

Port *of* Waterford



Masterplan 2020 – 2044 Summary



Port *of* Waterford

Brings *you* closer

Foreword to Masterplan 2020 / 2044

Port of Waterford Company (Port of Waterford) is the commercial state company responsible for the operation and development of Waterford Port.

The port is one of five ports of National Significance within the terms of National Ports Policy 2013 and is classified as a comprehensive port on the EU's Ten-T network.

Vision

Our vision is to be the preferred cargo gateway for the South East Region

Mission

Our mission is to provide infrastructure and services to enable trade and economic development in the Region.

Port Activity

The Port is active in bulk handling, break bulk/project cargoes and container handling (Lo-Lo). Bulk and break-bulk volumes in 2018 exceeded 1.7 million tonnes with container handling standing at 44k TEU. The bulk side of the business is predominately import and focussed on agri-inputs. The container operation supports a wide range of imports and regional exporters from the food, pharmaceutical and other sectors. The annual value of goods through the Port was estimated at €1.7 billion in 2017 with just under 1,000 jobs in, or supported by businesses in, the port zone.

Economic Context

The Republic of Ireland is a trading nation and as an Island the movement of the vast majority of traded goods happens through our sea ports.

The Irish economy has achieved impressive growth/recovery since 2013 with a concentration of this growth in and around the Greater Dublin Area. Brexit remains unresolved at time of drafting and the potential challenges arising here for the economy and for supply chains are significant. Dublin Port handles the majority of the Nations freight traffic. The impact of a number of years of record growth combined with a range of actions required to prepare for Brexit has meant that Dublin Port is experiencing some level of congestion and may not be as well positioned to deal with the full range of services as heretofore provided. In that context the Country's other Ports may have to carry a greater share of the workload.

Our economic analysis recommends a range of throughput projections due to the complexity and uncertainty of the economic situation. In particular we need to be mindful that changes in the National picture could dramatically change the demands faced by the Port.

Environmental Context

The Port operates within Waterford Harbour which includes the Lower River Suir SAC and River Barrow and River Nore SAC. The Harbour is 'shared' with a range of estuarial stakeholders and

activities, including fishing, leisure, commercial and domestic activities.

The Masterplan options and actions have been devised, designed and developed on an iterative basis that included an extensive formal process of environmental assessment and consultation.

Policy Context

Project Ireland 2040 and the National Planning Framework sets out the vision for the development of the Country and there is a real focus on development of the Regions. Port of Waterford is identified as an important economic enabler. The forthcoming Regional Spatial and Economic Strategies is expected to build on that position and similarly the Marine Spatial Plan which is in development will recognise the role of our ports.

Port of Waterford Strategy

Strategy is formulated to position the Port within national, regional and local planning and economic policy. This positioning is supported by the long-term plan for the provision of infrastructure to deliver the future capacity required by the economy. The short to medium term delivery of strategy is communicated and monitored through the 5-year rolling corporate plan where the ports objectives and performance are set out. Ultimately ports provide infrastructure to deliver operational capacity.

Port Capacity

Port of Waterford is currently operating well within its operational capacity. The expected demand for port throughputs has been projected out for 25 years using a low, medium and high growth scenario. The low growth scenario sees the current berth infrastructure sufficing until 2037 when an additional 200m of quay is needed. There is no requirement for expansion of the container terminal under this scenario. In the medium growth scenario, we see bulk quay investments in 2029 (200m) and 2041 (200m) with again no container terminal investment required. In the high growth scenario, the bulk investments are similar to those under the medium picture but there is need for a container terminal investment in 2035.

Under all scenarios we envisage a requirement for river management works to reduce maintenance dredging, facilitate larger ships and improve navigational safety and access. Furthermore, while there is no apparent and immediate pressure to provide enlarged quay/berth facilities it is necessary to remember that we are operating from a modest base and even moderate shifts in other parts of the economy could have a dramatic bearing on the Port of Waterford situation. This uncertainty combined with the timescales and challenges around consenting processes provides the motivation for a carefully constructed Masterplan to set out the plans for long term infrastructure provision.

The size and timing of demand will evolve and the Port needs to be well positioned and flexible in order to deliver Masterplan projects if and as needed.

The Masterplan

This plan provides the framework to allow Port of Waterford bring forward essential projects for planning and consent purposes as required. It also clearly conveys the scope of the Port's potential to deliver for the broad range of stakeholders and forms a solid basis for the future formulation of

ports and logistical policy at National level.

The Masterplanning Process

In developing our first formal Masterplan, Port of Waterford has:

- Invested in and worked through a comprehensive hydrodynamic and sedimentation modelling process
- Consulted with a wide range of stakeholders to understand the potential future commercial and economic challenges
- Considered the environmental impacts of possible and potential actions using Strategic Environmental Assessment, Appropriate Assessment and Strategic Flood Risk Assessment
- Looked at the geophysical attributes of the Masterplan area
- Identified the planning and land use requirements
- Assessed the engineering challenges and possible investment costs
- Engaged in an economic analysis to understand future demand and its drivers
- Assessed market trends in the ports sector and forecast our future growth scenario's
- Prepared financial models for different growth scenarios

The Masterplan seeks to set out a balanced and sustainable 'menu' of potential actions across the wide aspect of our activities. The plan is intended to be practical, achievable, modular in nature and respectful to the many stakeholders and interested parties that interact with us on so many levels.

Port of Waterford is a significant economic facilitator with an important role to play in the economic development of the South East and further afield. To fulfil its role the Port needs to be positioned to deliver the infrastructure and capacity required of it in a timely manner. At a time of significant short-term uncertainty (e.g. Brexit) and when we are seeking to find responses to Climate Change and understand the future shape of our agriculture and transportation models, the onus is on us to have well considered plans in place.

Des Whelan
Chairman.

Frank Ronan
Chief Executive.

Date: 21st October 2019

Port of Waterford 2020 – 2044 Masterplan Summary

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1 Introduction

Port of Waterford (Port of Waterford Company) is responsible for the management and development of the Port of Waterford, the fifth largest of the State owned commercial ports in terms of total tonnage handled. The port is designated as a Port of National Significance (Tier 2) within the terms of the National Ports Policy and is classified as a comprehensive port on the EU's Ten-T network.

Port of Waterford has prepared a Masterplan to allow the port to plan for future traffic growth and respond to potential developments in shipping operations and technology, including increases in size of vessels calling at the port, in a logical and timely fashion.

The Masterplan concentrates on the physical developments required to efficiently handle the future traffic demands within the boundary of the existing port estate and marine approaches. The site location and boundaries of the Masterplan are shown in Figure 1 below.

In addition, the Masterplan addresses the future requirements for land areas, improvements to road and rail access immediately adjacent to the port estate and marine improvements such as dredging and marine training walls required for future navigation.

This document is a summary of the findings and recommendations of the Masterplan. The full Masterplan can be found on the Port of Waterford's website www.portofwaterford.com



Figure 1 – Port Masterplan boundary covering existing port estate and marine approaches

2 The Port

The port is located 8km to the east of the city of Waterford on the north bank of the River Suir at Belview. It comprises some 960m of quays together with open and covered storage areas and warehouses all within the designated Belview Port Zone.

The port is served by the N29 national primary route, which links directly to the M9/M7 motorways and the N25 and N24 national roads. The port also has full rail access with rail sidings leading directly into the container terminal at Belview.

The Port is active in bulk handling, break bulk/project cargoes and container handling (Lo-Lo). Bulk and break-bulk volumes in 2018 exceeded 1.7 million tonnes with container handling standing at 44,000teus. The bulk side of the business is predominately import and focussed on agri-inputs. The container operation supports a wide range of imports and regional exports from the food, pharmaceutical and other sectors.

The annual value of goods through the Port was estimated at €1.7 billion in 2017 with just under 1,000 jobs in, or supported by businesses in, the port zone.

3 The Masterplan

The *VISION* of the Port of Waterford is to be the preferred cargo gateway for the South East Region. The *MISSION* of the Port is to provide the infrastructure and services to enable trade and economic development in the region.

The Masterplan has been prepared to achieve this vision by providing a clear direction for the port over the next 25 years. The Masterplan addresses a wide range of issues including:

- Financial – capital expenditure, cash flows, debt servicing capacity
- Economic – traffic levels, commodities, shipping patterns
- Engineering – port marine approaches, dredging, berths, landside infrastructure
- Operations – commodities, handling methods, storage
- Environmental – Impacts and mitigation measures.

The Masterplan has enabled the port to:

- Identify potential levels of future demand for port infrastructure and services
- Identify areas and scope for development
- Prepare alternative development scenarios/schemes and budget costs
- Evaluate these alternatives and
- Prepare clear and achievable options for future development

4 Consultation Process

A process of consultation has been carried out as part of the Masterplan process.

Meetings were held with the main regulatory bodies, relevant non-statutory bodies and port operators and port users. The complete Masterplan, together with the Strategic Environmental Assessment (SEA) is available on line on the Port of Waterford website www.portofwaterford.com

In addition, public meetings have been held to obtain feedback from the public on the Masterplan.

5 Economic importance of Port of Waterford

Belview Port is strategically placed within two hours travel of Dublin and is a natural hub for the integration of shipping, road and rail freight services. It is connected via an exceptional road and rail network and offers those involved in the shipment of goods an efficient and cost-effective service with potential savings to the logistics chain in both time and fuel.

Our analysis for the Belview Industrial Zone, including Port of Waterford, established the following Economic Performance Indicators for 2017; the values in brackets show the economy-wide multiplier effects:

- A turnover of €388 million (€943 million)
- Employment of 632 (980)
- Paid €34 million in salaries and wages (€60 million)
- Spent €328 million on goods and services (€796 million)
- Generated a Gross Value Add of €91 million (€190 million)

Port of Waterford itself plays a key catalytic role in facilitating and supporting economic activity in Belview and the south-east from an industrial, services and tourism perspective.

6 Port Management

The Port of Waterford is managed by a team comprising a Board of Directors and CEO overseeing four operational sectors as shown below:

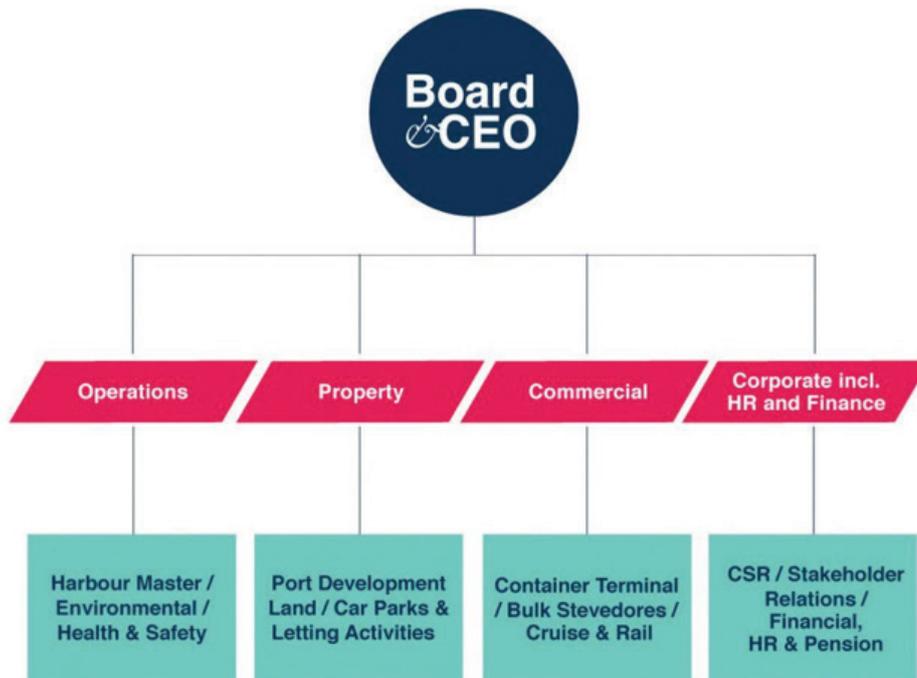


Figure 2 – Port of Waterford Management Structure

This management team is directly responsible for the management of the container operations, providing labour, specialised container handling equipment and various related and ancillary services, as well as being responsible for the licencing and oversight of the bulk, project and general cargo operations.

Bulk handling at Belview Port is carried out by Southeast Port Services and Suir Shipping, who are responsible for the provision of the necessary labour resources, cargo handling equipment and bulk storage facilities. These licensed stevedores also undertake the handling of the project and general cargoes.

7 Port Infrastructure

7.1 Marine access and vessel operations

The entrance to Waterford Harbour lies at the mouth of the estuary of the River Suir between Dunmore East and Hook Head. The distance from the mouth of the estuary to the berths at Belview Port is approximately 10 nautical miles and typically vessels take around an hour to transit. On arrival at the port, vessels utilise one of two turning circles, either off Belview Container Quay or within the area just beyond the downstream end of Belview Quay. The downstream turning circle is the larger and currently limits the maximum length of vessels which can access the port to around 190metres in length.

The marine access to the port includes the main dredged channel through Duncannon Bar and a second dredged channel between Cheekpoint and Snowhill Point. These navigation channels are dredged two to three times a year and the ongoing cost of maintenance dredging represents a significant annual expenditure for the port.

The tidal range at the port varies between 3.6m on neap tides up to 4.6m on springs, allowing access to vessels with operating drafts of up to 9.0m over the high tide period.

The location of the existing marine approach channel, dredged areas and turning circles are shown in Figure 3.

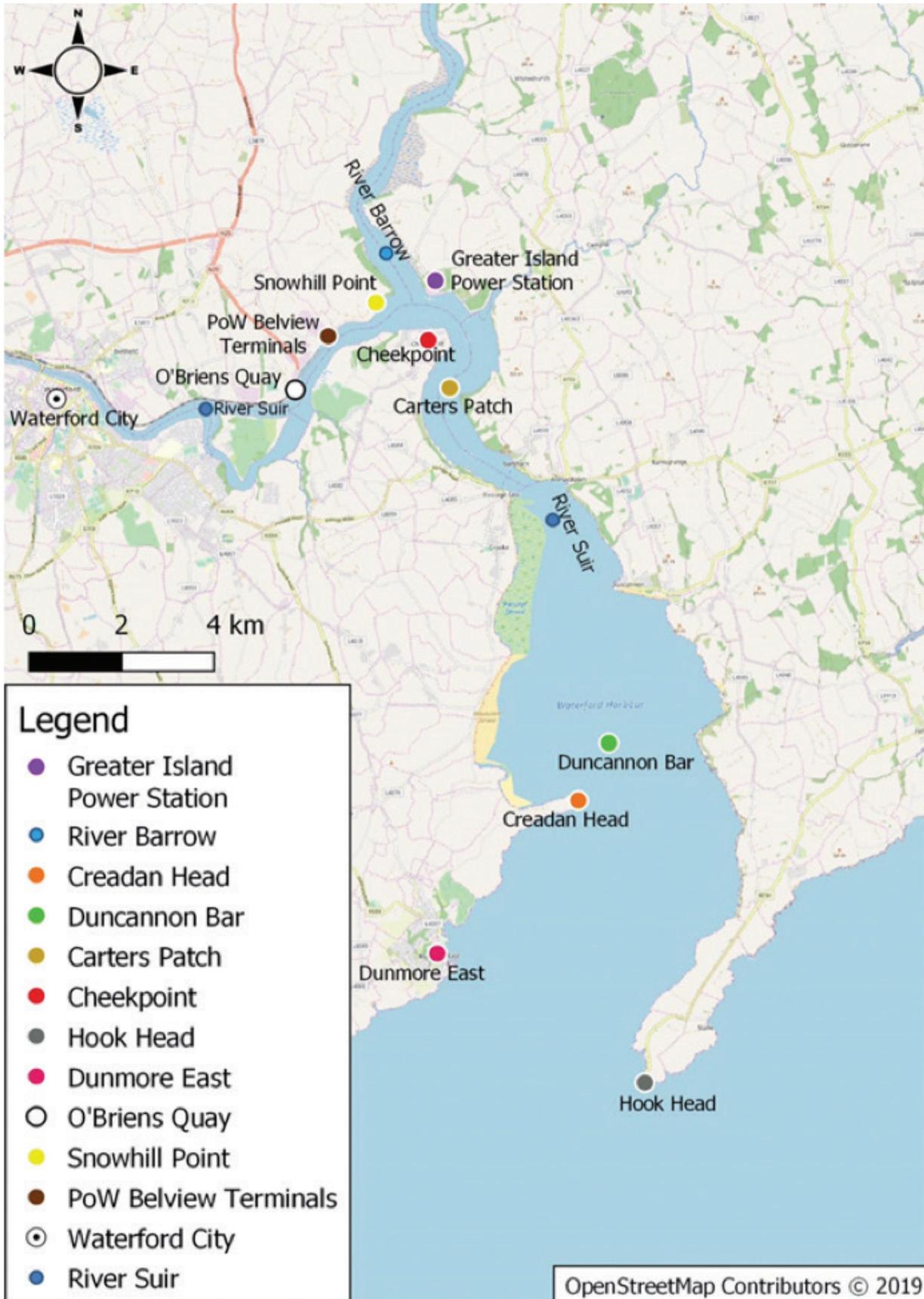


Figure 3 – Port of Waterford location and marine access

7.2 Vessels calling at Belview Terminals

Currently around 500 commercial vessels call at the Belview terminals each year. In addition to these vessels calling at the Belview terminals, around 100 vessels call at New Ross, using the common dredged navigation channel.

The numbers of container vessels calling at the port have reduced from a peak in 2008 of almost 400 vessel calls to fewer than 100 calls in 2018, while the number of calls by multipurpose bulk vessels calling at Waterford has gradually increased from under 200 in 2008 to over 300 in 2018.

Sizes of vessels calling at Belview are currently limited by the widths and depths of the access channel, limitations on the curved sections of the marine approaches and the diameters and depths of the turning circles off the berths.



Figure 4 – Manoeuvring area off the berths at Belview

There is a demand to provide suitable access to the port for larger vessels in the future to maintain market share, to attract future additional traffic and to enhance the economies of scale and competitiveness of the supply chain. This will require deepening and widening the approach channels and increasing the diameters and depths of the turning areas.

7.3 Port area

The Port comprises a total of some 265 Hectares of land currently zoned for port related development. This area includes the berths, port operational area, open and covered warehousing and storage areas behind the port and undeveloped farmland zoned for future port related developments including storage, processing and packaging. The main quays at Belview were constructed over the period 1993 to 2008. These structures, including the piles and deck, are regularly maintained and generally in good condition. A general view of the Belview commercial berths, including the O'Brien's quay and adjacent Belview Port Zone is shown in Figure 5 below



Figure 5 – Port of Waterford looking downstream showing the Belview terminals, Belview Port Zone and O'Brien's quay in the foreground.

7.4 Port operations

Container handling is carried out using two wide span-rail mounted quayside container cranes with capacities of 35 – 40 tonnes, loading and landing containers directly to/from the quay apron. The widespan cranes also allow for direct loading/offloading from rail below the back-reach of the cranes. Two reach-stackers are used for container handling in the container yard area.

The terminal currently serves a regular Samskip/DFDS service with two vessel calls per week. Current (2018) containers handled (Laden and empty) is around 44,000teu, carrying around 383,000tonnes. Previously (2008) equivalent figures for containers were significantly higher, handling 173,000teus that year carrying 1,536,000tonnes.



Figure 6 – Belview container berths and quayside container cranes

The bulk handling equipment is supplied and operated by the two stevedoring companies (Suir and Seps) and comprises four Mobile Harbour Cranes (50 – 84 tonnes capacity) equipped with large grabs for handling bulks, smaller capacity fixed-arm cranes used for timber handling and supporting equipment such as load spreaders for general and breakbulk cargoes, front end loaders, hoppers and cactus grabs for scrap cargoes.

Dry bulk and general cargo traffic throughput at the Belview berths reached over 1.7million tonnes in 2018. The largest volumes were fertiliser (630,000tonnes), animal feedstuffs (650,000tonnes) and construction products (310,000tonnes).



Figure 7 – Bulk berths and mobile harbour cranes operating at Belview

7.5 Hinterland connections

The port at Belview is located on a national primary route, the N29, which links directly to the M9/M7 motorways and N25 and N24 national roads.

Belview Port has full rail access with four rail sidings into the container terminal, allowing containers to be loaded directly to/from ships from rail or road transport. There was a twice weekly rail service connecting the North West Ireland region in/out of Port of Waterford chartered by DFDS and operated by Irish Rail, but this operation is currently suspended. It is a core objective of Port of Waterford to get this connection to the West/North-West back in action.

7.6 Key performance indicators

Vessel operations have been analysed to determine current cargo handling rates and berth occupancy figures as defined below.

- **Berth occupancy** is calculated as a percentage of the total vessel times alongside (from time of arrival to time of departure including both working and non-working hours) and total berth availability based on number of berths, working week (5.5 days) and working year (50 weeks)
- **Operational productivity** (tonnes/berth/day) is based on total tonnage/teus handled per annum and total vessel time alongside (both working and non-working hours).
- **Hourly productivity** is based on a nominal 12hour/day working period

These KPIs have been used to determine the maximum capacity of the existing facilities and to determine future demand for additional facilities to handle the projected cargo volumes.

8 Future Port Traffic Projections

A historical analysis of traffic through the port was carried out and forecasts have been made of future bulk and Lo-Lo traffic flows, based on low, medium and high growth scenarios. This analysis recommends a range of throughput projections due to the complexity and uncertainty of the economic situation. In particular changes in the National picture could dramatically change the demands faced by the Port. The low and medium annual growth rates recommended are 2% and 4% for both bulk and Lo-Lo, with highs at 6% for bulk and 8% for Lo-Lo.

Smooth growth paths do not happen in the real world, because there will inevitably be cyclical fluctuations in economic growth and once-off events such as the farm fodder crisis in 2018 that will cause distortions. However, in modelling out to 2045, a smooth growth path can be assumed for strategic planning purposes.

Lo-Lo is currently a smaller part of the business in Port of Waterford. However, it is certainly conceivable that Lo-Lo trade has the potential to experience a step change in activity based on the requirements of the economy of the South East, the return to operation of the rail link and generally strong transport connectivity of the Port, congestion in the larger ports, and the potential capacity available in the Port of Waterford.

For Lo-Lo trade it is important to recognise the sharp contraction in Lo-Lo activity between 2007 and 2014 on the back of a collapsing economy. Consequently, there is potential for a very quick and significant pick up from such a low base, so it is essential to have contingency plans in place around Lo-Lo capacity.

While it is very difficult to forecast out to 2045, it is essential that the appropriate investment is made early enough to ensure sufficient capacity is available to accommodate possible future scenarios. The nature of such capacity investment is that there is a significant time lag involved in delivering the necessary infrastructure. In the context of the future of the South East and regional growth imperatives, investment in port capacity to cope with future growth potential is essential.

In addition to the core businesses of bulk cargoes and container handling, consideration has been given to identifying and evaluating potential options for other specialist operations including:

- **Ro-Ro/Ferry services** - while the Port of Waterford is not ideally located to compete with other established Ro-Ro services, niche opportunities may arise in the future.
- **Cruise vessels** - There is an opportunity to increase the number of cruise vessels calling at Waterford.
- **Offshore supply/servicing vessels** - The Port is well equipped to support the renewable sector. The future demand for offshore supply/servicing vessels in this region will be to support the installation, commissioning, servicing and eventual decommissioning of offshore wind farms.
- **Livestock handling** - The Port has experience in the handling of livestock in smaller size carriers and this is a potential trade for the future.

9 Capacity of existing port and future demand

Port of Waterford is primarily dedicated to handling dry and break bulk cargo, containers (Lo-Lo) and project cargo and is currently operating well within its operational capacity.

The expected demand for port throughputs has been projected out for 25 years using low, medium and high growth scenarios. The low growth scenario sees the current berth infrastructure sufficing until around 2037 when an additional 200m of bulk handling quay is needed. There is no requirement for expansion of the container terminal under this scenario. In the medium growth scenario, we see bulk quay investments required in around 2029 (200m) and 2041 (200m) with again no container terminal investment required. In the high growth scenario, the bulk investments are similar to those under the medium picture but there is need for additional container terminal investment in around 2035.

There is potential to increase the depths alongside the berths to accommodate deeper draught vessels. This in itself does not increase the ultimate capacity of the berths but may attract additional traffic.

The reinstatement of regular rail traffic is one of Port of Waterford's current objectives and would serve to attract additional container cargo, but will not serve to increase the ultimate capacity of the port.

The port currently operates a 12 hour working day. It would be possible to increase the nominal capacity of the port by extending these working hours, but to implement such changes would require a significant cultural change and re-work of the full logistics chain and not just the port operations.

While the port has no necessity for immediate expansion that will increase the cargo handling capacity in the short or medium term, we envisage an immediate requirement for river management works to reduce maintenance dredging, facilitate the handling of larger ships and improve general navigational safety and access.

Whilst these improvements to the navigation channel will not directly result in an increase in handling capacity for Port of Waterford, they will reduce annual maintenance costs and potentially increase the length and draft of vessels that can be accommodated.

10 Development proposals

The options considered for port development are shown in the Figure below.

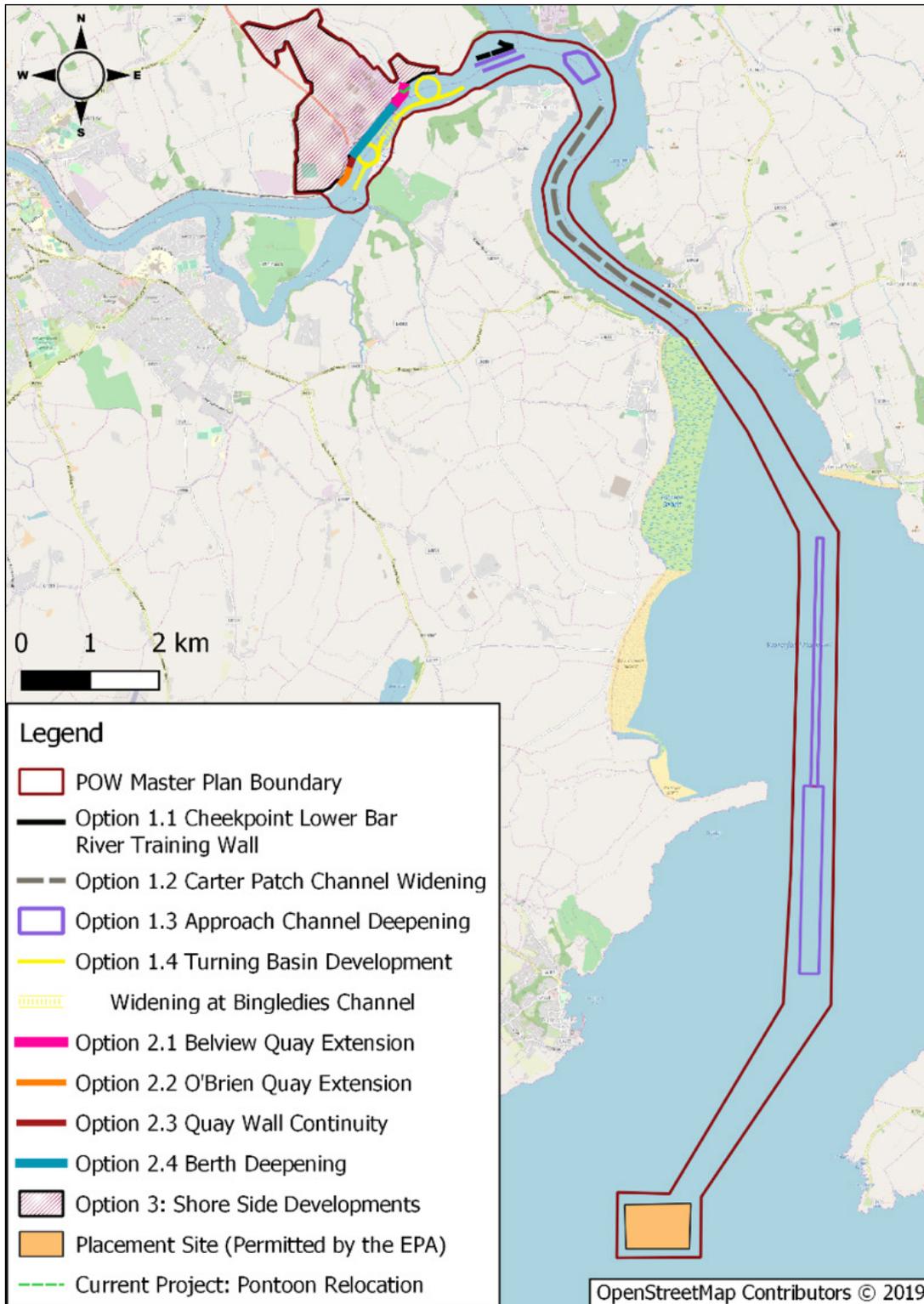


Figure 8 – Overall locations of proposed Masterplan Projects for review

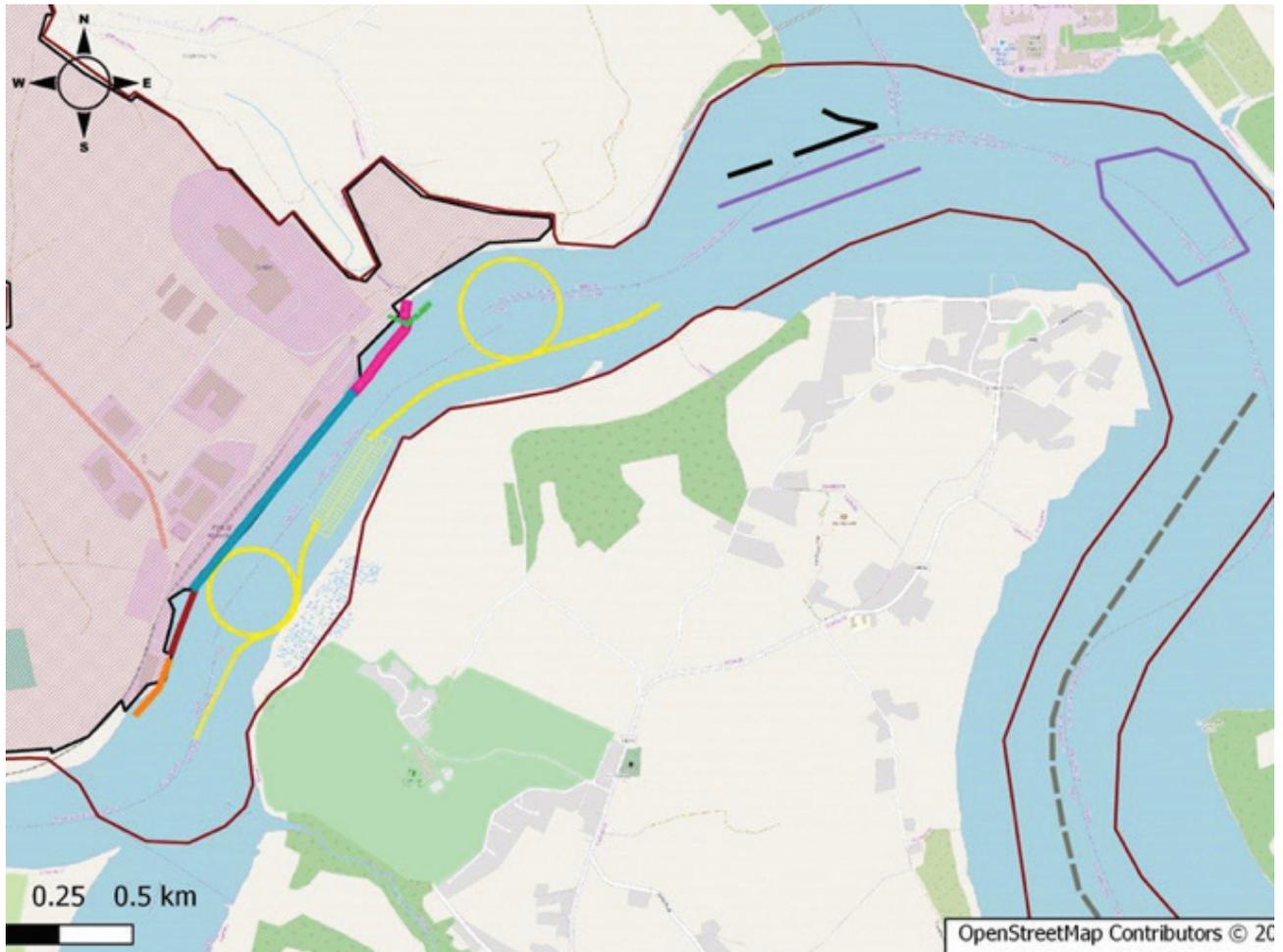


Figure 9 Details of proposed Masterplan Projects at Belview

10.1 Options to minimise maintenance dredging and improve marine access

Option 1.1 - Cheekpoint Lower Bar River Training Wall

This will help to minimise future maintenance dredging requirements by controlling and reducing sedimentation. The project envisages the construction of two lengths of sheet piled training wall, one a vee shaped wall approximately 495m long and the other a straight wall 130m long. The proposed layout of the sheet piled training walls is shown in Figure 10 below and a photomontage of the proposed sheet piled walls at low and high tide is shown in Figure 11 A and B.

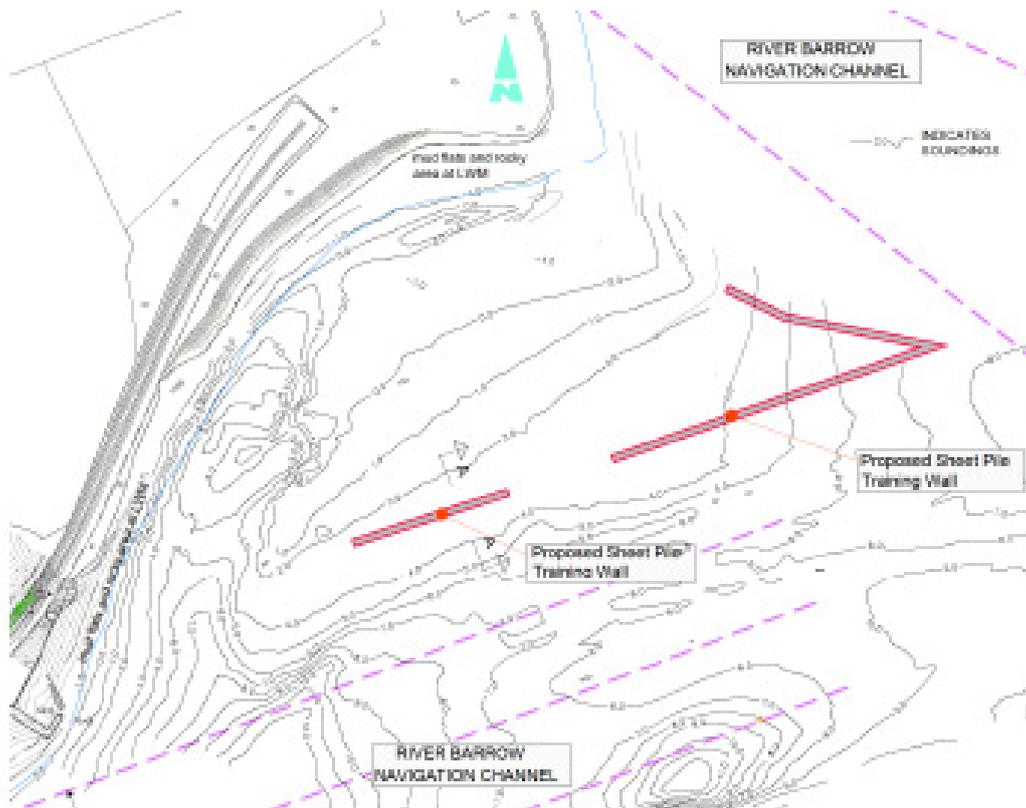


Figure 10 – Proposed layout of sheet piled training walls.



Figure 11A – Photomontage of sheet piled training walls at low tide



Figure 11B – Photomontage of sheet piled training walls at high tide

The construction of the training walls is likely to cost in the region of €6.0 million plus around €0.7 million to cover general contingencies, site investigations, planning, foreshore lease applications and professional fees, total €6.7 million.

Option 1.2 - Carters Patch improvements

This is required to improve general navigational safety and covers a particular area of the navigational channel that poses a potential navigational safety hazard to vessels. The curve of the navigational channel requires vessels to ‘crab’ when manoeuvring in the channel. This limits the length of vessels able to safely pass through the area. Carters Patch would require an increase in channel width due to an increased swept path width of the vessels when manoeuvring. The planned 150m width will significantly improve the manoeuvring in this area.

Option 1.3 - Approach channel widening and deepening

This is required to accommodate larger, tidally restricted vessels. It would be necessary to deepen the approach channel, from the mouth of the estuary to the quays, from the current -6.5mCD to a more appropriate level. A range of dredged depths, from -7.0mCD to -8.0mCD have been considered. The cost of this dredging increases with increasing depths, and such dredging has to be carried out within the available financial resources of the port. However this work can be carried out incrementally over a number of years before achieving a final depth which will serve the needs of future vessels.

Option 1.4 – Turning basin development

The potential to develop significantly larger turning areas is limited by the width of the river defined by the river banks. The larger turning circle at Cheekpoint Upper Bar could be increased to 310m diameter with 1 in 5 side slopes to allow vessels of up to 25,000dwt (typically 178m in length with maximum draft of 10.7m) and potentially larger vessels of up to 40,000dwt (around 210m in length) operating at reduced drafts, to manoeuvre at the turning circle.

Based on the volumes to be dredged and use of appropriate dredging methods, either a trailer suction hopper dredger (TSHD) alone or with a backhoe dredger (BHD), the budget estimates for the depth options being considered are outlined in Table 1 below

Design Depth	Navigation Channel		Turning Circle	Estimated Cumulative Costs €million	
	TSHD	TSHD & BHD	TSHD & BHD	Minimum	Maximum
-7.0mCD	€2.1m	€2.4m	€2.3m	€4.4m	€4.7m
-7.5mCD	€3.6m	€4.2m	€2.7m	€6.3m	€6.9m
-8.0mCD	€5.4m	€6.6m	€3.1m	€8.5m	€9.7m

Table 1 Direct cumulative dredging costs for varying navigation depths

10.2 Options for development/improvements to berths

Option 2.1 - Belview Quay Extension

This considers the construction of a 400m extension of the main Belview Quay to provide two new bulk berths. This project would require around 6 hectares of land reclamation, quay wall construction and capital dredging. A budget of around €27.0 million would be required for a 400m quay extension. This extension would only be built if the demand is foreseen to deliver the additional tonnages and revenue streams that will provide a modest but reasonable return on capital expended.

Option 2.2 - O'Brien Quay Extension

The costs of construction of a quay extension at the privately owned O'Brien's Quay would be met directly by the owner.

Option 2.3 - Quay Wall Continuity

There is currently a break of 230m in the continuity of the quay wall between Belview Quay and O'Brien's Quay. This area is prone to sedimentation and impinges on safe navigational depths in the adjacent downstream berth. This option is proposed to minimise these impacts and provide additional berthing and storage with the construction of an infill quay wall in this area. Considering a full infill section of 230m between the O'Brien's Wharf and the Container Terminal, the budget project costs would be around €14.0 – €15.0 million (excluding dredging works). However, any such development will be driven primarily by expansion in the container business which is only seen towards the end of the Masterplan under the high growth scenario.

Option 2.4 - Berth Deepening

Deepening of the existing berths at Belview has been considered to accommodate deeper drafted vessels at the terminals. However, the form of construction of the existing quay walls significantly limits the deepening of the berths due to the form of construction, with vertical piles and a sloping rock-armoured revetment under the deck. This option is not considered practically nor economically viable.

Other options

The area immediately downstream from the existing berths (towards Snowhill Point), as well as other potential sites further downstream, have previously been considered for port development. Based on the levels of traffic forecast over the next 25 years, and the existing capacity of the port, together with the potential for future development discussed above, such longer term development lies outside the timeframe of this Masterplan and has not been considered further.

10.3 Options for shore side developments

Option 3.1 - Improvements to road access to port

The N29 has capacity to deal with the additional traffic arising from the growth scenarios forecast. However there may be a requirement to adopt new treatments for service roads joining the N29 in the Port area as and when required together with some alterations to N29 at the Rathculliheen turn-off where a new roundabout is planned.

Option 3.2 - Improvements/development of services infrastructure

The development of services including water supply, effluent treatment, and broadband will be required. Port of Waterford will take a progressive role in promoting these developments within the Port zone.

Option 3.3 - Serviced sites

Port of Waterford will continue to play a role in the management of the port zone land bank to ensure the needs of the port are met through the availability of appropriate sites.

Option 3.4 - Office Buildings

Port of Waterford is seeking to expand the activities supported within the Marine Point office building and sees a case to develop an 'enterprise hub' for both port related and other activities supporting employment from a wider hinterland (Waterford, Wexford & Kilkenny).

Option 3.5 - Additional warehousing

Development of additional warehousing - The development of additional warehousing required to support increased port throughput has traditionally been the province of the private sector. Port of Waterford does not anticipate any radical deviation from this successful formula.

11 Development Plan

Port of Waterford is currently operating well within its operational capacity. The forecast of future traffic levels has identified that the port has no immediate necessity for expansion of capacity in the short or medium term, but that traffic forecasts should be constantly monitored to identify trigger points to allow any development to be implemented in good time to provide capacity as and when required.

There is an immediate benefit in carrying out improvements to the marine access through the navigation channels to enhance marine safety and to carry out some river training works to reduce levels of siltation and reduce the costs of maintenance dredging at key points along the channel.

The expected demand for port throughputs has been projected using low, medium and high growth scenarios. The low growth scenario sees the current container and bulk berth infrastructure sufficing until 2037 when an additional 200m of bulk quay is needed. There is no requirement for expansion of the container terminal under this scenario. In the medium growth scenario, additional bulk quays will be required in 2029 (200m) and 2041 (an additional 200m) with again no container terminal investment required. In the high growth scenario, the bulk investments are similar to those under the medium picture but there is need for a container terminal investment in 2035.

To ensure that this additional infrastructure is completed and commissioned in time to meet the forecast traffic levels then trigger points must be identified to allow a suitable time for the design, permitting, construction and commissioning of the works to be carried out.

11.2 River training walls

Preliminary work has been completed on this project, including extensive modelling work to establish the project viability and identify any major environmental issues and mitigation measures. The next step will address concept design. Following this concept design phase a period of around 6 – 9 months would be required for preparation of the planning application and completion of the Environmental Impact Assessment and Appropriate Assessment, followed by 18 – 24 months for planning approval and obtaining the Foreshore Lease and Licence.

In parallel with this, the detailed design and tendering process would be carried out to allow appointment of the contractor as soon as permitting approval is given. The construction period required for the training walls would be around 16 months from award of contract .

11.3 Improvements to marine access

The proposed dredging works to improve marine access have been extensively modelled. Major surveys and site investigations have been undertaken to determine river bed and rock levels to establish any design issues and overall viability. The estimated time for completion of design, environmental studies and approvals is around 22 - 24 months, covering completion of concept design, including verification of design parameters using a real-time ship simulator, and necessary environmental permitting. Following this preliminary work, three annual periods of dredging campaigns are envisaged over the following 3 years.

11.4 Quay wall construction

A total period of around five years is required for the design, environmental assessments, permitting approvals, tender and contractor mobilisation and for the site construction works to be completed and commissioned. This includes around 30 months for design and environmental approvals, 8 months tender period and contractor appointment and 20 months site construction works.

If additional bulk handling facilities are required (under the medium growth scenario) in 2029 (200m) and 2041 (200m) then investment decisions must be made five years in advance, in 2024 and 2035.

12 Environmental impacts

The Port operates within Waterford Harbour which includes the Lower River Suir Special Area of Conservation (SAC) and River Barrow and River Nore SAC. The Harbour is 'shared' with a range of estuarial stakeholders and activities, including fishing, leisure, commercial and domestic activities.

The Masterplan options and actions have been devised, designed and developed on an iterative basis that include an extensive formal process of environmental assessment and consultation.

Port of Waterford commissioned a Strategic Environmental Assessment (SEA) to be undertaken for the Masterplan. The objective of the SEA process was to evaluate development options proposed in the Masterplan to ensure they could provide a high level of protection for the environment and to ensure sustainable development.

The port also commissioned an Appropriate Assessment (AA) to assess the potential adverse effects, if any, of the proposed Masterplan and associated works on nearby sites with European conservation designations (i.e. Natura 2000 sites).

The future implementation of any projects identified in the Masterplan will be subject to further environmental assessment at a project level and will require the necessary statutory planning consent together with project specific Appropriate Assessment, and where required an Environmental Impact Assessment.

The SEA process is an essential part of achieving sustainable development in public planning and policy making. SEA ensures that negative environmental effects arising from a plan / programme or other strategic action are properly:

- Identified and assessed;
- Taken into account by the responsible authority / decision makers;
- Transparent to the public through public consultation; and,
- Regularly monitored.

The objectives of the AA process is to document the implications of the Masterplan in the context of the conservation objectives of Natura 2000 sites, and assess residual potential impacts on these conservation objectives after implementation of mitigation measures.

In accordance with the European Commission guidelines, nine Natura 2000 designated sites were identified within 15km of the Site as shown in Figure 12.

The SEA Process identifies the key environmental issues, setting the environmental objectives, targets and indicators and monitoring of these objectives and targets, identifies the preferred alternative, and identifies measures to mitigate for the potential environmental impacts.

The preferred alternative is the full implementation of the recommendations of the Masterplan in a phased manner based on demand requirements. Mitigation measures have been identified to prevent, and where this is not possible minimise, negative environmental impacts envisaged as a result of implementing the Masterplan.

An environmental monitoring programme has been developed based on the SEA Objectives, Targets and Indicators. PoW is committed to implementing this monitoring programme and associated reporting.

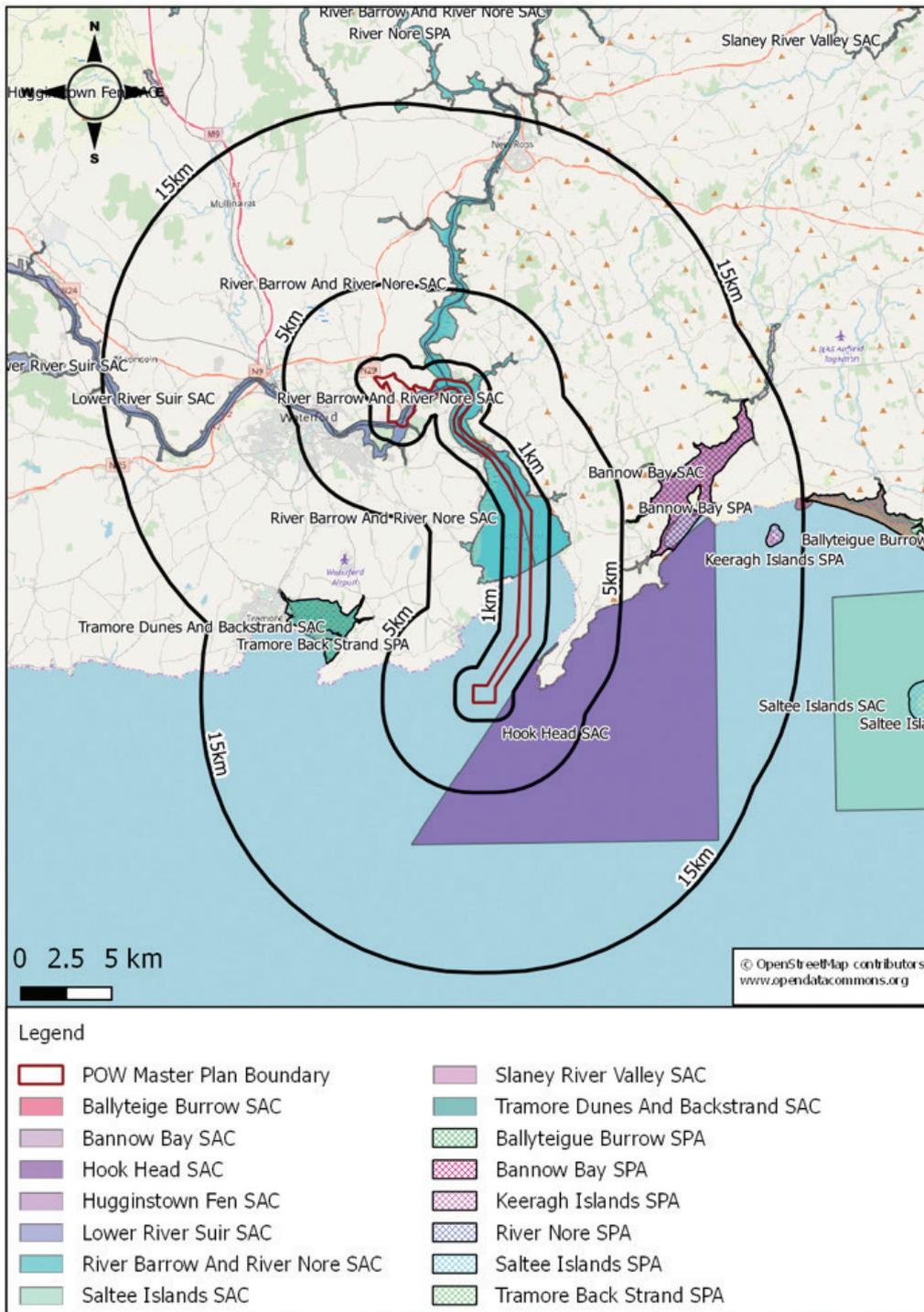


Figure 12 - Natura 2000 Sites

The Masterplan and associated environmental documentation will be reviewed every 5 years and updated as required.

PoW will continue to collaborate with the relevant public authorities, including but not limited to the statutory SEA consultees, as well as with the local community and all other stakeholders in Waterford Harbour. PoW would support any Estuary stewardship organisation that may be formed by those stakeholders.

13 Financing plan

Port of Waterford has prepared financial projections for the Masterplan period covering the three scenarios recommended in the economic assessment. These projections incorporate the forecast business activity levels and resultant income streams, the phasing of capital expenditure (delivery of identified Masterplan projects) as needed to provide the required navigational and operational capacity.

The purpose of the financial projections is to determine the financial practicality of the plan, based on projected income streams and to confirm the ability of the Port Company to deliver the programme and to meet the funding challenges of the future development of the port. Grant aid will be an important part of the financing of projects wherever possible.

Table 2 summarises the anticipated budget capital costs of the identified projects . Phasing/implentation will depend on traffic growth and demand for additional infrastructure and availability of finance.

Masterplan Projects		Cost
1	Options to minimise dredging and improve marine access	€'m
1.1	Cheekpoint Lower Bar River Training Wall	6.5
1.2	Carter Patch Channel Widening	
1.3	Approach Channel Deepening	
1.4	Turning Basin Development	
	1.2, 1.3 & 1.4 in combination - to 7mCD (from 6.5m)	4.5
	1.2, 1.3 & 1.4 in combination - to 7.5mCD (from 7m)	2.0
	1.2, 1.3 & 1.4 in combination - to 8mCD (from 7.5m)	2.5
2	Options for development/improvements to berths	
2.1	Belview Quay Extension	27.0
2.2	O'Brien Quay Extension	n/a
2.3	Quay Wall Continuity	14.0
2.4	Berth Deepening	n/a
3	Shore Side Developments	
3.1	Improvements to road access to port	
3.2	Improvements/development of services infrastructure	
3.3	Serviced sites	
3.4	Office Buildings	
3.5	Development of additional warehousing	
TOTAL		56.5

Table 2 – Budget capital costs of identified Masterplan projects

14 Policies and guidelines

Project Ireland 2040 and the National Planning Framework set out the vision for the development of the Country and there is a real focus on development of the Regions. Port of Waterford is identified as an important economic enabler. The forthcoming Regional Spatial and Economic Strategies are expected to build on that position and similarly the Marine Spatial Plan, which is in development, will recognise the role of our ports.

Other policy documents and guidelines at European, national and local levels which have been considered in the development of the Masterplan include:

- EU Policy - Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system, European Commission - March 2011, which sets out a vision for a competitive and sustainable transport system across the EU, including the European Union's Trans European Network – Transport (TEN-T), which consists of a comprehensive transport network, within which there is a core network of high priority. Waterford is a comprehensive port on the Ten-T network.
- National Ports Policy – which identifies Ports of National Significance (Tier 1), Ports of National Significance (Tier 2) and Ports of Regional Significance. Port of Waterford is identified as a Port of National Significance (Tier 2). The National Ports Policy also encourages Ports such as Waterford to have strategic Masterplans in place to guide their future development.
- A series of ministerial guidelines issued under section 28 of the Planning and Development 2000 including:
 - o Smarter Travel – A sustainable transport future 2009-2020 – a national policy document which sets out a broad vision for the future and establishes objectives and targets for transport
 - o National Climate Change Policy, 2013
 - o The National Mitigation Plan, 2017
 - o National Adaptation Framework, Planning for a Climate Resilient Ireland, 2018
- Kilkenny County Development Plan 2014-2020 - This Plan identifies the Port at Belview as a strategic national, regional and county asset with good road and rail links.
- Ferrybank-Belview Local Area Plan 2017 - identifies a land use strategy for the proper planning and sustainable development of the Belview Area

15 Acknowledgements

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