaminated: no biological effects likely).

9 WATER QUALITY & FLOOD RISK ASSESSMENT

Assessment of water quality and flood risk during the construction and operational stages of the MP2 Project has been completed. These assessments are based on the project description detailed in Chapter 3. They are prepared in accordance with the European Commission's Guidance on the preparation of the Environmental Impact Assessment Report (European Commission, 2017) and the EPA Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2017).

The assessment of water quality is based on the Water Framework Directive (WFD) environmental objectives for water bodies. The water quality within Dublin Port and Dublin Bay was determined using National monitoring and data collected as part of the Alexandra Basin Redevelopment (ABR) Project. The likelihood for significant negative impacts on water quality was determined with mitigation measures proposed to reduce impacts, where necessary.

The flood risk assessment is consistent with a Stage 3 site specific Flood Risk Assessment (FRA) under 'The Planning System and Flood Risk Management Guidelines', (DEHLG/OPW, 2009). The Flood Risk Assessment identified possible sources of flooding, established the impact of the MP2 Project and proposed mitigation measures to minimise the flood risk, where necessary.

9.1 Water Quality

Baseline water quality within the receiving environment was established using national monitoring data (used to establish water quality status under the EU Water Framework Directive). Monitoring data collected during the Alexandra Basin Redevelopment (ABR) Project is also used in this assessment. A review of all available monitoring information has concluded:

- The overall WFD Surface Water Quality status (2010-2015) is moderate in the nearby estuarine waters and good in Dublin Bay.
- The overall WFD Groundwater Quality status (2007-2012) is good in the underlying water body.
- There are a number of protected areas within vicinity of the MP2 Project area including areas of Bathing and Recreational Water, Nutrient Sensitive Areas and Water Dependant Natura 2000 sites
 - Nearby bathing areas were classified as: Dollymount Strand - Good; Sandymount and Merrion Strands - Poor; Seapoint – Excellent (2017). Sandymount and Merrion Strands are considered vulnerable to pollution due largely to surface water inflows, and faecal pollution by birds. Bathing water monitoring in the 2018 season has indicated excellent quality in most sampling instances to date.
 - The Liffey Estuary, from Islandbridge weir to Poolbeg Lighthouse, including the River Tolka basin and South Bull Lagoon, has been designated as a nutrient sensitive area.
 - The licensed dumping area, within the Rockabill to Dalkey SAC, is designated for Annex I qualifying interest Reef and Annex II species *Phocoena phocoena* (harbour porpoise).
- The EPA Water Quality in 2016: An indicators Report has stated the following trophic status: Liffey Estuary Lower - Intermediate; Tolka Estuary - Eutrophic; Dublin Bay - Unpolluted. The levels of Winter Dissolved

Inorganic Nitrogen (DIN) concentration trends have remained stable between 2007 and 2016. Winter Molybdate Reactive Phosphorus (MRP) concentration trends have remained stable for the Liffey Estuary Lower between 2007 and 2016 and the Tolka Estuary while the concentration of Dublin Bay has shown a significant decrease over this period.

- Marine Institute monitoring provides turbidity, temperature and dissolved oxygen datasets for the estuary and Dublin Bay which are comparable with the ABR Project monitoring datasets.
- Dublin Port Company is carrying out extensive water quality monitoring in Dublin Port and Dublin Bay as part of the ABR Project. Monitoring stations have been established in four locations within Dublin Port and Four locations within Dublin Bay. These provide detailed information on relevant water quality parameters (Dissolved Oxygen, Turbidity, Temperature and Salinity). The data collected has been compared with Monitoring carried out by the Marine Institute. The comparison show similar turbidity and dissolved oxygen levels recorded to that of the ABR Project monitoring programme. The water quality data collected as part of the ABR project has shown the following:
 - Average daily turbidity is generally low but may be elevated during storms. The mean dissolved oxygen monitoring data also shows that oxygen levels are consistently close to saturation levels.
 - High frequency measurements of turbidity in Dublin Bay gives a 3-dimensional record of water clarity and shows that mean daily turbidity is low at all sites and increases slightly with depth. There is no obvious relationship between turbidity and dredging periods.
 - Water quality was satisfactory during the monitoring programme 2017 - 2018 and was not impacted by loading or dumping during dredging operations. Measured turbidity results demonstrate that the dredging campaigns during 2017 and 2018 did not cause any discernible increase in turbidity above background levels.

Assessment of Impacts

The MP2 Project's likelihood for significant impacts on water quality during the construction and operation phases was assessed. This assessment used criteria for rating significance and magnitude from the National Roads Authority (NRA) publication "*Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes*" (NRA, 2008).

Potential water quality impacts during construction include suspended sediment and sedimentation, Concrete and Cement Pollution and General Construction Works from the demolition of existing buildings and structures, berth construction, landside construction and Capital Dredging and Disposal Operations. Potential water quality impacts during the operational phase include suspended sediment and sedimentation from ongoing maintenance dredging and general site operations, including storm water drainage from hard standing areas.

Mitigation

The potential impacts arising from the landside elements of the MP2 Project during project construction and operation are dependent on the reliability of drainage and treatment of site run-off before discharge to the Estuary. Therefore, it is important to use procedures to control and minimise surface water and suspended solids movement. It is also important that measures are taken to ensure existing drainage pathways are kept

free from construction sediment and pollutants. These measures entail the use of effective barriers to pollutant export and best practice techniques to control these pressures at source.

Mitigation measures in the form of water quality monitoring have also been applied to the MP2 project. The water quality monitoring network has been in place since 2016 and will continue for the duration of the construction phase of the MP2 Project. The continuation of the monitoring system will serve to further strengthen the knowledge of water quality trends and act as an key indicator for the health of the marine environment. In the event of possible environmental incidents, the on-site environmental facilities manager will initiate additional investigative sampling as required to seek to identify the possible source and nature of any pollutants present. A record will be made of any general observations relevant to the event which may inform the investigation including: weather conditions; any unusual water attributes (e.g. unusual colour or smell of sample, foam, scum); any other observations including works within or surrounding the site; any other general observations including written and photographic records will be made as appropriate.

The Construction Environmental Management Plan (CEMP) that accompanies this EIAR details the mitigation measures that will be employed on site during the proposed MP2 Project construction and operational phases. Where the appropriate mitigations measures as listed in the CEMP are fully implemented during the construction and operational phases, the water quality impact of the proposed development will be minimal. Therefore, the MP2 Project is not expected to have a significant effect on the water quality of the receiving waters. The proposed works are compliant with the requirements and environmental objectives of the EU Water Framework Directive and the other relevant water quality objectives for these water bodies.

9.2 Flood Risk Assessment

The flood risk assessment identifies possible sources of flooding, establishes the impact of the MP2 Project and proposes mitigation measures to minimise the flood risk. Flood risk to the proposed development is assessed in accordance with the methodologies set out in the Planning System and Flood Risk Management Guidelines (November 2009).

The River Liffey flows through the MP2 Project site. At this location, extreme flood events on the River Liffey are likely to be dominated by coastal flooding, so fluvial flood risk has not been considered further. Analysis of the extreme tidal water levels at Dublin Port determined the most up to date flood levels at the site. The predicted tidal water levels from this analysis are 3.325m OD (0.5% AEP) and 3.584m OD (0.1% AEP).

Present day flood zones are derived based on the predicted tidal water levels (not including climate change factors). A significant portion of the MP2 Project site is currently within the Present Day Flood Zones A & B, with the remaining areas in Flood Zone C. However, as part of the ongoing consented ABR Project, areas within the MP2 Project site will be infilled and raised from original ground levels to a level of 4.58mOD. These areas will be above the MP2 Project site specific analysis of predicted tidal flood levels and this will result in altering the Flood Zones. Therefore, post ABR Project Flood Zones are used as the basis for this MP2 Project assessment.

The proposed MP2 Project has a range of uses with varying degrees of vulnerability. Its land-based elements have been considered in accordance with the Planning Guidelines. The proposed land uses, and the types of developments proposed involve docks or dockside activities that require a waterside location, and so can be classed as 'Water-compatible development'. This type of development is considered appropriate in all flood zones, and therefore a Justification Test is not required to be completed.

While the combination of risk and vulnerability means that the development is generally acceptable, the risk remains and it may change during the lifetime of the development. Therefore, mitigation measures have been considered that will reduce that risk.

Tidal warning is the key mitigation measure for the MP2 Project site. Tidal levels around the coast of Ireland are currently monitored by OPW who issue high tide advisories so there will be sufficient warning of any extreme tidal events that are likely to impact on Dublin Port. In addition, there is a Dublin Bay tidal warning system (TRITAN) in operation by Dublin City Council. If an extreme event is forecast, any sailings from the port are likely to be cancelled. The entire port area will be at risk of flooding so it likely to have been closed and evacuated in accordance with existing emergency plans. Mitigation measures have also been proposed, where appropriate, to prevent vehicles and people remaining in the areas if an extreme tidal event is predicted. Whilst there will be no flood damage to the majority of the site, mitigation measures have been proposed to protect the existing terminal building.

Residual risk is the risk that remains after all mitigation measures have been taken to reduce the frequency of flooding. For some areas of the site, coastal flood risk will remain following completion of the development. However, it is assumed that, given the severity of the design event, sufficient warning will be given to evacuate the area. This means that there is a low likelihood of any of the potential flood risk areas being occupied. These areas are resilient to flooding in that no damage will be caused by the flooding. The areas where unaccompanied cars may be present before an event is predicted are located on the elevated areas of lowest 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. It should be noted that the existing terminal building remains at risk if the proposed flood proofing measures are not erected or if a more extreme event were to occur. The mitigation measures proposed 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.

An assessment of the change in wave climate resulting from the MP2 Project's marine works was also undertaken to determine any potential flooding impact on the landside port and adjoining receptors due to the development. Changes to the wave climate show no notable change in relevant areas such as Clontarf, Fairview and Ballybough bordering the Tolka Estuary. Changes in wave height within the Port are not significant. Therefore there is negligible change to the risk of potential coastal flooding due to the MP2 Project. No mitigation is therefore required in respect of the change in wave climate.

The proposed development is compliant with The Planning System and Flood Risk Management Planning Guidelines (2009).

10 AIR QUALITY & CLIMATE

This section assesses the impacts to air quality associated with the proposed development. It should be read in conjunction with the site layout plans and characteristics of the project.

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 development. 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 this assessment. The nearest sensitive residential receptors to the south of the proposed development are the residential dwellings on York Road, Pigeon House Road, Ringsend Park and Pembroke Cottages circa 400 metres to the south of the application boundary of the development. To the north of the development site there is the extensive residential area of Clontarf with the properties along Clontarf Road closest to the application boundary of the development at circa 450 metres.

DPC publishes an annual Sustainability Report to track and record progress on the ports environmental responsibilities. As part of the report a carbon footprint inventory of all port emission sources has been developed to track emissions and set ambitious targets to reduce emissions.

Construction dust has the potential to cause local impacts through dust nuisance at the nearest sensitive receptors and also to sensitive ecosystems. Given the nature of the port and the distance to sensitive receptors, there are no properties located within the dust risk impact zone and it is concluded that construction dust from the Project will be negligible for the duration of the works.

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. All dredged material will be barged to the dump site and will not travel by road. As the construction traffic volumes predicted with the MP2 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 construction phase climate assessment was carried out to identify sources and quantify total greenhouse gas emissions generated from the construction activities associated with the proposed development. The total estimated greenhouse gas emissions associated with the proposed construction of the development will result in a permanent slight adverse impact.

A prediction of the local impact of traffic-derived pollution during the operation phase was carried out and the results of the analysis of the proposed development and wider Masterplan traffic indicates that all levels of pollutants are predicted to remain within the limits for the protection of human health at residential areas along transport routes even with the full predicted growth in traffic by 2040. While the levels remain below the relevant limits these increases and air quality impact from this traffic are classed as negligible. This includes for the wider masterplan traffic and hence the cumulative traffic impact on air quality is also considered negligible.

Shipping emissions associated with the proposed development have been quantified based on the projected increases in shipping numbers at the port in 2040 both as a result of the MP2 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.

Greenhouse gas emissions from energy use at the port, as documented in the carbon footprint, are assessed through a review of the proposed changes to operations at the site to determine the potential for significant impact. The results of the assessment indicate that the total carbon emissions will increase with the proposed development in operation. These impacts are considered as permanent slight adverse impact.

11 NOISE & VIBRATION

11.1 Terrestrial Noise

A Noise and Vibration Assessment was completed to determine the likely noise and vibration impacts from the proposed redevelopment at the nearest sensitive receptors. This assessment included an appraisal of the likely noise and vibration impacts from the construction phase, an assessment of the construction and operational phase road traffic noise resulting from the proposed redevelopment and an analysis of operational phase noise associated with the proposed redevelopment.

As part of the noise and vibration assessment, 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 proposed development.

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 and are below the existing ambient noise levels at all of the nearest noise sensitive properties to the proposed redevelopment. Noise mitigation measures are included in the EIS to ensure that construction noise impacts are reduced to the lowest possible levels.

There will be no significant noise impacts associated with traffic flow changes as a result of the construction or operational phases of the proposed redevelopment. The traffic flow increases associated with the proposed development will result in neutral change to traffic noise levels.

There will be construction phase activities associated with the proposed redevelopment that have the potential to generate vibration impacts, most prominently the piling works required as part of the construction phase. The distance of the piling activities from the nearest sensitive properties will ensure that there is no significant vibration impact at these properties.

During the operational phase, there will be no significant operational phase plant/equipment noise impacts from the MP2 Project at the nearest noise sensitive properties.

11.2 Underwater Noise

It is important to note that the reference level used to calculate dB for airborne noise (Section 11.1) is different. The acoustic impedance of air and water are also different. These differences lead to a significant difference in decibel levels for the same sound pressure level in air and water. Decibel levels in water are significantly higher and cannot be compared directly to decibel levels in air.

Another important consideration in relation to underwater noise is that it is not a persistent pollutant, once the noise source ceases noise levels drop very quickly to pre-existing levels. The natural underwater soundscape is not silent, biological sounds from fish and marine mammals are mixed with sounds from waves and surface noise, current flow and turbulence and rain and storm noise. The natural ambient noise levels in coastal water, bays and harbours are subject to wide variations, particularly with breaking waves. Due to absorption by the

seabed and other losses, increased noise levels from the passage of a vessel in shallow water, such as Dublin Bay, lasts for a period of minutes. In deep open waters however shipping and other man-made noise can propagate over longer distances.

Underwater noise impacts were assessed by examining the receiving environment, quantifying the likely significant impacts, making recommendations for remedial measures, and recommending monitoring proposals for the MP2 Project. The methodology used for this assessment is consistent with best practice for underwater noise assessments and includes interaction with the benthic and marine mammal specialists.

The principal underwater noise impacts will arise from the following activities: ground investigation works to assess the nature of the seabed, demolition and excavation close to the Liffey channel, piling during installation of quay walls and jetties, dredging works including the disposal of the dredged material to the west of the Burford Bank and increased shipping traffic.

The receiving environment during the construction phase is an enclosed section of a busy port. Existing underwater noise levels in the area are elevated in the presence of shipping traffic but noise attenuates quickly due to absorption by the mud on the seabed. From an underwater noise perspective any sources of additional noise during construction will be confined to an area in the inner port and attenuate rapidly.

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 some six kilometres from the end of the Great South Wall, and more than eight kilometres from the nearest piling activity. The outer bay is also home to marine mammals, primarily the resident seal population and Harbour Porpoise associated with the nearby Special Area of Conservation. Existing underwater noise levels have been measured on and are reported in the main text (see Table 11-1).

Table 11-1 Underwater noise levels measured in the port area 2017

Source	North Wall Light		ESB Pontoon	
	SPL dBre: 1µPa @ 1m	SEL dBre: 1µPa ² -s	SPL dBre: 1µPa @ 1m	SEL dBre: 1µPa ² -s
Natural Background	150	<132	130-140	110-120
Shipping	165	150	165	150
Piling	180	140	-	-

The construction of the quay walls and berths will involve some marine traffic transporting materials but the most significant underwater noise element of the construction phase will be the piling requirement. The piling specification is similar to that currently being used in the ABR Project. The majority of the piles are sheet piles which will be driven using a vibratory pile driver. The proposed heavy tubular piles sink several metres vertically into the seabed when initially lowered. It is likely however that at least half of the tubular pile driving will require an impact hammer to drive the piles to the required depth. The total duration of the piling activity will be 20 months over 2-3 years with no riverside impact piling to take place between March and May along the River

Liffey. Impact piling is not a continuous activity, the likelihood is that even at peak requirement, the impact hammer will only be used for 30% to 50% of the day.

An underwater noise propagation model was used to predict the potential underwater noise impacts of the project. The propagation and sound exposure calculations were calculated in order to determine the likely range for injury and disturbance using well established modelling and injury criteria. The effect of directivity has a strong bearing on the calculated zones for injury and disturbance because a marine mammal with direct line of sight to the source will be exposed to greater noise levels than an animal without direct line of sight.

The Peak and SEL underwater noise levels have been predicted out to a range of 1400m. Due to the confined shallow space and the narrow channel width, the worst case impact zone is quite small in extent. The potential injury zones are summarised as follows:

- Potential discomfort to recreational divers limited to 1 km with clear line of sight;
- Potential injury to fish species is limited to 12 m from the source;
- Permanent Threshold Shift injury to marine mammals is limited to 1m from the source; and
- Disturbance to marine mammals is limited to 120 m from the source.

No recognised dive sites will be impacted by underwater noise from the project. No piling is carried out in the March to May period to protect migrating fish. Specific marine mammal mitigation measures and details of compliance with NPWS (2014) guidelines such as soft start, use of observers are specified in Chapter 7.

It is proposed that Underwater noise levels will be monitored during the construction period at a minimum of two locations upriver and two locations downstream of the works when works are being carried out in the navigation channel. Monitoring will be carried out at the commencement of the piling activity.

Any increase in underwater noise levels during construction can be considered as a not significant short-term adverse impact with no residual impact. The long-term impact from shipping traffic is likely to be neutral as any change in underwater noise from vessels is localised in shallow water and unlikely to affect the overall underwater noise level.

12 MATERIAL ASSETS - COASTAL PROCESSES

Coastal processes were assessed by undertaking an extensive programme of computational modelling. Baseline models were calibrated and verified against a range of project specific monitoring data and subsequently used to assess the construction and operational impacts of the MP2 Project. This was undertaken using RPS' in-house suite of MIKE coastal process modelling software, developed by the Danish Hydraulic Institute (DHI).

In respect to coastal processes, the potential impacts during the construction phase include:

- The dispersion and settlement of sediment plumes generated during dredging operations; and
- The dispersion of sediment material disposed of at the spoil site.

The potential operational impacts identified include:

- Changes to the tidal regime or inshore wave climate;
- Sediment dynamics and the morphological response of the seabed within Dublin Port; and
- Prevailing water levels and the existing flood risk in Dublin Port and the surrounding area

These potential impacts were assessed by comparing the differences between the post-project and pre-project conditions. The likelihood for significant impacts was then determined by considering these differences in relation to project specific monitoring data.

Construction Phase Impacts

Model simulations assessed the potential construction phase impact of the dredging operations at Berth 53, area of channel widening (south of the Liffey channel) and at Oil Berth 3 and Berth 50. This assessment found that:

- The concentrations of the sediment plumes generated during dredging operations lie within the background range of measured suspended solids during normal port operations.
- The deposition rate of silt lost to waters during dredging operations is significantly less than the natural sediment inputs from the upstream Liffey Channel.

Owing to the very small increase in suspended sediments, dredging operations are unlikely to have any effect on the quality of nearby intake waters. However, as customary, DPC will continue to notify the power station operators in advance of each dredging campaign. It was concluded that, when considered in terms of background conditions, the MP2 Project's dredging operations will not result in any significant impact to either water quality or nearby environmentally designated areas.

Model simulations determined the impact of the MP2 Project disposal operations at the licensed offshore disposal site found that these operations will not result in any significant increases to the background level of suspended sediments and will not, therefore, impact the water quality in the greater Dublin Bay area.

Operational Phase Impacts

In respect to the operational phase impact of the MP2 Project, results from the model simulations found that:

- The project will have very little effect on tidal currents within Dublin Port
- No notable changes to the tidal regime were detected outside of Dublin Port
- There was no discernible change in the wave climate in nearby areas including Clontarf, Fairview and Ballybough bordering the Tolka Estuary. The potential change in risk of coastal flooding due to the MP2 Project in these areas was therefore considered to be negligible.

The potential operational phase impact of ship movements in the area of Berth 53 was assessed using industry standard calculations. This assessment found that the neighbouring SPA could scour when ship bow thrusters operated at 100% which, in turn, could potentially affect the stability of the channel and the winter foraging areas within the Tolka Estuary.

Mitigation Measures and Residual Risks

To mitigate the potential impact of ship movements around Berth 53, a wash protection structure has been designed to reduce scouring. An assessment of this wash protection structure found that it effectively reduced scouring in the area of Berth 53 and did not impact on foraging areas within the Tolka Estuary.

The potential impacts of dredging and disposal operations will be mitigated by implementing the same mitigation measures as those developed for the Alexandra Basin Redevelopment (ABR) Project Construction Environmental Management Plan (CEMP). The ABR dredging campaign was fully compliant with the requirements of the Dumping at Sea, Foreshore and Planning Consents as reported in the Annual Environmental Report submitted to the Office of Environmental Enforcement (OEE).

In circumstances where the proposed mitigation measures are fully implemented during the construction and operational phases, the impact of the proposed MP2 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.

In summary, the MP2 Project is not expected to have a significant effect on coastal processes, flooding or make a significant change to the existing morphology.

13 MATERIAL ASSETS - TRAFFIC AND TRANSPORTATION

This chapter of the EIAR summarises the existing terminals, operators, berths, Dublin Port Estate accesses and approach roads relevant to the Traffic and Transportation Assessment (TTA) for the MP2 Project. The surveyed information allows the relationship between the vessel movements and traffic flows to be understood for Ro-Ro and Lo-Lo operations.

Aspects from the original Dublin Port Masterplan 2012-2040, the Dublin Port Masterplan 2040, reviewed 2018 and the accompanying Strategic Transportation Study suite of documents have been considered in the preparation of the TTA, where appropriate.

The TTA considers several schemes and transportation infrastructure improvements, both within the Port and its environs, which are of particular relevance to the TTA for the MP2 Project. They are:

- Consented road upgrade scheme within the Dublin Port Estate. This scheme is of vital importance to the vehicular and sustainable transport connectivity to the MP2 Project and it is therefore confirmed that this scheme will be complete and operational prior to the completion of the construction of the MP2 Project;
- The ABR Project and committed closure of the Port accesses along the East Wall Road;
- The opening-up of the Port Centre public realm scheme, currently complete and operational.

The vehicular accesses to both UFT and DFT are located a distance of c1.9km from the adopted road network.

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

- An Bord Pleanála (ABP);
- Transport Infrastructure Ireland (TII);
- Land Use, Planning and Transportation Section of the South Dublin County Council;
- Transportation Planning Division, Dublin City Council (DCC).

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

Sustainable and Active Travel

The high quality cycle and walking connections to the MP2 Project provided by the consented roads scheme within the Dublin Port Estate has been demonstrated, including:

- 4km Greenway along the northern shoreline overlooking the Tolka Estuary leading to a two-tier linear park at the east of UFT connecting the NTA's Dublin's Proposed National Cycle Network to the MP2 Project.
- Landmark cycle and pedestrian bridge across the Promenade Road Access;
- Enlarged Promenade Road Roundabout with segregated cycle/walkway.

An accessibility assessment was undertaken to establish the density of existing, consented and proposed sustainable travel and active transport provision serving the MP2 Project. The main components that provide a high level of accessibility for the MP2 Project are the:

- Consented active travel measures incorporated within the internal roads scheme to connect the MP2 Project to the City;
- Existing density of active travel facilities available in Dublin City Centre;
- Existing density of sustainable travel facilities in Dublin City Centre including bus, rail, DART and Luas;
- Existing provision of cycle locker facilities of the Port Centre public realm scheme to facilitate multi-modal journeys by sustainable travel;
- Proposal for DPC to subsidise the provision of a shuttle bus service to the MP2 Project;
- Proposed connectivity on foot and by cycle to the UFT footprint;

To ensure a high quality public transport service between the UFT and the density of sustainable transport services located at the perimeter of the Dublin Port Estate, DPC is prepared to provide finance, of up to €100,000 for a period of five years (€500,000 total) to a shuttle service operating to create a connection between the UFT, the DART in Clontarf and the LUAS at the Point. It would link into EastPoint Business Park, have multiple stops throughout the northern Port estate and connect with the ferry terminal building at UFT.

The MP2 Project will not impact on the potential extension of the Luas as currently included in NTAs Transport Strategy for the Greater Dublin Area for 2016-2035.

The MP2 Project does not affect the existing operations of the freight trains within the Dublin Port Estate. The proposed land elements of the works will not impede on the existing railway lines present within the MP2 Project site boundary.

An outline Mobility Management Plan (oMMP) has been developed which sets out the type of measures which will be adopted 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 MP2 Project. It is envisaged that the MMP for the UFT and DFT will, in the fullness of time, fall under the hierarchy of the Port wide Transport/Travel Plan as the Masterplan continues to be implemented over the next 21 years.

Traffic Impact Assessment Methodology

24 Junctions including the Dublin Port Estate, East Wall Road and the Dublin Port Tunnel, were surveyed for 24 hours on 23 May 2018 for a typical day with only a relatively small cruise vessel in Cruise Berth 18. Classified traffic turning count surveys were carried out, and supplemented with the following existing information:

- Existing queue length surveys;
- Dublin Port Tunnel and Toll Plaza surveys carried out in November 2017 for the Strategic Transportation Study;
- Camera footage of each junction,
- Traffic signal controller information from DCC for each signalised junction,

- Manifest of vessel movements at Dublin Port for the survey day;
- The websites www.vesselfinder.com and www.marinetraffic.com to monitor the vessel movements.

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.

Due to a unique set of circumstances that create an early internal traffic peak hour within the Port, driven by the Dublin City Centre HGV Management Strategy, 3 peak hour assessments have been taken forward for detailed traffic impact assessment:

- Internal Morning Peak Hour, 06:15-07:15, Referred to as AM1;
- External Morning Peak Hour, 07:30-08:30, Referred to as AM2;
- External Evening Peak Hour, 16:45-17:45, Referred to as PM.

An examination of the existing vessel movements demonstrated that the existing traffic from 3 Freight & Passenger Ro-Ro vessels are contained within each of the 3 peak hours being assessed.

Cordoned extracts from the NTA multi-modal model for Dublin City were combined with the latest traffic surveys to establish an existing origin-destination matrix for the existing Port traffic.

The Assessment Years 2026, 2031 and 2040 were selected.

The use of high growth rates from TII's Project Appraisal Guidance for National Roads Unit 5.3 have been applied to the non-Port traffic on the road network.

Port related traffic flows have been assigned the 3.3% per annum growth rate in accordance with the Average Annual Growth Rate between 2010 and 2040 at the Port as enshrined in the Dublin Port Masterplan 2040, reviewed 2018.

Considerable justification has been included in the TTA as to how the 3.3% per annum approach provides a robust assessment for the MP2 Project, just beyond the upper limit of what is physically achievable on the ground:

Future year existing traffic flows were derived by applying the differing growth rates to the Port and non-Port traffic flows.

Proposed Traffic flow models were built to include all of the consented and proposed changes at the Port which affect the road network.

Linked LinSig models were built to assess the impact of the traffic generated by the MP2 Project on the existing and committed road network.

The model results allow the following to be assessed:

- Assess arrangements to the MP2 Project, particularly the entrance barrier capacity at UFT and determine if accumulative queueing occurs;
- Determine if the consented internal road network can accommodate the traffic generated within the Dublin Port Estate, to which the MP2 Project contributes.

UFT - Barrier Capacity, Traffic Control and Contingency Measures

For a typical day, the combined 14 barriers collectively have sufficient capacity to accommodate the PCUs arriving at the UFT with no accumulative queueing occurring even at the end of the Masterplan in 2040.

Modelling has been based on 8 HGV barriers (the 6 dedicated HGV barriers, 2 of the dual use barriers being used for HGVs and the remaining 6 dual use barriers being used for non-HGVs). The model includes the signalisation of the Tolka Quay Road / Promenade Road Extension with pedestrian crossing facilities, and the entry and exit from the access road to the parking and set down / pick up area.

The Linked LinSig model results show that during the worst case peak hour, AM1 0615-1715, there is ample spare capacity at the 6 non-HGV barriers and spare capacity at each of the 8 HGV barriers with minimal queueing.

Sensitivity testing finds that even if a complete turnaround of the Terminal 1 parking and set down area occurred within the same worst case peak hour for freight movements, AM1 06:15-07:15, the proposed access and egress arrangements for the MP2 Project would continue to operate within capacity with minimal queueing.

This assessment has been based on 2 of the dual use barriers being used for HGVs and the remaining 6 dual use barriers being used for non-HGVs. Should demand be greater than expected, HGVs can be allocated to any of the 8 dual use barriers, ensuring that sufficient capacity is available.

In addition, there are a suite of measures available to DPC to control and manage the pattern of traffic arriving to, and the operations within, the UFT that can be utilised if necessary. A total of 36 gantries will be used to control and manage traffic flows at the Dublin Port Estate and for the MP2 Project; 11 consented on the Dublin Port Estate, 7 proposed for the MP2 Project and 18 indicatively included with UFT. UFT is a large footprint that will be capable of being adapted to the requirements of the trade to ensure that the needs of the UFT are continually met.

A stacking distance of 5.6km between the 14 entrance barriers to UFT and the Promenade Road Roundabout is considered comfortably adequate to provide contingency for occurrences such as technical faults and adverse weather conditions, minimising any inconvenience that could potentially be caused to the Promenade Road Roundabout or the external adopted road network.

Dublin Port Tunnel and Toll Plaza

The recent traffic survey reconfirmed the analysis carried out in the Strategic Transportation Study that the Dublin Port Tunnel is operating at approximately half of its modelled capacity. Within the NTA Regional Transport Model for the Greater Dublin Area, the Dublin Port Tunnel is coded with a capacity of 3,800 PCUs per hour per direction, and the data shows that even half of the one-way flow of 1,900 PCU/hour per direction was not exceeded on the day of the traffic survey.

The report finds that the 3,800 PCU lane capacity per direction, or a total 7,600 PCU per hour, and the capacity of the northbound Toll Plaza of 4,275 PCUs per hour, is not reached during any of the 3 peak hours for the Proposed Traffic flows in 2040.

The total of 84,996 PCUs per day does not exceed the 182,400 daily PCU capacity of the Dublin Port Tunnel, or even the capacity of 91,200 PCUs per direction.

In any case, TII are preparing plans for a major upgrade of the tolls at the Dublin Port Tunnel, including replacing the tolling related equipment and software at the Toll Plaza. The project is anticipated to go out to tender in Q3 2019, and the major upgrade is expected to result in the performance of the tolls to be significantly better than existing. Furthermore, TII are considering upgrading the toll collection system to be barrier free (or free-flow) in future years, likely to happen before the 2040 horizon year for the Masterplan.

It is therefore demonstrated that the Dublin Port Tunnel and the Toll Plaza have sufficient capacity to accommodate the MP2 Project.

Planning Gain to the External Road Network

The planning gain provided by DPC by closing the Dublin Port Estate accesses and removing traffic from the external road network has been demonstrated for each of the junctions along East Wall Road, even with the recent uplift in Port traffic from 2.5% per annum to 3.3% per annum, to which the MP2 Project contributes.

There are environmental benefits in reducing the number of large vehicles that travel along this section road, with associated noise & air pollution benefits and reduction in the wear & tear of the adopted carriageway.

In accordance with TII TTA Guidelines detailed modelling is not required on the external road network as the percentage impacts never exceed 5% or 10%.

The closure of the Dublin Port Estate accesses facilitates DCC to implement their potential scheme which, if realised, will provide enhanced walking and cycling crossing facilities along East Wall Road and replaces the Point Roundabout with a signalised junction. It has been highlighted that although the South Port Access Road (SPAR) is not part of the proposals for the MP2 Project, should it be realised in future years it will provide further planning gain this section of the adopted road network.

The camera footage confirmed that the freight train at Alexandra Road didn't enter or exit the Port during the peak traffic hours assessed, demonstrating that the operation of the train doesn't impact on the peak hour traffic flows along East Wall Road.

Modelling Results for the Internal Road Network

The modelling results demonstrate that the majority of the consented internal road network within the Dublin Port Estate will have comfortable capacity available to deal with the peak traffic flows even at the end of the Masterplan in 2040. This occurs even with the uplift in Port traffic from 2.5% per annum to 3.3% per annum, to which the MP2 Project contributes.

Note particularly that Junction 7, giving entry to the Port from the Dublin Port Tunnel, operates within capacity for all peak hours even at the end of the Masterplan period.

Junction 6, which is the signalised junction giving access to the Port from East Wall Road and providing an exit to the Dublin Port Tunnel, and Junction 17, the new roundabout located at the south of Bond Drive, will both be approaching capacity at the end of the Masterplan in 2040 during the AM1 peak hour.

The Linked LinSig results show that the consented Promenade Road Roundabout design at Junction 10 will be approaching capacity during the AM2 peak hour at the end of the Masterplan in 2040. The Promenade Road approach arm to the junction will exceed capacity sometime between 2031 and 2040 during the early morning peak hour AM1 and the PM peak hour.

The design of the consented roundabout has been based on the original AAGR at the Port of 2.5% rather than the current 3.3%, therefore the consented design comes to the end of its design life prior to the end of the Dublin Port Masterplan 2040, reviewed 2018. The Promenade Road Roundabout forms part of the SPAR and the upgrade of the roundabout junction will be considered as the Masterplan continues to be implemented. The SPAR is due to be operational by 2031, which coincides with the consented roundabout coming to the end of its design life. The situation is self-regulating. If the Masterplan doesn't continue to be implemented, the full growth potential won't be reached and the capacity of the consented roundabout will be adequate to accommodate the traffic generated by the ABR Project and MP2 Project.

In any case, the consented roundabout will have adequate capacity until at least 2031, which is comfortably within the 5 future year mitigation requirement as per the Chartered Institution for Highways and Transportation Guidelines for Traffic Impact Assessments. Additionally, there are a suite of measures available to the Port to control and manage the pattern of traffic arriving to the Port that can be utilised in future years as the current Masterplan comes towards the end of its lifespan, including:

- Close the barrier between the Port Estate and the Eastlink Business Park;
- Redevelopment of the 8 E Plots surrounding the roundabout primarily for the transit storage of unitised cargo;
- Demand management at peak times to control the level of traffic flows.

Cumulative Impact

An assessment has been carried out of the cumulative impact of the consented schemes within the environs of the MP2 Project. It has been demonstrated that:

- The suite of relatively minor consents within the Port are already inherently incorporated within the TTA by use of the 3.3% per annum growth rate applied to the Port-related traffic movements;
- The consented schemes located close to the Port boundary – Exo Building, North Lotts & Grand Canal Dock Planning Scheme 2014, and additionally the Poolbeg West Strategic Development Zone have also already been inherently considered in the TTA. These schemes will not be car based, and are considered to already be incorporated in the assessment by use of the robustly high level of traffic growth rates applied to the non-Port traffic flows;
- An examination of the traffic modelling results concludes that the consented internal network will have adequate capacity to accommodate either consented road design layout of No.2 Branch Road North Extension.

Construction Traffic

The anticipated peak HGV traffic volume will occur in Q2 of 2021 during which a peak of 17 HGVs per hour is estimated between 07:00am and 08:00am. This peak level of hourly construction traffic will be imperceptible to the external road network, no more noticeable than the ordinary daily fluctuations in traffic flows.

The MP2 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 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.

Overall Summary

A TTA has been carried out which has demonstrated that the existing, consented and proposed road network and transportation measures will accommodate the trips generated by the MP2 Project.

The existing, consented and proposed sustainable and active travel facilities provide a comprehensive suite of measures for users of the MP2 Project, including a €500,000 funding commitment from DPC for the new shuttle bus service to connect the MP2 Project to the Luas and the DART.

Detailed computer modelling has demonstrated that the proposed access arrangements for the MP2 Project, particularly the 14 UFT entry barriers, will have sufficient capacity with no accumulative queueing occurring at 2040, even under sensitivity testing.

Increased road capacity and planning gain will be provided on the external road network by the closure of the Port Estate accesses along East Wall Road, and though the SPAR is not part of the MP2 Project, should it be delivered in future years it will provide further capacity benefits along East Wall Road.

The Dublin Port Tunnel and Toll Plaza will have sufficient capacity at 2040 when the MP2 Project is complete and operational.

Detailed computer modelling has demonstrated that the consented internal road network will have sufficient capacity at 2040 to accommodate the traffic generated by the MP2 Project.

The consented Promenade Road Roundabout will exceed capacity until at least 2031 when a 3.3% pa growth rate is considered. The Promenade Road Roundabout forms part of the SPAR and the upgrade of the roundabout junction will be considered as the Masterplan continues to be implemented. The SPAR is due to be operational by 2031, which coincides with the consented roundabout coming to the end of its design life. The situation is self-regulating. In any case, the consented roundabout will have adequate capacity until at least 2031, which is comfortably within the 5 future year mitigation requirement as per the Chartered Institution for Highways and Transportation Guidelines for Traffic Impact Assessments. Additionally, there are a suite of measures available to DPC to control and manage the pattern of traffic arriving to the Port Estate that can utilised in future years as the current Masterplan comes towards the end of its lifespan.

14 CULTURAL HERITAGE (INCLUDING INDUSTRIAL & ARCHAEOLOGICAL)

This chapter of the EIAR presents the appraisal undertaken of the potential effects of the MP2 Project on cultural heritage assets, which was conducted to identify and record the location, nature, and dimensions of any archaeological and architectural features, fabric or artefacts that may be impacted by the MP2 Project.

Desk-based assessment was supported by new marine geophysical survey, a review of Site Investigations, topographic survey, walkover inspection, underwater inspections licensed by the National Monuments Service, and a conservation strategy and industrial heritage appraisal. The results inform the cultural heritage environment, to appraise the potential impacts and to present appropriate mitigation within the context of the MP2 Project.

There are two known wreck sites within the study area that lie north of and outside the development area, in the sandflats that are east of the Port area and north of the new Berth 53. The breakwater that defines the eastern limit for the nineteenth-century deepwater basin is the principal feature on the north side of the channel. The breakwater is registered as two elements; DCIHR 19-09-002 is the breakwater itself, constructed between 1858 and 1884, and DCIHR 19-09-003 is the site of the lighthouse, built c. 1884, that was located at its terminus. The breakwater lies under the active road surface that is Breakwater Road. The lighthouse does not survive in situ and was formerly a stone-built square-planned structure on which was placed the necessary lantern and bell. The lantern, its housing and the bell are retained within the Port and are to be reused sympathetically as part of the MP2 Project, reinstating a heritage element to the active port area. The terminus or Pier Head of the breakwater is stone-built and is constructed in the same manner as the North Quay Extension that was built under the direction of Port Engineer Bindon Blood Stoney, and it marks the original entrance to the deep-water basin of Dublin Port.

The assemblage of features on the south side of the channel comprise the Great South Wall (RMP DU019-029002, DCIHR 19-09-010, RPS 6797, RPS 6798) and the structures built on it. None of these elements will be impacted by the MP2 Project.

No defined anomalies indicative of shipwreck were identified in the marine geophysical survey, and no related material was identified in the Site Investigations logs or in the underwater inspections.

Detailed laser-scan and multi-beam surveys have recorded the Pier Head of the Eastern Breakwater to Level 4 Inventory standard as defined by English Heritage Recording Practice: Historic England, Understanding Historic Buildings, A Guide to Good Recording Practice, while underwater inspection has permitted additional observations to be made and completes a comprehensive survey of the structure.

The existing knowledge base highlights the historical associations of the land- and seascape that the MP2 Project is associated with. The area remained open water until the 1700s, populated only with mud- and sandflats that formed part of the delta that was the Liffey's estuary into Dublin Bay. From the 1700s, Dubliners began to engage with this area directly, motivated principally to ensure safe passage through the tidal shallows for shipping. It resulted in the construction of what was to become the Great South Wall on the south side of the

Liffey, and Pigeon House Harbour, from where packet ships would depart for Britain, while the Port's deepwater basin was developed on the north side.

A suite of new survey work has been conducted in order to identify and consider any potential cultural heritage impacts arising from the MP2 Project. There are not any striking in-water features of archaeological interest exposed on the seabed surface. The principal cultural heritage feature within the proposed development footprint is the nineteenth-century Eastern Breakwater of Alexandra Basin, which marked the original entrance to the deepwater basin of the Port.

The potential impacts on cultural heritage assets arising from the MP2 Project focus on works associated with ground disturbance activities on land that might expose elements of the Breakwater, which are assumed to remain undisturbed beneath Breakwater Road, and at sea that will necessitate the demolition of the Eastern Breakwater Pier Head to facilitate the construction of Berth 50A, along with capital dredging for the manoeuvring area, where the recovery of shipping debris and/or shipwreck can be anticipated from the previously un-dredged locations. The integrity and stability of the Great South Wall will be maintained. No impacts are predicted.

The principal mitigation during the project is for archaeological monitoring licensed by the National Monuments Service of ground and seabed disturbances, including site investigations, with the proviso to resolve fully any archaeological material observed at that point.

Demolition of the Eastern Breakwater Pier Head will remove the original entrance to the Port's deepwater basin from the land- and seascape of the Port. However, the careful recording of that structure prior to its demolition and the archaeological monitoring of its removal will provide the opportunity to enhance the record of the Pier Head and to understand how it was built. The granite will be salvaged and re-used in the public realm space that is to be created at the new eastern limit of the Port, where the former Pier Head and the Breakwater Lighthouse will be reconceived as part of an installation that celebrates the Port's cultural and natural heritage linked into the extension of a Greenway along the northern perimeter of the Port estate. The original location of the pier head will also be commemorated with an in situ text applied to the surface of the new quay wall, to be a permanent record of its former presence.

The EIAR has identified, recorded and assessed the cultural heritage assets and potential impacts associated with the MP2 Project. Existing records and newly-commissioned work present a robust baseline of information above and below the waterline. The principal cultural heritage constraint identified is the demolition of the Eastern Breakwater Pier Head, which was built in the nineteenth century to mark the original entrance to the Port's deepwater basin. Dublin Port Company has adopted a best practice approach to conservation on the site to preserve the cultural significance of Dublin Port as a Deep Water Port. Archaeological monitoring of ground and seabed disturbance activities will take place across the MP2 Project area, ensuring that a robust record is maintained and that any new archaeological observations are resolved fully.

15 LANDSCAPE & VISUAL

A Landscape and Visual Impact Assessment (LVIA) of the MP2 Project at Dublin Port during both the construction and operational stages has been completed.

The MP2 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 negligible and the significance of landscape impact will be negligible to minor negative and not significant.

The Zone of Theoretical Visibility (ZTV) has been established for the MP2 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 proposal due to intervening vegetation and buildings and it is only in close proximity to the site that there will be potential direct views at Ringsend to the southwest 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 and there will be few new features visible from the wider ZTV.

During the construction stage 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 impacts during the construction stage will be minor. There are limited residential dwellings in close proximity to the construction works, construction traffic will blend with existing busy traffic on adjacent roads and no significant visual impacts are predicted at the construction stage as a result.

During the operational stage of the MP2 Project it will be fully read in the context of same existing features at the site and with its urban surroundings with negligible change in landscape character.

For residential properties with potential views in the direction of the MP2 Project the predicted significance of visual impact will be minor negative and not significant.

A total of 15 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.

Overall the MP2 Project will be difficult to discern from the existing activities and features at Dublin Port.

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

16 POPULATION & HUMAN HEALTH

The population and health chapter applies a broad model of health that encompasses conventional health impacts such as disease, accidents and risk, along with wider health determinants (such as employment, and relating income generation) which contribute to good health and wellbeing.

The chapter uses information from the project description and related topic chapters (air quality, noise and transport) to communicate the potential impact on health and wellbeing.

Receiving Environment

Communities living within Dublin City show a relatively low burden of poor health and socio-economic circumstance comparative to the national picture. Male and female life expectancy are increasing, hospital admissions are generally similar to the national average, while mortality rates for respiratory and circulatory diseases are lower. However, certain statistics relating to mental health and lifestyle choices are more mixed.

On this basis, the local community surrounding the MP2 Project are not considered particularly sensitive to changes in environmental or socio-economic health determinants which are assessed.

Mitigation Measures

Mitigation measures adopted as part of the construction and operation of the facility focus on controlling and limiting environmental precursors to adverse population and health outcomes, such as using good construction practice measures. The population and health assessment takes these embedded mitigation measures into account.

There are also several design measures which seek to support good health and wellbeing during operation such as promoting active transport routes and providing recreational opportunities. Additionally, Dublin Port Company are exploring the provision of a suitable community gain initiative such as a city farm, which would have the potential to provide social health and wellbeing benefits by contributing to community cohesion.

Summary of Effects

The population and health construction and operational phase assessments looks at the potential impact on health from: changes in emissions to air; changes in exposure to noise; changes to transport nature and flow rate; and changes to socio-economic factors (such as employment and the economy).

During construction, population and health effects from changes in emissions to air, noise levels and transport nature and flow rates are not considered to be significant. This is primarily due to negligible changes in magnitude and the intermittent nature of the construction phase, meaning that any changes would not be sufficient to change health outcomes measured on a community-wide level. Regarding changes in socio-economic factors during construction (employment and contribution to the economy), there would be minor to moderate beneficial effects on the basis that labour will be required over a period of 11 years, and because the cost of construction materials would make a considerable contribution to the wider economy.

During operation, the maximum change in air pollution is predicted to be 1.09 µg/m³ for nitrogen dioxide and 0.43 µg/m³ for particulate matter (10 microns or less in diameter). These changes would be negligible as they would remain within air quality objectives and are not of a magnitude to change health outcomes measured on

a community-wide level. Impacts on health and wellbeing from changes in noise levels would also be negligible on the basis that the predicted change is not anticipated to be perceptible to the average person.

With the exception of the consented Promenade Road Roundabout, the capacity of the existing road network is considered sufficient to meet the forecasted increase in traffic volumes. In addition to the potential upgrade of the Promenade Road Roundabout, there are a number of measures that can be applied to ensure exceedances in capacity are well managed. Therefore, no significant adverse effects are anticipated. In addition, part of the MP2 Project would provide, and actively promote cycling/pedestrian routes and recreational opportunities in the port area. Overall there would be a net benefit to health and wellbeing through providing opportunity for recreation and physical activity.

Regarding changes in socio-economic factors during operation (employment and contribution to the economy), the growth in cargo capacity associated with the MP2 Project has the potential to generate a significant number of jobs at the port and within any associated industry beyond the port boundary. In addition, the growth in cargo capacity would contribute substantially to the wider economy not only through the import/export market, but also through increased tax revenue and tourism. The weight of these socio-economic changes would benefit health and wellbeing in the long-term on a national level. As a result, the significance of benefits associated with operation of the MP2 Project can be considered major.

Conclusion

The overall effects on population and health would be positive as the ranging beneficial changes to socio-economic factors and their impact on health and wellbeing outweigh the negligible adverse changes to environmental determinants.

17 WASTE

A review of the potential waste streams generated during the construction and operation of the MP2 project was undertaken as part of the assessment in relation to waste management. 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 effects has been identified.

The proposed MP2 development 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.

Localised demolition of 5 existing terminal buildings/structures, the Port Operations Centre, the Pier Head, southern end of the Eastern Oil Jetty and internal roads and fences will be required. It has been estimated that the localised demolition will generate approximately 17,640 m³ Construction and Demolition waste (CDW) materials. Approximately 7,000 m³ of masonry units from the Pier Head will be carefully removed and salvaged for relocation elsewhere on site.

The proposed works to be carried out includes infilling of the basin at Oil Berth 4 with engineered fill material and suitable CDW arising from the proposed demolition works within the footprint of MP2 Project development area. The void between the existing Oil Berth 3 and the proposed new sheet pile wall and the bridging structure in Berth 50A will also be filled with engineered fill material. CDW will be subject to treatment at the site prior to recovery in Oil Berth 4 which will require a waste permit. Should the phasing of the works not facilitate the recovery of CDW within Oil Berth 4 then management routes for the material will be sought, with the worst case scenario being that this material is deposited in a landfill. Therefore the effect of the demolition phase is deemed as slight or moderate dependant on whether the material is used as fill for Oil Berth 4 or not.

In terms of the overall impact of the construction stage, a carefully planned approach to waste management and adherence to the CEMP and C&D Waste Management Plan during the construction phase will ensure that waste arisings are minimised and any waste arisings produced during this phase will be recycled or recovered where possible. Contractors working on the site during the works will be responsible for the collection, control and disposal of all wastes generated by the works and the contractor will meet all legal requirements. All wastes will be managed off site under the principles of the waste management hierarchy. There is available capacity within the existing waste management infrastructure in the Region to manage CDW from the proposed development works. Therefore the effect of the construction phase in relation to waste management is deemed as neutral.

DPC currently operates a port waste management plan 'Dublin Port Ship's Waste Management Plan' 2017. The Waste Management Plan underpins all waste related operations at Dublin Port.

DPC will continue to review and implement any required changes in this Waste Management Plan in order to avoid and minimise the potential effects of vessel generated wastes once operational. DPC will continue to provide adequate reception facilities and remove, as far as is practicable, any disincentives to landing waste in the port. DPC will continue to encourage the responsible management of waste, including minimisation and

recycling, at the point of generation on ships, reception in ports/harbours, transportation and disposal, and ensure that port and harbour employees and users dispose of wastes responsibly in facilities provided. While there may be a minor increase in waste arisings due to anticipated increased usage of the unified passenger terminal, there will be no discernible effects to waste management once operational due to recycling and reuse policies, procedures and the implementation of the Waste Management Plan. There is capacity within the existing waste management infrastructure to manage waste arising from the operational phase of the development works. Therefore the effect of the operational phase in relation to waste management is deemed as neutral.

18 CUMULATIVE EFFECTS

The cumulative effects and environmental interactions of the MP2 Project's construction and operational stages were assessed. Cumulative effects are long-term changes that may result when the MP2 project is considered, combined with, other developments in the area. Environmental interactions are inter-relationships and interactions, between all environmental aspects within the MP2 Project. These assessments ensure that the combined and overall effects of the MP2 Project, and other influences, are assessed together, and not as isolated Projects.

Environmental Interactions between MP2 and Projects in the same area

The potential cumulative effects of consented schemes nearby the MP2 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 gives rise to additional levels of significance.

The most significant nearby Project identified was the ABR Project. The three key environmental factors with potential cumulative effects with the MP2 Project were: Biodiversity; Water Quality; Traffic and Transportation.

Construction and operation phase mitigation measures were identified to prevent the potential interaction of cumulative effects on both Biodiversity and Water Quality. For example, the potential cumulative effects resulting from dredging and disposal operations required inclusion of mitigation measures to temporarily separate operations. This means that the dredging element of the MP2 will not overlap with ABR capital dredging and/or DPC maintenance dredging campaigns, thus reducing potential impacts to water quality, habitat deterioration, underwater noise and biodiversity. A traffic assessment was undertaken and considered the potential cumulative effects of the consented schemes surrounding the MP2 Project on traffic and transportation. The assessment factored in 3.3% yearly growth of port-related traffic movements, to allow for continued growth in line with Dublin Port's Masterplan. This assessment concluded that the MP2 Project would not result in any cumulative effects on road traffic when considered in combination with consented developments and the future growth of Dublin Port.

Another significant interaction is the MP2 Project in combination with the Dublin Port Internal Road Network (3084/16). The interaction relates to the construction and operation of MP2 in combination with the Dublin Port Greenway. Both projects have the potential to cause disturbance to bird populations using the Tolka estuary during periods of very low spring tides (approximately 40 occasions a year). The following mitigation measures will be applied to reduce the impact of MP2 and therefore reducing the cumulative effects when considered in combination with the Internal Road network:

- Construction of Berth 53 will temporarily cease during periods of low spring tides to avoid disturbance at feeding grounds within the Tolka Estuary.
- Gates will be used at the site of the Greenway to control the movement of people during periods of low spring tides, again, to avoid disturbance at feeding grounds within the Tolka Estuary. This will avoid any effects of human disturbance on the birds.

Interaction between the various impacts within the MP2 Project.

The potential interactions between environmental aspects arising from within the MP2 Project were assessed. Each technical 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 MP2 Project. The cumulative assessment identified many potential inter-relationships and inter-actions. Additional mitigation measures were included to minimise and/or off-set the potential for significant effects resulting from such inter-actions.

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 system 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.

All potential cumulative effects and environmental interactions of the MP2 Project's construction and operational stages are included in Chapter 18. All mitigation measures for the MP2 project resulting from the individual assessments, and the cumulative effects and environmental assessment are listed in detail in Chapter 19 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.

19 SUMMARY OF MITIGATION MEASURES

DPC seeks to achieve the highest possible standards of environmental management during both the construction and operational phases of the MP2 Project. A summary of all mitigation measures and monitoring requirements proposed within the Environmental Impact Assessment Report (EIAR) are contained in this Section.

19.1 Construction Phase Mitigation Measures

The EIAR assesses the likely significant effects of the MP2 Project on the environment arising from the construction of the MP2 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. 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 MP2 Project.

Table 19-1 summarises the mitigation measures and monitoring programmes recommended within the EIAR during the construction phase of the MP2 Project. All mitigation measures proposed within the NIS have been captured by the EIAR.

Table 19-1 Mitigation measures and monitoring recommended within the EIAR

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.	<ul style="list-style-type: none"> The design of the MP2 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 Calor (and other COMAH) establishments. Based on this conservative assessment, it is considered that the final design layout of the MP2 Project would satisfy the HSA’s criteria under its land use planning guidelines. The MP2 Project will therefore not increase the risk of major accidents and disasters. To remain vigilant, DPC has developed a comprehensive Emergency Management Plan (see Appendix 6 of this EIAR) that caters for the range of accident and emergency events 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).
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
	<ul style="list-style-type: none"> 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. DPC's Emergency Management Plan competencies are continuously enhanced through participation in training and exercises at different levels.
<p>Chapter 7 BIODIVERSITY, FLORA & FAUNA</p>	
<p>No regulated invasive plant species listed in the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011, as amended, were identified on site during baseline habitat surveys of the site in 2018 and 2019. Nevertheless, a precautionary approach will be undertaken to prevent the importation and spread of Invasive Alien Species</p>	<ul style="list-style-type: none"> An 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 Appendix 19.2 of this EIAR. 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 if any IAS are identified. <p><u>Prevention</u></p> <ul style="list-style-type: none"> 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 into, within or out of the operations area. Measures to be implemented shall include: <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
	<ul style="list-style-type: none"> – Inclusion of IAS awareness in toolbox talks using visual aids to identification for 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> <ul style="list-style-type: none"> • 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: <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>	<ul style="list-style-type: none"> • A Bird Management Plan will be implemented for the duration of the proposed construction works. A draft Bird Management Plan is presented in Appendix 19.7 of this EIAR. • 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 <ul style="list-style-type: none"> – Black Guillemots – nest-boxes and other artificial nest sites will be provided prior to construction; – Breeding Terns – the capital dredging scheme will be confined to the winter months (October – March) when the terns have migrated from the site. • The following precautionary measures will be undertaken to minimise the risk of injury or disturbance to non-breeding waterbirds in the area of operations

Potential Impact	Summary of Proposed Mitigation
	<ul style="list-style-type: none"> – Construction of Berth 53 and the heritage installation will temporarily cease during periods of greatest low spring tides when bird feeding grounds adjacent to Berth 53 in the Tolka Estuary are exposed to avoid disturbance of birds; – Gates will be used at the site of the Greenway to control the movement of people during the periods of low spring tides above, again, to avoid disturbance at feeding grounds within the Tolka Estuary. <p><u>Monitoring</u></p> <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 MP2 Project and for a period of two years after the completion of such works. The results of this monitoring programme will be submitted to Dublin City Council at 12-monthly intervals to maintain a public record. • DPC will also continue to undertake a programme to monitor winter wetland birds in the adjacent European Sites at the South Dublin Bay and River Tolka Estuary Special Protection Area. 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 Dublin City Council 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>	<ul style="list-style-type: none"> • A Marine Ecology Management Plan will be implemented for the duration of the proposed construction works. A draft Marine Ecology Management Plan is presented in Appendix 19.7 of this EIAR. • A Dredging Management Plan will also be implemented for the duration of the proposed construction works. A draft Dredging Management Plan is presented in Appendix 19.10 of this EIAR. • The following key mitigation measures apply to the Capital Dredging Scheme to minimise the impact of the proposed works on marine ecology <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; – 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; – The 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;

Potential Impact	Summary of Proposed Mitigation
	<ul style="list-style-type: none"> – A trailer suction head 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, equivalent to approximately of 2,030 tonnes (wet weight). • The following key mitigation measures apply to piling activities to minimise the impact of the proposed works on fisheries: <ul style="list-style-type: none"> – No piling will take place along the riverside of the Liffey channel during the three months of the year when smolts are likely to run in their highest numbers (i.e. March to May inclusive). This recognises the smaller size of smolts compared to returning adults and lamprey. It also takes account of the fact that smolts have a swim bladder which likely makes them more susceptible than lamprey to pressure trauma due to piling noise.
<p>Precautionary measures will be undertaken to minimise the risk of injury or disturbance to marine mammals in the area of operations</p>	<ul style="list-style-type: none"> • A Marine Mammals Management Plan will be implemented for the duration of the proposed construction works. A draft Marine Mammals Management Plan is presented in Appendix 19.6 of this EIAR. • 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) <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

Potential Impact	Summary of Proposed Mitigation
	<p>be employed following the pre-start monitoring. Underwater acoustic energy output will commence from a lower energy start-up and thereafter be allowed to 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. - Any approach by marine mammals into the immediate (<50m) works area will be reported to the National Parks and Wildlife Service. <ul style="list-style-type: none"> • 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) through the deployment of CPODs 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. • The deployment of a SAM system will complement and extend the extensive database currently being collected as part of the ABR Project environmental monitoring programme.
<p>Chapter 8 SOILS, GEOLOGY, HYDROGEOLOGY</p>	
<p>The potential risk to construction workers from contaminants during the earthworks is low.</p>	<ul style="list-style-type: none"> • Fill material will be sourced from authorised quarries and will have minimal potential to introduce contamination onto the site.
<p>Chapter 9 WATER QUALITY and FLOOD RISK</p>	
<p>Mobilised suspended sediment and cement release through construction and demolition activities are the principal potential sources of water quality impact</p>	<ul style="list-style-type: none"> • A Water Quality Management Plan will be implemented for the duration of the proposed construction works. A draft Water Quality Management Plan is presented in Appendix 19.9 of this EIAR.

Potential Impact	Summary of Proposed Mitigation
<p>during the construction phase of the works.</p>	<ul style="list-style-type: none"> • The following precautionary measures will be undertaken to minimise the risk of impacting on water quality within the receiving environment: <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. – 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 draft 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 Appendix 19.11 of this EIAR)
<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>	<ul style="list-style-type: none"> • The following precautionary measures will be undertaken to minimise the risk of impacting on water quality within the receiving environment <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: bundled

Potential Impact	Summary of Proposed Mitigation
	<p>designated concrete washout area; closed circuit wheel wash etc.; and initial siting of any concrete mixing facilities such that there is no production within a minimum of 10 metres from the aquatic zone;</p> <ul style="list-style-type: none"> – 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 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 following precautionary measures will be undertaken to minimise the risk of impacting on water quality within the receiving environment <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 waste water) 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 PPG 26 “Safe storage – drums and intermediate bulk containers” (Environment Agency, 2011) shall be implemented to ensure safe storage of oils and chemicals; – The safe operation of refuelling activities shall be in accordance with PPG 7 “Safe Storage – The safe operation of refuelling facilities” (Environment Agency, 2011).

Potential Impact	Summary of Proposed Mitigation
<p>Drainage systems need to be designed to prevent the release of polluted water to the receiving waters.</p>	<ul style="list-style-type: none"> • The following precautionary measures will be undertaken to minimise the risk of impacting on water quality within the receiving environment <ul style="list-style-type: none"> – Storm water runoff will be collected in a dedicated storm water drainage system and will not be permitted to discharge directly into the marine environment from new jetties and hardstanding areas. The surface water drainage system will consist, inter alia, of heavy duty gullies cast into the reinforced concrete deck, with concrete pipes cast into the in-situ concrete deck structure. These pipes will carry the storm water into an appropriate full retention oil separator which will trap oils and silts prior to being discharges into the harbour waters through a non-return flap valve. A readily and safely accessible monitoring chamber will be provided on the storm water pipeline as appropriate to allow for inspection and sampling of the storm water being discharged, – The oil interceptors on the surface water drainage network will be selected and sized based on the pollution prevention guideline: “Use and design of oil separators in surface water drainage systems: PPG3” (Environment Agency, 2006) and BS EN 858 which is the European Standard for the design, performance, testing, marking and quality control of separators within the EU. All separators must comply with this standard. In accordance with PPG3 a class 1 bypass separator will be required for general and car parking areas of the site whilst a class 1 full retention separator will be required for the HGV parking and loading area. Notwithstanding this, full retention separators are proposed for each phase of the development and will be sized in accordance with a design flow of 590l/s for a six hour duration storm and the drainage area to be serviced.
<p>Monitoring Measures</p>	<ul style="list-style-type: none"> • 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 MP2 Project. <ul style="list-style-type: none"> – It is proposed to maintain the four water quality monitoring stations already in position for the ABR Project – The specification is based on state of the art 24/7 real time monitoring with water quality monitoring sensors giving high resolution data with respect to the following parameters <ul style="list-style-type: none"> ○ Turbidity ○ -Dissolved Oxygen ○ Temperature ○ Salinity ○ - pH (additional proposed parameter)

Potential Impact	Summary of Proposed Mitigation
	<ul style="list-style-type: none"> – 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, – A data acquisition and transfer system is being used to enable the transmission of high resolution data at approximately 15 minute intervals. – The following trigger levels that will prompt investigation are proposed: <ul style="list-style-type: none"> ○ Dissolved Oxygen level falling below 6 mg/l. ○ Peak Suspended Solids level rising more than 100mg/l above background (Based on the Turbidity v Suspended Solids relationship previously established this is equivalent to an Turbidity increase of 40 NTU above background) – The Dissolved Oxygen trigger level has been selected to safeguard fish-life. – The monitoring network infrastructure has been in place since 2016 and will continue for the duration of the construction phase of the MP2 Project. – 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. – 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 MP2 Project – The data collected is also being shared with research organisations (Dublin City University, Maynooth University and University College Cork).
Chapter 10 AIR QUALITY & CLIMATE	
<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>	<ul style="list-style-type: none"> • A draft dust minimisation 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 Appendix 19.5 of this EIAR).

Potential Impact	Summary of Proposed Mitigation
	<ul style="list-style-type: none"> • The following precautionary measures will be undertaken to minimise the potential nuisance caused by dust at the nearest sensitive receptors and on sensitive ecosystems <ul style="list-style-type: none"> – Site roads shall be regularly cleaned and maintained as appropriate. Hard surface roads shall be swept to remove mud and aggregate materials from their surface while any un-surfaced roads shall 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. – Wheel washes shall be self-contained systems that do not require discharge of the wastewater to water bodies; – Public roads outside the site shall be regularly inspected for cleanliness and cleaned as necessary; – Material handling systems and site stockpiling of materials shall be designed and laid out to minimise exposure to wind; – Water misting, or sprays shall 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 is kept to a minimum; and – Monthly monitoring of dust deposition levels each month 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>	<ul style="list-style-type: none"> • A draft Odour Management Plan (OMP) has been prepared and follows the guidance presented in the Environment Agency of England and Wales “Odour Management Guidance” (H4 Guidance, 2011) (see Appendix 19.5 of this EIAR). The odour monitoring and investigation

Potential Impact	Summary of Proposed Mitigation
	<p>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. <ul style="list-style-type: none"> • 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>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 material and personnel to the construction site.</p>	<ul style="list-style-type: none"> • Mitigation measures to minimise CO₂ emissions from the construction phase include the following: <ul style="list-style-type: none"> – Consultation with a wider variety of internal and external stakeholders to ensure all relevant information is included in the development of the plans; – Implementation of a Traffic Management Plan which will form part of the specification for the construction works. This will outline measures to minimise congestion and queuing, reduce distances of deliveries and eliminate unnecessary loads; – Reducing the idle times by providing an efficient material handling plan that minimizes the waiting time for loads and unloads. Reducing idle times could save up to 10% of total emissions during construction phase; – Turning off vehicular engines when not in use for more than five minutes. This restriction will be enforced strictly unless the idle function is necessary for security or functionality reasons; – Regular maintenance of plant and equipment. Technical inspection of vehicles to ensure they will perform the most efficiently. • Materials with a reduced environmental impact will be incorporated into the construction design through re-use of materials or incorporation of recycled materials in place of conventional building materials. The following materials will be considered for the construction phase:- <ul style="list-style-type: none"> – Ground Granulated Blast Furnace Slag (GGBS) & Pulverised Fuel Ash - Used as replacements for Portland cements to increase sustainability and carbon footprint of civil and structural works; – Steel - The recovery rates associated with using recycled steel are high and research exists which shows that 99% of structural steel arising from demolition sites is recycled or re-used. The carbon

Potential Impact	Summary of Proposed Mitigation
	<p>emissions emitted during the production of virgin steel can be higher than some other structural materials on a tonne by tonne basis, and recycled steel will be used where possible.</p> <ul style="list-style-type: none"> • An The Energy Management system will include the following measures as:- <ul style="list-style-type: none"> – The use of thermostatic controls on all space heating systems in site buildings to maintain optimum comfort at minimum energy use; – The use of sensors on light fittings in all site buildings and low energy lighting systems; – The use of adequately insulated temporary building structures for the construction compound fitted with suitable vents; – The use of low energy equipment and “power saving” functions on all PCs and monitors in the site offices; – The use of low flow showers and tap fittings; – The use of solar/thermal power to heat water for the on-site welfare facilities and contamination unit (sinks and showers).
Chapter 11 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.</p>	<ul style="list-style-type: none"> • A Noise Management Plan will be implemented for the duration of the proposed construction works. A draft Noise Management Plan.is presented in Appendix 19.4 of this EIAR. • <i>British Standard BS5228:2009+A1:2014 – Noise and vibration control on construction and open sites: Part 1 - Noise</i> outlines a range of measures that will be used to reduce noise impacts at the nearest noise sensitive receptors. The measures, which will be applied, include: <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, – Machines in intermittent use will be shut down in the intervening periods between work,

Potential Impact	Summary of Proposed Mitigation
	<ul style="list-style-type: none"> – 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 potential for underwater noise as a result of piling activities.</p>	<ul style="list-style-type: none"> • The use of vibratory piles for a substantial portion of the piling requirements will reduce impact driving. • 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>Monitoring Measures</p>	<ul style="list-style-type: none"> • Continuous terrestrial noise monitoring will be undertaken for the duration of the construction works in accordance with BS7445: Description and Measurement of Environmental Noise. <ul style="list-style-type: none"> – 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. – The number and location of noise meters will be agreed with Dublin City Council. These will operate for the entire duration of the construction phase. 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 the MP2 Project subject to approval as above. A second monitoring station is proposed at Clontarf, representative of nearest sensitive noise receptors to the north of the MP2 Project site. – 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 Management Plan. This will also include any liaison requirement with Dublin City Council in this regard.

Potential Impact	Summary of Proposed Mitigation
	<ul style="list-style-type: none"> – 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, Dublin City Council 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. – Interim synoptic reports will be produced on a regular basis, usually calendar months, and submitted to Dublin City Council and the project liaison group. – 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. • Underwater noise surveys will be undertaken during the construction phase of the works: <ul style="list-style-type: none"> – 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 for the ABR Project. This will provide additional validation of the underwater noise modelling and to ensure the underwater noise levels are contained within the operations area of the port, – Underwater noise surveys will be undertaken during the construction period at a minimum of 2 locations upriver and two locations downstream of the works when being carried out in the navigation channel. Monitoring will be carried out at the commencement of the piling activity.
Chapter 12 COASTAL PROCESSES	
<p>Potential impact of Berth 53 upon tidal current speeds resulting in erosion of bed levels and a localised modification of the lowest astronomical tide mark. This has the potential to impact upon the winter foraging areas within the South Dublin Bay and Tolka Estuary SPA.</p>	<ul style="list-style-type: none"> • The potential impact of Berth 53 on tidal currents and the movement of sediments was modelled and this process informed the final open piled berth design to mitigate any impact on the morphology of the South Dublin Bay and Tolka Estuary SPA. • A wash protection structure has been designed to reduce high thruster jet velocities associated with manoeuvring vessels, again to mitigate any impact on the morphology of the South Dublin Bay and Tolka Estuary SPA. • This mitigation by design has reduced the potential impact of the MP2 Project on coastal processes to an imperceptible level.

Potential Impact	Summary of Proposed Mitigation
Chapter 13 TRAFFIC & TRANSPORT	
<p>There will be an increase in construction traffic during the construction phase of the development.</p>	<ul style="list-style-type: none"> • 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 Appendix 19.1 of this EIAR. • The following mitigation measures will be applied: <ul style="list-style-type: none"> – Adhering to the Dublin City Council HGV Management Strategy; – A pre-defined haulage route will be agreed with Dublin City Council to avoid construction traffic through sensitive road networks at critical times; – Time restrictions will be implemented relating to construction vehicles on the adopted road network, – 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.
Chapter 14 CULTURAL HERITAGE (including Industrial & Archaeological)	
<p>There is a need for an overarching Archaeology and Cultural Heritage Management Plan to be implemented during the construction phase</p>	<ul style="list-style-type: none"> • An Archaeology and Cultural Heritage Management Plan will be implemented for the duration of the proposed construction works. A draft Archaeology and Cultural Heritage Management Plan is presented in Appendix 19.8 of this EIAR.
<p>Ground disturbance activities have the potential to expose elements of the 19th Century Breakwater which are assumed to remain undisturbed beneath Breakwater Road.</p>	<ul style="list-style-type: none"> • 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>The construction of Oil Berth 3 will necessitate the reclamation of the sea pocket that accommodates the Pilot Boat pontoon, and the five ship's timber and one metal piece that are in temporary storage under the pontoon.</p>	<ul style="list-style-type: none"> • There are five ship's timbers and one metal piece located in temporary wet storage under the Pilot Boat pontoon which will be removed to the secure Heritage Zone area for the ABR Project, where they will be placed in water-filled tanks.
<p>It is necessary to demolish the Breakwater terminus or Pier Head to facilitate the construction of Berth 50A.</p>	<ul style="list-style-type: none"> • Prior to demolition works commencing, the 3D record of existing structure and associated features will be amended where necessary to ensure that the permanent outputs can produce metrically accurate plan, elevation and section drawing information at 1:20 scale. • Archaeological monitoring licensed by the National Monuments Service will be conducted of all ground disturbances, with the proviso to resolve

Potential Impact	Summary of Proposed Mitigation
	<p>fully any archaeological material observed at that point. The archaeologist will be facilitated by DPC to complete a comprehensive record of any archaeological features that become exposed in the course of the construction works.</p>
<ul style="list-style-type: none"> The extension of capital dredging into the south side of the localised channel widening area represents direct and permanent impacts on what appears to be previously undredged locations. It is a area of high archaeological potential and the recovery of shipping debris and/or shipwreck must be anticipated. 	<ul style="list-style-type: none"> 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. 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>Monitoring Measures</p>	<ul style="list-style-type: none"> Retaining an Archaeologist: <ul style="list-style-type: none"> An archaeologist experienced in maritime archaeology will be retained for the duration of the relevant works. Retaining a Heritage Architect: <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. Archaeological Licences: <ul style="list-style-type: none"> 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. Archaeological Monitoring: <ul style="list-style-type: none"> 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. 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. The monitoring will include a finds retrieval strategy that is in compliance with the requirements of the National Museum of Ireland.

Potential Impact	Summary of Proposed Mitigation
	<ul style="list-style-type: none"> • Time Scale: <ul style="list-style-type: none"> – 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. • Discovery of Archaeological Material: <ul style="list-style-type: none"> – 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. • Archaeological Material: <ul style="list-style-type: none"> – 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. • Archaeological team: <ul style="list-style-type: none"> – 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. • Archaeological Dive Team: <ul style="list-style-type: none"> – 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. • A Site Office: <ul style="list-style-type: none"> – A site office and facilities will be provided by DPC on site for use by archaeologists. • Secure Wet Storage: <ul style="list-style-type: none"> – 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. • Buoying/Fencing: <ul style="list-style-type: none"> – Buoying/fencing of any such areas of discovery will be necessary if discovered and during excavation. • Machinery Traffic: <ul style="list-style-type: none"> – Machinery traffic during construction will be restricted to avoid any identified archaeological site/s and their environs.

Potential Impact	Summary of Proposed Mitigation
	<ul style="list-style-type: none"> • Spoil: <ul style="list-style-type: none"> – Spoil will not be dumped on any of the selected sites or their environs. • Post-construction Project Report and Archive: <ul style="list-style-type: none"> – 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.
Chapter 15 LANDSCAPE & VISUAL	
<p>There are no significant landscape or visual impacts predicted for the MP2 Project.</p>	<ul style="list-style-type: none"> • The following measures have been incorporated within the engineering design to offset the landscape and visual impact: <ul style="list-style-type: none"> – Integration of constructed elements with existing elements such as existing roads and building sites; – Appropriate colour of fencing and structures; – Use of directional lighting.
Chapter 16 POPULATION & HUMAN HEALTH	
<p>Embedded mitigation measures</p>	<ul style="list-style-type: none"> • 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. • 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 MP2 Project construction phase are captured.
Chapter 17 WASTE	
<p>Waste will be generated during the demolition phase of the works</p>	<p><u>Main Works Contractor</u></p> <ul style="list-style-type: none"> • A Main Works Contractor (MWC) Environmental Co-ordinator/Waste Manager will be appointed. The MWC will ensure that demolition wastes will be collected by an appropriately licensed waste management Contractor and that all proposed management routes comply with the European 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

Potential Impact	Summary of Proposed Mitigation
	<p>transported and disposed or recovered through licenced operators and in accordance with national waste legislation.</p> <p><u>Demolition Survey</u></p> <ul style="list-style-type: none"> • A Demolition Survey is required prior to any demolition work being undertaken. 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. The Demolition Survey will also include intrusive surveying with sampling which will identify the exact extent and location of any asbestos containing materials (ACMs) in the building. Removal offsite of any ACMs from the buildings to be demolished will be required prior to demolition. <p><u>Segregation & Storage of demolition materials</u></p> <ul style="list-style-type: none"> • Demolition debris will be separated into five waste streams on-site: <ul style="list-style-type: none"> – Construction debris (i.e. ceramics, tiles, plasterboard), – Masonry materials (i.e. brick, concrete blocks) – Metals, – Timber, – Universal waste (i.e. fluorescent bulbs, ballast and mercury containing switches). • On-site segregation of all hazardous waste materials into appropriate categories will be undertaken: <ul style="list-style-type: none"> – Waste oils and fuels; – Paints, glues, adhesives and other known hazardous substances. • 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><u>Reuse of demolished material on-site</u></p> <ul style="list-style-type: none"> • 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. • Under certain circumstances and in order that uncontaminated excavated soil and stone is beneficially used on-site, DPC and its MWC

Potential Impact	Summary of Proposed Mitigation
	<p>may decide in accordance with the conditions of article 27 of the European Communities (Waste Directive) Regulations 2011, S.I. No. 126 of 2011 that such material is a by-product and not a waste and will notify the Environmental Protection Agency for a determination.</p> <ul style="list-style-type: none"> • It is proposed the following areas will be infilled using engineered fill material and suitable CDW arising from demolition works within the footprint of the development: <ul style="list-style-type: none"> – Basin of Oil Berth 4, – Void between the existing Oil Berth 3 and the proposed new sheet pile wall, – Bridging structure in Berth 50A. • A waste permit will be required for the infilling of <50,000 tonnes of CDW into Oil Berth 4. • CDW may be subject to treatment at the site prior to recovery in Oil Berth 4. Mobile plant may be installed to crush and screen suitable CDW. The operations will be as follows: <ul style="list-style-type: none"> – Loading; – Crushing and grinding; – Screening; – Unloading; – On-site off-site transfer of CDW; – Stockpiles; and – Recovery of waste into Oil Berth 4. • A permit for the recovery operation will be required which is subject to planning. • Masonry units from the 19th Century Eastern Breakwater which currently supports the Port Operations Centre are of industrial heritage importance and will be carefully removed and salvaged for relocation elsewhere on site for future heritage gain projects. The quantity of masonry units is estimated to be approximately 7,000m³. • DPC and its appointed Contractor will consult with the EPA prior to construction to ensure that the appropriate licences, permits and exemptions are in place prior to initiation.
<p>There is likely to be an increase in the amount of waste produced during the construction phase of the works.</p>	<ul style="list-style-type: none"> • The current Dublin Port Ship's Waste Management Plan (see Appendix 17 of this EIAR) underpins all waste related operations at Dublin Port. DPC will continue to review and implement any required changes in the waste management plan in order to avoid and minimise the potential effects of vessel generated wastes.

Potential Impact	Summary of Proposed Mitigation
	<ul style="list-style-type: none"> • DPC will continue to provide adequate reception facilities and remove, as far as is practicable, any disincentives to landing waste in the port. DPC will continue to encourage the responsible management of waste, including minimisation and recycling, at the point of generation on ships, reception in ports/harbours, transportation and disposal, and ensure that port and harbour employees and users dispose of wastes responsibly in facilities provided. • The Ship's Waste Management Plan will continuously evolve to effectively capture materials generated to help ensure that recyclable materials are handled and diverted accordingly. Developing a clear waste management plan that incorporates a customer-facing recycling and organics collection program will help divert materials from landfill. • A draft MP2 Project specific Construction Waste Management Plan (CWMP) has been prepared (see Appendix 19.3 of this EIAR) and includes the following specific requirements: <ul style="list-style-type: none"> – Building materials will be chosen with an aim to 'design out waste'. – Control measures and attention to materials quantity requirements will avoid over-ordering and generation of waste materials. – Agreements with materials suppliers will reduce the amount of packaging or to participate in a packaging take-back Scheme where possible. – A 'just in time' materials delivery system will be implemented where possible to avoid materials being stockpiled, which increases the risk of the damage and disposal as waste. – Waste arisings will be managed appropriately in line with the Port's waste management hierarchy in accordance with best practice in order to achieve good recycling performance and high landfill diversion. – Waste materials will be segregated on-site into appropriate categories. In addition to recyclable items such as paper and drinks bottles, separation of food and food contaminated packaging and consumable items for composting will be implemented, as well as the requirement for more specialist streams (for example, electrical items, hazardous materials). – Appropriate receptacles and recycling bins will be clearly labelled for the collection and segregation of each of these waste materials and will be provided throughout the development and open space areas, as appropriate. Wastes will be stored in these receptacles in a designated, easily accessible area of the site until collection by an appropriately licensed waste management Contractor.

Potential Impact	Summary of Proposed Mitigation
	<ul style="list-style-type: none"> – All waste types and amounts 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. • All wastes generated will be managed in accordance with appropriate waste management legislation and policy, and will be transported and recovered / disposed of by licensed waste management Contractors. • In order to ensure that these operations are carried out effectively, all staff will receive training as part of their induction to the site including: instructions on the appropriate segregation, handling, recycling and reuse methods to be employed by all parties on-site for wastes generated. Furthermore, the waste management strategy and relevant environmental procedures will be communicated to staff, Contractors and suppliers and it will be a requirement that suppliers, and Contractors promote the adoption of environmentally sound practices. <p><u>On-site waste management</u></p> <ul style="list-style-type: none"> • The MP2 Project design will incorporate adequate dedicated space to cater for the segregation and storage of all various waste streams within the site. This waste storage compound will allow for waste segregation, handling activities such as bailing of cardboard and plastic and sufficient waste storage. • 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 staff will be provided with training regarding the waste management procedures on commencement of the project. • Construction waste materials shall be segregated on-site for recycling into the following categories: <ul style="list-style-type: none"> – Timber – Metal – Cardboard & paper – Glass – Rubble – General waste • Adequate security measures will be put in place. • DPC will continue to implement its Environmental Policy and update its Environmental Management System for the development consistent with best practice. <p><u>Duty of care in relation to correct waste authorisations</u></p>

Potential Impact	Summary of Proposed Mitigation
	<ul style="list-style-type: none"> 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 it is handled only by a body authorised under the Waste Management Act to manage it. This 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.
Monitoring Requirements	<ul style="list-style-type: none"> 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. Waste storage will take place in a secure area on-site and the Contractor will monitor the amount of waste stored to ensure that permitted limits of any Exemption are not exceeded. Measures and procedures to monitor waste flows on site and update records will be clearly set out. An Environmental Co-ordinator/Waste Manager will be appointed who will set up and maintain a record keeping system, perform audits and establish targets for waste management on site. The Environmental Co-ordinator/Waste Manager will also implement best practice methods for segregation and storage of recyclable materials, and for reuse of appropriate materials on-site in accordance with the MP2 Project's CWMP. The Environmental Co-ordinator/Waste Manager will be responsible for organising and delivering a waste training programme to staff on site. This will provide basic awareness for all staff of the CWMP and the requirement to segregate waste at source. Training may be incorporated with other training needs (e.g. general site induction, safety training etc.). This basic course will describe the materials to be 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. A system will be put in place to record the waste arising on site during demolition and construction phases, and all waste material that leaves the site. The Environmental Co-ordinator/Waste Manager will record the following: <ul style="list-style-type: none"> Waste taken off-site for reuse Waste taken off-site for recovery

Potential Impact	Summary of Proposed Mitigation
	<ul style="list-style-type: none"> – Waste taken off-site for recycling – Waste taken off-site for disposal <ul style="list-style-type: none"> • For each movement of waste off-site a signed waste collection docket will be obtained by the Environmental Co-ordinator/Waste Manager from the 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. Periodic audits will ensure completeness of records and compliance with the established system. • 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. • The Environmental Co-ordinator/Waste Manager will be responsible for conducting a waste audit at the site during the construction phase of the development. A review of all records for waste generated and transported off-site, will be undertaken mid-way through the construction phase. • Upon completion of the construction phase a final report will be prepared summarising the outcomes of waste management processes adopted and the total recycling / reuse / recovery figures for the development. <p><u>Waste arising from wash down facility</u></p> <ul style="list-style-type: none"> • Solid waste in the form of sediments will arise from the wheel wash unit settlement tank. The unit will be inspected regularly (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><u>Fuels and hydraulic oils/lubricants</u></p> <ul style="list-style-type: none"> • 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.

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 MP2 Project which forms part of the MP2 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 MP2 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 which includes representatives of DPC, the Contractor, Dublin City Council (DCC) and The Department of Housing, Planning and Local Government (DHPLG) Foreshore Unit. 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 MP2 Project.

DPC will appoint a suitably qualified person to the role of Environmental Facilities Manager (Environmental Clerk of Works) to monitor the MP2 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 have been prepared for the construction phase of the MP2 Project and are presented in the Draft CEMP and in Appendix 19 of this EIAR. These draft Construction Environmental Management Plans will be finalised as required prior to the commencement of development 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 summary of the Construction Environmental Management Plans is presented in Table 19-2. A summary of the Environmental Monitoring Programmes is presented in Table 19-3.

Table 19-2 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	Collection, control and disposal of all wastes to be recorded	Yes	During Construction	Quarterly Reports	Report submitted to Planning Authority	Yes	Complaints Procedure
Noise Management Plan	Yes	Compliance with NRA Guidelines and BS5229:2009	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
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

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
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	Existing Black Guillemot nest boxes to be removed and replaced at specific time of year.
Archaeology and Cultural Heritage Management Plan	Yes	Compliance with DCHG Guidelines	Monitoring to be undertaken by heritage engineer or architect and marine archaeologist	During Construction	Monthly Reports, input to Annual Environmental Report	Report submitted to Planning Authority and DCHG	Yes	Appropriate Licences required from DCHG
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 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 pollution prevention equipment.	During construction	Detailed record of all pollution events and responses, costs involved and environmental impacts.	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.

Table 19-3 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		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.		Bird Specialist	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 between Dún Laoghaire West Pier and Bull Wall.	Bird Flocks - species and approx. numbers.		Low tide ± 2 hours. Daylight. Good weather conditions.		Bird Specialist	Annually (year ending March) by 31st July each year.
MARINE MAMMALS	Marine Mammal Observation in exclusion zones	For piling, dredging, dumping and demolition operations within the foreshore	Within 500m of dredging / dumping operations. Within 1000m of piling operations.	Presence of marine mammals	1 to 3 as required	Suitable vantage point. Accommodation on dredging vessels.	Presence of marine mammal in exclusion zone.	Marine Mammal Observer	NPWS MMO Location and Effort Forms
	Continuous Static Acoustic Monitoring	Ongoing data logging at four stations (to be confirmed)	4 locations in Dublin Bay	Echolocation clicks of dolphins and porpoises				Marine Mammal Ecologist	

Monitoring Programme	Monitoring Element	Frequency of Monitoring	Location	Parameters Measured	Surveyors / Support	Sampling Constraints	Action Threshold	Monitoring and Reporting	Report / Frequency
	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.		Marine Mammal Ecologist	
MARINE BENTHOS	Benthic Grab and Video Surveys	Before and after capital dredging programme	Dublin Bay	Benthic Communities Biomass of major Phyla Granulometry Organic Matter Content	Boat Support	Good weather, sea and visibility conditions		Fisheries Specialist	
	Beam Trawl Surveys	Before and after capital dredging programme	Dublin Bay	Fish Communities - Species rank / size ranges					
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, Turbidity, Temperature, Salinity, pH				Environmental Facilities Manager	
ATMOSPHERIC NOISE AND DUST	Dust Deposition	Continuous over project duration	Poolbeg Marina; Clontarf	Dust deposition using Bergerhoff Dust Deposition Gauges				Environmental Facilities Manager	
	Noise Levels	Continuous for duration of Project	Poolbeg Marina; Clontarf	L_{Aeq}				Environmental Facilities Manager	Weekly to Contractor/DPC Annual AER
UNDERWATER NOISE	Underwater Noise Levels	Validation surveys	4 locations Inner Liffey Channel		Boat Support			Underwater Noise Specialist	Survey required at commencement of Piling
ARCHAEOLOGY		An Archaeologist and Heritage Architect will be	Capital Dredging, Landside works	Ground Disturbance Demolition of Pier Head Dredging				Archaeology Specialist	Monthly Reporting

Monitoring Programme	Monitoring Element	Frequency of Monitoring	Location	Parameters Measured	Surveyors / Support	Sampling Constraints	Action Threshold	Monitoring and Reporting	Report / Frequency
		retained for the duration of the works	including Pier Head						
WASTE	Management of waste streams arising during the construction works	Continuous for duration of Project		All Waste Streams				Main Works Contractor (MWC) Environmental Co-ordinator	Weekly to Contractor/DPC

19.2 Operational Phase Mitigation Measures

The existing land uses within the footprint of the MP2 Project comprise the manoeuvring and berthing of vessels, the handling of Ro-Ro and Lo-Lo cargo, HGV traffic distributing cargo to and from Dublin Port and the movement of ferry passengers arriving and departing to/from Dublin Port.

The MP2 Project is designed to provide port infrastructure which will improve the efficiency of port operations and thereby increase the throughput of both cargo and passengers.

The future land uses within the footprint of the MP2 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 19-4 summarises the operational phase mitigation measures recommended within the EIAR. All mitigation measures proposed within the NIS have been captured by the EIAR.

Table 19-4 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.	MP2 Project does not introduce any new risks that could cause or exacerbate a major accident, nor is it considered that the MP2 Project will significantly alter the risks presented to existing COMAH establishments during normal Port operations.
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	
No regulated invasive plant species listed in the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011, as amended, were identified on site during baseline habitat surveys of the site in 2018 and 2019. Nevertheless, a precautionary approach	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

Potential Impact	Summary of Proposed Operational Mitigation
will be taken to prevent the importation and spread of Invasive Alien Species.	ensuring best practice in relation to the movement of materials into, within or out of the operations area.
Potential risk of injury or disturbance to non-breeding waterbirds birds in the area of the MP2 Project during operation.	<p>The following precautionary measures will be undertaken to minimise the risk of injury or disturbance to non-breeding waterbirds in the area of operations:</p> <ul style="list-style-type: none"> • Gates will be operated at the site of the Greenway to control the movement of people during periods of extreme low spring tides when feeding grounds become available in the vicinity of Berth 53, in order to avoid disturbance. • DPC will continue to support a monitoring programme of winter wetland birds in the adjacent European designated site of the South Dublin Bay and River Tolka Estuary Special Protection Area for a minimum period of two years post MP2 Project construction works. The monitoring programme will comprise monthly surveys each winter season from October to March.
Potential impact of future maintenance dredging works on marine ecology including fisheries and marine mammals.	<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 MP2 Project capital dredging campaign is completed, the MP2 Project dredged areas will be incorporated into Dublin Port's maintenance dredging plan which will be subject to a Foreshore Licence 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. <p>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	DPC are committed to working with Inland Fisheries Ireland and 3rd level academic institutions to explore fisheries enhancement measures within the framework of the MP2 Project area, concentrating in particular in optimising biodiversity and fisheries biomass associated with new harbour structures.

Potential Impact	Summary of Proposed Operational Mitigation
Chapter 8 SOILS, GEOLOGY, HYDROGEOLOGY	
	No specific operational phase mitigation measures with regard to soils, geology and hydrogeology are required.
Chapter 9 WATER QUALITY, and FLOOD RISK	
Potential impact of future maintenance dredging works on Water Quality	<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 4,100 cubic metres (including entrained water), while dredging silts within the inner Liffey Channel, to control suspended solids released at the dumping site. This is equivalent to a maximum quantity per trip of 2,030 tonnes (wet weight). • 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.
Potential impacts of the general operation of the MP2 Project on Water Quality.	<p>The operational phase of the MP2 Project will be subject to Dublin Port's existing Environmental Management System (EMS) which is accredited to ISO 14001 standard and 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 MP2 Project, including surface water drainage.</p>

Potential Impact	Summary of Proposed Operational Mitigation
	<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>
Chapter 10 AIR QUALITY & CLIMATE	
<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 is currently developing 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 requirements will remain in practice throughout the operation of the MP2 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) on berths 52 and 53 for vessels at these berths. 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>
<p>Potential impacts of Climate Change.</p>	<p>DPC has committed to formulating a Climate Change Adaptation Plan that is cognisant of the DTTAS plan and the <i>Sectoral Planning Guidelines for Climate Change Adaption</i> published by the Department of Communications, Climate Action & Environment.</p>

Potential Impact	Summary of Proposed Operational Mitigation
	<p>The Adaptation plan will be reviewed in line with the Climate Action and Low Carbon Development Act 2015. This will ensure that an iterative approach to adaptation planning is informed by the latest scientific evidence thus enabling DPC to modify or escalate adaptation actions as appropriate.</p>
<p>Chapter 11 NOISE & VIBRATION</p>	
<p>Operational noise as a result of the MP2 Project</p>	<p>Noise levels during the operation phase of the MP2 Project are not expected to change the noise levels in any measurable way. No mitigation measures are therefore required for the operational phase.</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 Management Plan in relation to the ongoing management of 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 traffic from Dublin Port, Dun Laoghaire, Howth and leisure traffic from marinas around the bay. In order to monitor Dublin Port traffic related noise it is proposed to install a hydrophone at the eastern end of the port linked to a vessel identification system. 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 12 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 Foreshore Licence and Dumping at Sea Permit. These licences prescribe strict</p>

Potential Impact	Summary of Proposed Operational Mitigation
	<p>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>
Chapter 13 TRAFFIC & TRANSPORT	
<p>Mobility Management Plan & Smarter Travel</p>	<p>An outline Mobility Management Plan (oMMP) has been appended to Chapter 13 (Material Assets - Traffic and Transportation) 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 MP2 Project. It is envisaged that the MMP for the operators within the UFT and the Lo-Lo operator (currently DFT) will, in the fullness of time, fall under the hierarchy of the Port wide Transport/Travel Plan as the Masterplan continues to be implemented over the next 21 years.</p>
<p>Requirement for a high quality public transport service between the MP2 Project and the sustainable transport services located at the perimeter of the Dublin Port Estate</p>	<p>DPC is prepared to provide finance, of up to €100,000 for a period of 5 years (€500,000 total) towards the provision of a shuttle service linking the MP2 Project to sustainable transport services located at the perimeter of the Dublin Port Estate.</p>
Chapter 14 CULTURAL HERITAGE (including Industrial & Archaeological)	
<p>Potential Impact of future developments on the Great South Wall.</p>	<p>The design of MP2 Project has ensured that the integrity and stability of the Great South Wall will be maintained and therefore no impacts are predicted. DPC is committed to developing an over-arching Heritage Plan for the Great South Wall.</p>
Chapter 15 LANDSCAPE & VISUAL	
<p>Potential impact of future developments on the Landscape</p>	<p>No specific operational phase mitigation measures with regard to Landscape & Visual are required.</p>
Chapter 16 POPULATION & HUMAN HEALTH	
<p>Dublin Port will contribute a significant Community Gain that will have a positive impact on Population and Human Health.</p>	<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>

Potential Impact	Summary of Proposed Operational Mitigation
	<p>DPC will also allocate a sum of €1,000,000 to be invested for the enhancement and support of education provision for St Joseph’s Co-Educational Primary School, East Wall, in accordance with a scheme to be developed with local schools and key stakeholders.</p>
Chapter 17 WASTE	
Operational Phase Waste Management Plan	<p>The current <i>Dublin Port Ship’s Waste Management Plan</i> (WMP) underpins all waste related operations at Dublin Port. DPC will continue to review and implement any required changes in the waste management plan in order to avoid and minimise the potential effects of vessel generated wastes once the MP2 Project is operational.</p> <p>DPC will continue to provide adequate reception facilities and remove, as far as is practicable, any disincentives to landing waste in the port. DPC will continue to encourage the responsible management of waste, including minimisation and recycling, at the point of generation on ships, reception in ports/harbours, transportation and disposal, and ensure that port and harbour employees and users dispose of wastes responsibly in facilities provided.</p> <p>The WMP will continuously evolve to effectively capture materials generated to help ensure that recyclable materials are handled and diverted accordingly. Developing a clear WMP that incorporates a customer-facing recycling and organics collection program will help divert most materials from landfill.</p>
On-Site Waste Management	<p>The MP2 Project design incorporates adequate dedicated space to cater for the segregation and storage of all various waste streams at the Terminal 1 building. The 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.</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.</p>