COMHLACHT CHALAFORT ÁTHA CLIATH
DUBLIN PORT COMPANY

Alexandra Basin Redevelopment Project

Project Rationale

6th March 2014

Contents

1. Background

The Alexandra Basin Redevelopment (ABR) Project is the first major infrastructure project to be brought for planning and other consents from Dublin Port Company's Masterplan 2012 to 2040.

The Masterplan recognises the need to provide capacity in the Port to cater for 60m gross tonnes of cargo by 2040 and was approved by the Board of Dublin Port Company (DPC) in January 2012. It was also subsequently endorsed by Government in its National Ports Policy 2013 in the following terms:

> *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.*

The locations of the proposed development in the context of the Masterplan are identified in Appendix 1. The development also includes works to deepen the Port's shipping channel.

The ABR Project emanates from ideas presented in the Masterplan and its design is based on an in-depth evaluation of needs (supported by detailed modelling and simulation studies) and a determination of the potential environmental impact of the proposed development during the EIA process.

The ABR Project complements recent and continuing initiatives by DPC to, in some cases, regain operational control over port lands and, more generally, to influence port operators to increase their utilisation of port lands. Appendix 2 shows lands which have been reacquired / redeveloped by DPC in recent times (or which are in the process of being reacquired / redeveloped) for the transit storage of cargo.

These initiatives have recently included the publication by DPC of a policy document[1] setting out the company's policies regarding the use of port lands and appropriate targets for their utilisation for different types of cargo.

In identifying the engineering options in the Masterplan, DPC recognised significant levels of public concern about the expansion of the Port through further infill in Dublin Bay. The Masterplan confirmed that the Company would continue to develop the Port within its current footprint to the maximum extent possible before any major reclamation works might be considered.

In designing the ABR Project, DPC considered a range of alternatives based not only on the Masterplan options but also on a range of alternatives elsewhere in other ports. The analysis of all of these alternatives is presented in Appendix 6.

---

[1] http://www.dublinport.ie/fileadmin/user_upload/documents/Franchise_Review_Consultation_Document_-_3rd_February_2014.pdf

The ABR Project, therefore, focuses on a combination of re-developing existing (and in some cases life-expired) infrastructure and using existing port lands at higher utilisation levels.

Beyond this, and to maximise the operational efficiency of the Port, many of the new berths proposed in the ABR Project have been designed to be multipurpose to cater for the needs of a range of ship and cargo types.

2. Why is the ABR Project needed?

The need for the project arises for a number of reasons:

1. Dublin Port needs to make timely provision for the anticipated growth in volumes of both cargo and passengers.
2. Dublin, as the centre of national economic activity and given the regional connectivity afforded by the road and rail networks, is the preferred location for the providers of shipping services to operate to and from.
3. Dublin Port needs to prepare for increases in ship sizes and the changing operational preferences of the providers of shipping services. The Port also needs to be able to cater for a large increase in the number of ship arrivals each day.
4. Dublin Port needs to re-configure port operations to best meet future capacity requirements without additional infill beyond the existing port boundaries
5. Existing infrastructure is approaching the end of its useful life and needs to be renewed / replaced
6. Undertaking the works in Alexandra Basin West will allow DPC to take steps to address a legacy contamination issue in Alexandra Basin West which restricts DPC's ability to carry out routine and essential maintenance dredging operations

3. Future-proofing the Port

The ABR Project is, to a large extent, a re-engineering of port infrastructure built between the late Victorian period and the 1960's. The engineering works proposed in the project are on berths that are currently in use. This makes the project challenging in its implementation.

Moreover, it will be built at a time of growing volumes. Having seen the Port's volumes decline by 9.5% between the peak of 2007 (30.9m gross tonnes) and 2012 (28.0m gross tonnes), volumes are beginning to increase again and are up by 3.0% to 28.8m tonnes in 2013.

DPC is, therefore, challenged to complete the proposed works before volumes grow to the extent that works cannot be carried out without disrupting the businesses of the Port's customers and damaging the wider economy.

Against this background, some of the elements of the ABR Project are intended to deal with current demand and operational requirements while also future-proofing the Port by providing the capacity to further deepen berths in future years as and when required to meet market demand.

In particular, it is planned as a key part of the ABR Project that the major disruption in port activity resulting from large civil engineering works will occur on a phased basis in a way that will not result in major disruption to the movement of cargo (both import and export) through the Port.

Appendix 3 shows the locations of the Port's main existing berths.

Appendix 4 then summarises the changes to the working depths which the proposed development will deliver. The table in Appendix 4 shows:

(a) The standard depth[2] of existing berths
(b) The proposed standard depth for new berths to be provided
(c) The depths to which it is proposed to dredge the new berths as part of the proposed development[3]

The extent of the proposed development is emphasised by the table in Appendix 4 which highlights that over 40% of the Port's working berths will be rebuilt as part of the proposed development.

The operational efficiency of the Port will also be enhanced by making many of the berths suitable for different types of ships and cargo. For example, it is intended that the redeveloped North Wall Quay Extension would cater for multiple uses including:

- Car transporters
- Ro-Ro vessels
- General cargo vessels
- Cruise ships (in season)
- Visiting naval ships
- Tall ships

The multiple uses to which DPC puts many berths in the Port is a feature of Dublin Port and contributes to maximising infrastructure utilisation.

[2] The standard depth is the maximum depth to which a berth can be dredged without undermining it. The actual depth available at a berth will typically decline over time before maintenance dredging is necessary to bring the working depth back towards the standard depth.

[3] The difference between the proposed standard depths of the new berths and the depths to which it is proposed to dredge these new berths provides the future proofing the Port requires to allow it handle deeper draughted ships in the years ahead.

4. Factors determining a port's capacity

The capacity and effectiveness of any port depend on five attributes:

1. Adequate depth and navigability of the approach channel
2. The availability of berths with sufficient depths alongside
3. The availability of back-up land and facilities for the transit storage of cargo
4. Proximity to the port's ultimate customers
5. Quality of the landside access.

In the case of Dublin Port, proximity and landside access are probably as favourable as they could be.

In the case of landside access, Dublin Port has the immediate connection through the Dublin Port Tunnel to the M50 and beyond to the national motorway network. In addition, Dublin Port has an active and busy connection to the national rail network with daily trains transporting large volumes of lead and zinc ore concentrates from Tara Mines and a daily container train service to Ballina.

Moreover, since the publication of the Masterplan 2012 to 2040, Dublin Port Company is on course to complete the assembly of 21.6 hectares of port land suitable for the transit storage of growing volumes of import and export cargo. The location of these lands is shown in Appendix 2.

With three of the above five criteria satisfied, only the channel and berths remain outstanding and the ABR Project seeks to address each of these.

The historic success of Dublin Port is founded on the efforts over centuries to provide the Port's channel, berths and land in the shallow and sandy waters of Dublin Bay. These waters are characteristic of most of the east coast of Ireland where there are no great natural harbours (such as Cork, Falmouth or Sydney) but where ports developed for the most part on the estuaries of not very big rivers.

It is a story of considerable engineering ingenuity and of the continual upgrading of old infrastructure to meet new demands. Moreover, it is a continuing story where the challenges of the past remain essentially the same today and Dublin Port Company is trying to foresee the capacity that is needed for the future and to plan and build accordingly.

The project now proposed envisages the upgrading of the port's access channel and berths to ultimately cater for a range of ships significantly larger than can currently be accommodated:

- Container ships with draughts of up to about 12.5m with capacities in excess of 3,500 TEU
- Dry bulk ships with draughts of up to 12.5m with deadweight capacities in the region of 55,000 tonnes
- Deepsea Ro-Ro ships with draughts approaching 12.0m and lengths approaching 300m
- Multipurpose (freight and passenger) Ro-Ro ferries with lengths of up to 240m
- Cruise ships with lengths of up to 340m and draughts of about 9.0m

5. Dublin Port is the preferred location for shippers

Dublin is the largest port both within the Republic of Ireland and on the island of Ireland as a whole, particularly in the unitised cargo modes (Ro-Ro and Lo-Lo) as shown below in Table 1.

Table 1: Overview of Ireland's ports (2012)

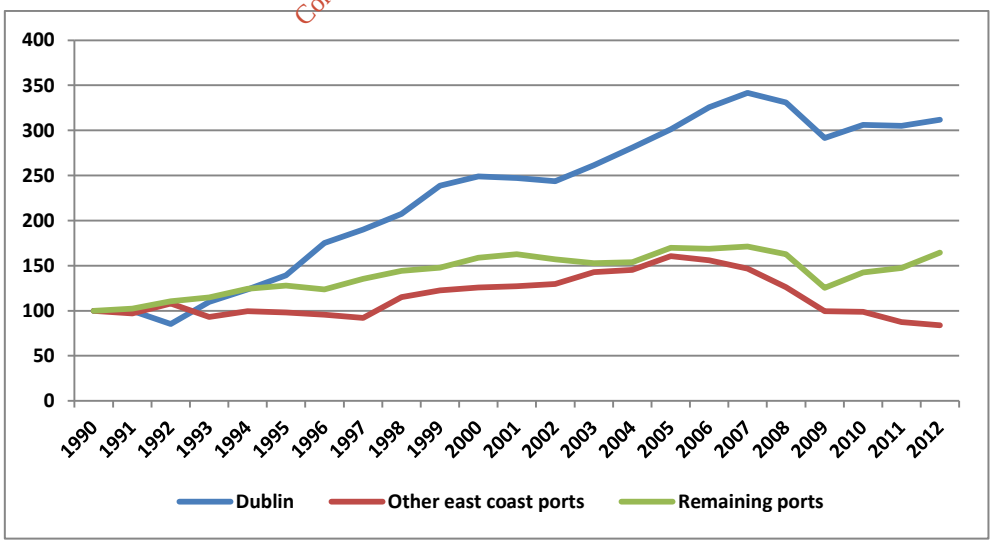
	Dublin	Republic of Ireland	Northern Ireland	Island of Ireland
Population		4.6m	1.8m	6.4m
# ports		19	5	24
Port tonnes[4]	19.9m	47.6m	23.6m	71.2m
Ro-Ro units	718,377	833,791	748,000	1,581,791
Lo-Lo TEU	526,738	732,316	231,000	963,316

Dublin's large market share arises due to three factors:

- The large population in the hinterland (1.8m in the Greater Dublin Area)
- The port's location at the hub of the national road and rail networks
- The proximity of the Port to the west coast UK ports of Holyhead (133km), Liverpool (250km) and Milford Haven (227 km)

These factors have led to Dublin's share of port traffic increasing far faster than that of other ports in the Republic of Ireland in the 22 years from 1990 as shown below in Figure 1 and in Table 2.

Figure 1: Trends in port tonnages, 1990 to 2012



[4] The tonnes shown here are net tonnes as reported by the CSO and UK's Department for Transport

While other ports on the East coast of Ireland[5] have seen their volumes decline by -0.8% per annum on average, Dublin has grown by 5.3%.

Moreover, Dublin's growth rate is more than twice that of other Irish ports on the south and west coasts[6] which have had growth of 2.3% since 1990.

Table 2: Growth rates in ports in the Republic of Ireland, 1990 to 2012

	AAGR 1990 to 2012
Dublin	5.3%
Other east coast ports	-0.8%
Remaining ports	2.3%

6. Cargo volumes and Dublin Port's Masterplan

There has been a long term trend of relentless growth in Dublin Port's volumes. Table 3 summarises past trends and projected future trends over the 90 years from 1950 to 2040.

In the 30 years to 1980, the volume of goods handled in Dublin Port increased at an average rate of 3.2% per annum.

In the following 30 years to 2010, the level of growth increased to 4.6%.

Trading patterns in Dublin Port, supported by economic analysis carried out for DPC, indicates that growth will continue in the future albeit at a lower long-term rate. In particular, DPC believes that a rate of 2.5% per annum in the 30 years to 2040 is realistically achievable.

[5] Greenore, Dundalk, Drogheda, Dun Laoghaire, Wicklow, Arklow, New Ross, Rosslare, Waterford

[6] Cork, Youghal, Bantry, Castletownbere, Kinsale, Fenit, Shannon Foynes, Kilrush, Galway, Sligo, Killybegs

Table 3: Dublin Port's long-term growth rates, 1950 to 2040

	'000 gross tonnes[7]	AAGR[8]
1950	2,856	-
1980	7,300	3.2%
2010	28,879	4.6%
2040	60,000	2.5%

It is believed that growth will not be the same across all modes but that some modes will grow more strongly than others. In DPC's Masterplan it is envisaged (and supported by expert analysis) that the average annual growth of 2.5% would be spread across the different cargo modes as shown in Table 4.

Table 4: Masterplan growth projections 2010 to 2040

'000 gross tonnes (five year rolling average)	2010	2040	AAGR
Ro-Ro	16,403	41,920	3.2%
Lo-Lo	6,317	10,480	1.7%
Bulk Liquid	4,009	4,000	0.0%
Bulk Solid	2,054	3,500	1.8%
Break Bulk	96	100	0.1%
Total tonnes	**28,879**	**60,000**	**2.5%**
Unitised	***22,720***	***52,400***	***2.8%***
Non-unitised	***6,159***	***7,600***	***0.7%***

Unitised ('000 units)	2010	2040	AAGR
Ro-Ro	701	1,791	3.2%
Lo-Lo	377	625	1.7%
Totals	**1,078**	**2,416**	**2.7%**

Lo-Lo ('000 TEU)	2010	2040	AAGR
Lo-Lo	641	1,063	1.7%

7 These figures are '000 gross tonnes and are five year rolling averages. Gross tonnes includes the weight of goods, their immediate packaging and (for the unitised modes) the tare weight of containers and freight trailers. Gross weight is derived from ships manifests and differs from the weight of goods shown by the CSO in its statistics. CSO tonnages for the unitised modes do not include the tare weights of containers and freight trailers.

8 Average Annual Growth Rate

In particular, DPC believes that the port's unitised business (Ro-Ro and Lo-Lo) will grow at a faster rate (2.8%) than its non-unitised business, primarily bulk liquid and bulk solid commodities (0.7%).

As a result of this differential, unitised cargoes will account for 87.3% of total cargo by 2040 compared to 78.7% in 2010.

Moreover, within the unitised category, DPC believes that Ro-Ro will grow faster (3.2%) than Lo-Lo (1.7%).

7. Reasonableness of DPC's volume projections to 2040

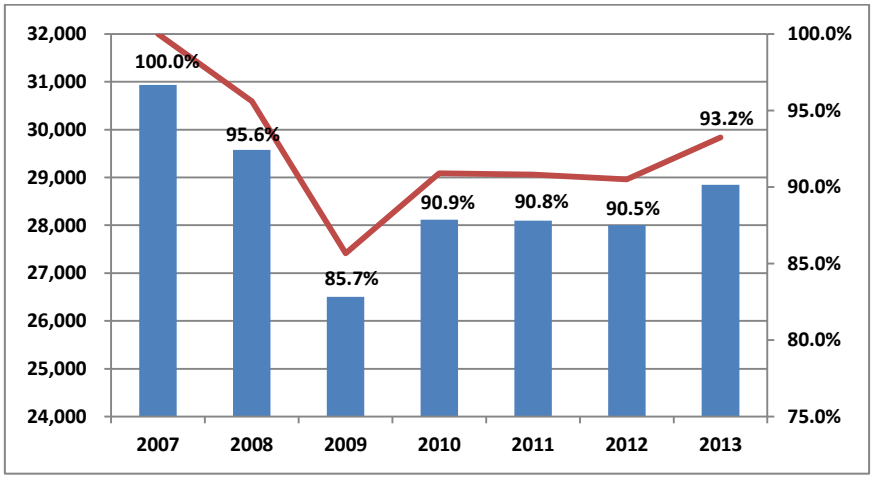
The underlying justification for the proposed project is the requirement for DPC to cater for future growth in cargo volumes through Dublin Port. In this section, the continuing reasonableness of the Masterplan's long-term growth assumptions is assessed by reference to a number of factors:

- Trends in the early years of the Masterplan
- Impact of the recession in the early years of the Masterplan's 30 year planning period
- Comparison with growth trends in the years since 1990
- The long-term relationship between cargo volumes and economic growth
- The comparison of projected cargo volumes with population growth projections
- The impact of actual growth being different in future years to that assumed in the Masterplan

Trends in recent Years

The early years of the Masterplan's 30 year period coincided with the collapse in the economy since 2007. The effect of this on Dublin Port's volumes in each year since 2007 is shown below in Figure 2.

Figure 2: Trends in port volumes ('000 tonnes) 2007 to 2013



The growth in the first three years of the Masterplan has lagged behind the 2.5% assumed average annual growth rate.

However, against a background of the port having achieved growth of 3.0% in 2013 even in advance of any significant economic recovery, DPC believes that the long-term 2.5% growth rate to 2040 remains a reasonable basis for future planning.

Based on the above recent trends shown in Figure 2, it is clear that the Masterplan's assumed growth level of 2.5% has not been attained in the early years of the projection period from 2010 to 2040. Table 5 below indicates that volumes today are in the region of 3.2m gross tonnes behind where the Masterplan had projected them to be.

Table 5: Masterplan projections compared to actual cargo levels 2010 to 2013
('000 gross tonnes, five year rolling averages)

Year	Masterplan	Actual	Difference
2010	28,879	28,879	-
2011	29,601	28,645	- 956
2012	30,341	28,057	- 2,284
2013	31,100	27,913	- 3,187

However, given the +3.0% growth seen in 2013, DPC believes it likely that the slow start since 2010 could be quickly made up by faster growth in future years.

In particular, an average growth rate of 3.6% would bring actual volumes into line with the Masterplan's assumed level within a decade. This is not a high level by comparison to long run historical growth levels in the 30 years to 2010 or by comparison with the one year growth level seen in 2013.

On the other hand, if average growth ran at 2.9% over the longer period to 2040, then the target of 60.0m tonnes by 2040 would still be met.

Based on the above considerations, DPC remains convinced that the Masterplan's growth assumptions are a reasonable and prudent basis for planning the Port's future capacity requirements.

Comparison of Masterplan growth rates with trends since 1990

The Masterplan growth rates shown in Table 4 are realistically achievable by comparison with actual growth rates seen in Dublin Port over the past two decades as shown below in Table 6 for the period from 1990 to 2013.

By comparison with the Masterplan assumed growth rate of 2.5% between 2010 and 2040, the actual growth rate between 1990 and 2013 was much higher at 5.9%.

Table 6: Average annual growth rates by mode 1990 to 2013

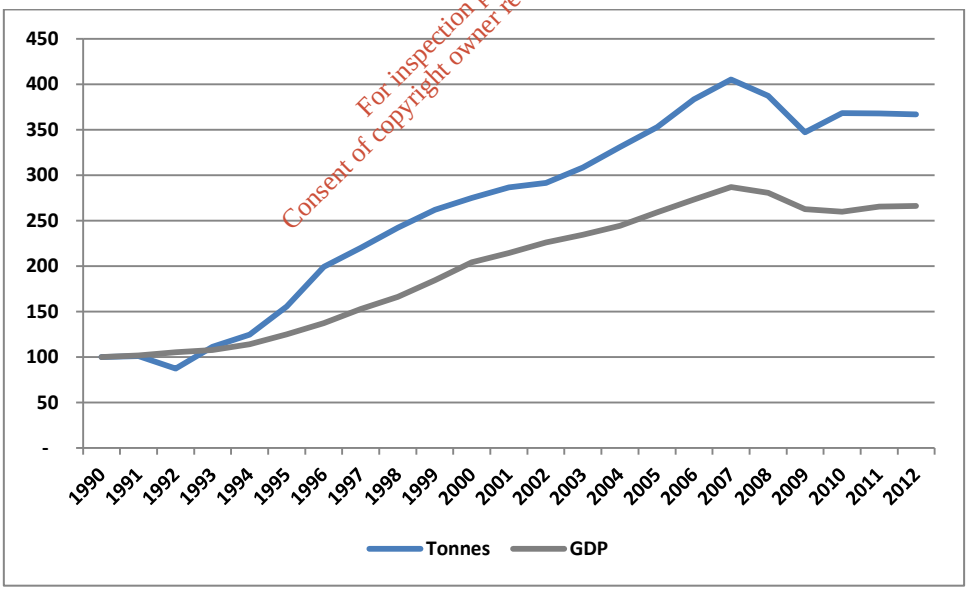
Mode	AAGR 1990 to 2013
Ro-Ro	9.2%
Lo-Lo	4.1%
Bulk Liquid	2.4%
Bulk Solid	3.4%
Break Bulk	-7.5%
Overall	**5.9%**

Cargo volumes and economic growth

There has been a strong relationship between economic growth and Dublin Port's volumes over the years as shown in Figure 3. In particular, over the long run, port volumes have increased at 1.36 times the rate of economic growth.

Between 1990 and 2012, Dublin Port's volume increased at an average rate of 6.1%. Over the same period GDP increased at 4.5% as shown below.

Figure 3: Trends in Dublin Port gross tonnage and GDP[9], 1990 to 2012



Having come through a five year period since 2007 during which GDP declined by an average of 1.5% per annum (and Dublin Port's volumes by 2.0%), Dublin Port's volumes returned to growth (3.0%) during 2013.

[9] Constant GDP at 2011 values

DPC believes that a return to economic growth will drive a corresponding increase in port volumes.

Were the long run relationship between Dublin Port's volumes and GDP to continue, average economic growth of 1.8% would be sufficient to generate port volume increases of 2.5% per annum.

Cargo volumes and population growth

Economic growth is, in part, a function of population growth and, as well as a strong relationship with GDP, there has also been a strong correlation between population and Dublin Port's volumes.

This is shown in Table 7 below for the period from 1951 to 2011. The table also shows recently published CSO[10] population projections[11] to 2046 with port volumes extrapolated.

If this relationship were to continue over the period of the CSO's population projections to 2046, then we would expect to see Dublin Port's tonnage reaching a level of 60.9m tonnes by 2041 and 66.6m tonnes by 2046.

Table 7: Trends in Dublin Port tonnage and population, 1951 to 2011 and extrapolated to 2046

	Year	Population	Tonnage (5-year rolling average)
Historical	1951	3.0 m	3.2 m
	1956	2.9 m	3.3 m
	1961	2.8 m	3.2 m
	1966	2.9 m	4.2 m
	1971	3.0 m	5.5 m
	1979	3.4 m	6.9 m
	1981	3.4 m	7.5 m
	1986	3.5 m	6.9 m
	1991	3.5 m	7.3 m
	1996	3.6 m	10.4 m
	2002	3.9 m	20.7 m
	2006	4.2 m	25.5 m
	2011	4.6 m	28.7 m

[10] http://www.cso.ie/en/media/csoie/releasespublications/documents/population/2013/poplabfor2016_2046.pdf

[11] The CSO's projections are based on three different assumed levels of migration and two different assumed levels of fertility. These yield six different scenarios. The scenario used above is the M2F2 scenario which envisages a return to a small net inward migration by 2016 combined with a decline of fertility rates in Ireland to European levels by 2026.

	Year	Population	Tonnage (5-year rolling average)
Projected	2016	4.7 m	34.0 m
	2021	4.9 m	39.6 m
	2026	5.0 m	44.9 m
	2031	5.2 m	49.8 m
	2036	5.3 m	55.2 m
	2041	5.5 m	60.9 m
	2046	5.6 m	66.6 m

This projection to 2041 of 60.9m tonnes is very much in line with DPC's Masterplan assumption of 60.0m tonnes by 2040 and supports a conclusion that Dublin Port's volumes will grow in the years ahead beyond the current capacity limits within which Dublin Port is operating at present.

The ABR Project is being brought forward at this time to ensure that the Port is optimally configured to accommodate this growth.

What if the future projections are wrong?

The history of recent decades has shown that accurately projecting economic growth in the short term is very difficult. Accurately projecting economic growth over decades is all but impossible.

The same applies for projecting port volumes[12].

Given the strong link between economic growth and Dublin Port's volumes there is, therefore, a very real likelihood that the volume scenario we have developed to 2040 will either be too conservative or too optimistic. On balance, we believe that it is more likely that volumes will be greater than we are projecting rather than less. However, DPC simply does not know with any degree of certainty.

DPC's approach to dealing with this uncertainty is core within the Masterplan.

In the event that volumes grow faster than projected, we will seek to bring engineering options forward for planning and other consents sooner rather than later.

On the other hand, if growth is more sluggish than projected, projects will be brought forward later rather than sooner.

[12] Probably the best example of this comes from the Dublin Transport Initiative report of 1995 which projected that Dublin Port's volumes would reach 10.7m tonnes by 2011. However, by 2000, the volume through the port had already reached 21.0m gross tonnes. (See Page 14 of *A Platform for Change* published by The Dublin Transportation Office in November 2001).

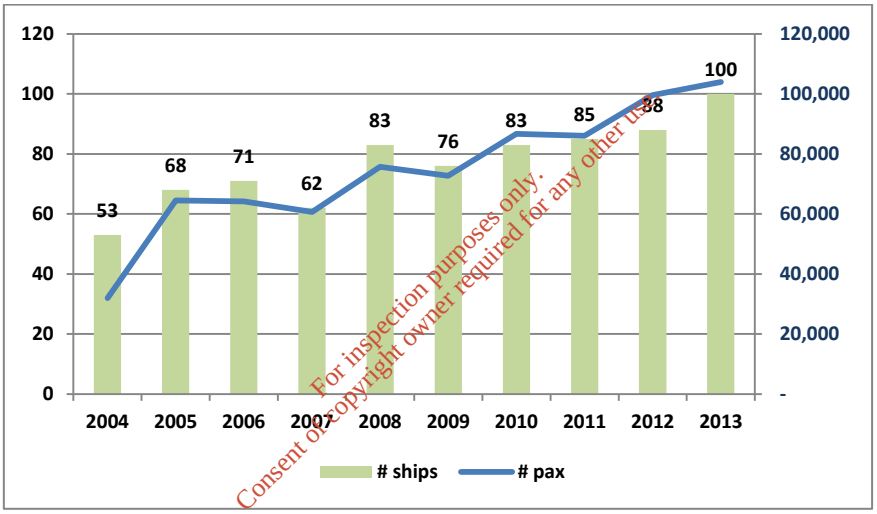
As regards the timing and scope of the ABR Project, DPC believes that the project is probably marginally on the late side in relation to the likely growth levels over the next five to ten years.

8. Passenger and cruise volumes

Beyond cargo volumes, DPC believes that Dublin Port's cruise business will grow considerably. In particular, DPC is confident that Dublin City has the potential to attract significantly more cruise visitors.

Dublin Port's cruise ship and passenger volumes have increased dramatically over the past decade as shown in Figure 4 below.

Figure 4: Trends in Dublin Port's cruise business 2004 to 2012



DPC believes that cruise passenger volumes will continue to increase substantially based on projections of potential shown below in Figure 5 (passenger numbers) and Figure 6 (number of cruise ships)[13]. This is because Dublin Port is the preferred location for cruise vessels to visit, not just in terms of the Port's capacity to accommodate large vessels, but also given the proximity to the City Centre.

[13] These projections were prepared for Dublin Port Company in June 2012 by international consultants Bermello Ajamil & Partners.

Figure 5: Projections of cruise passenger numbers to 2032

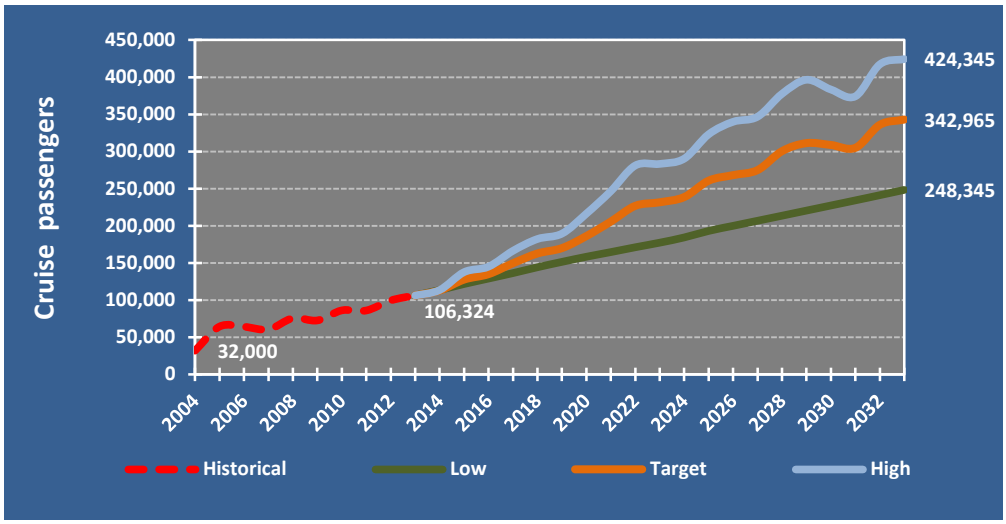
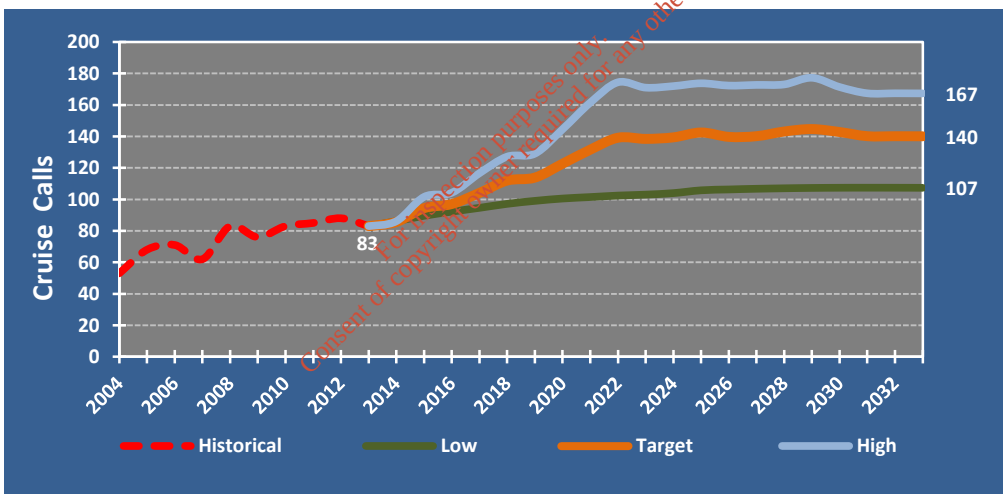


Figure 6: Projections of cruise ship numbers to 2032



9. The tidal and depth constraints

The primary constraint in Dublin Port is the maintained depth of the channel. This is currently -7.8m by reference to Chart Datum[14].

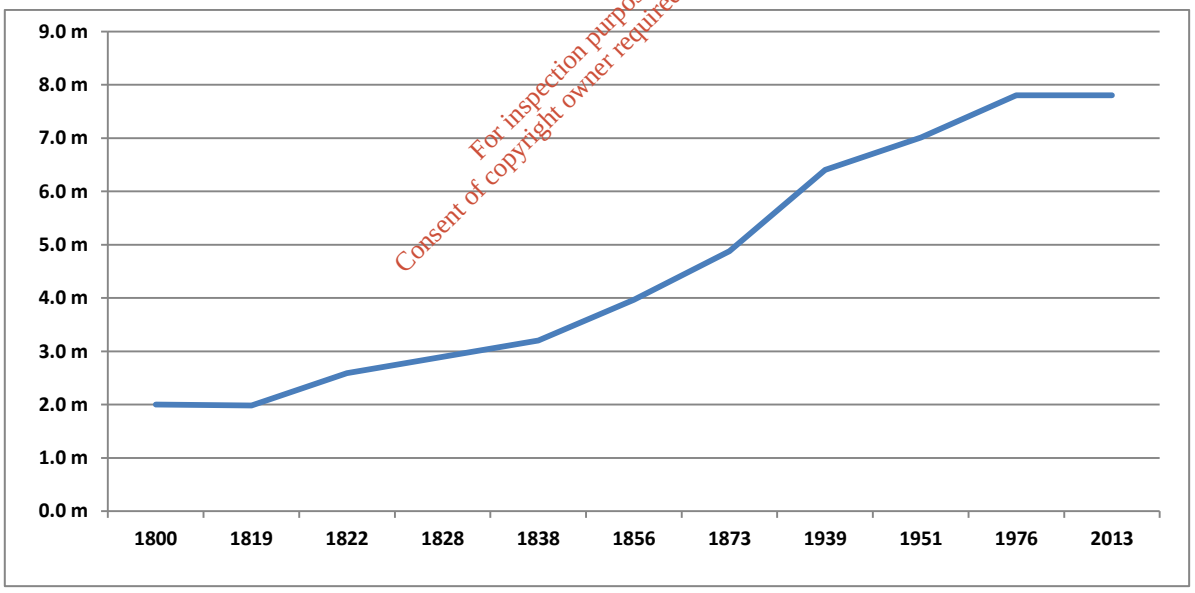
This depth was achieved over a considerable period dating back nearly 200 years to 1818 when the construction of the North Bull Wall was commenced. The progression of the deepening of the Port's channel is shown indicatively in Figure 7 below.

The motivation for the construction of the North Bull Wall was to build on the benefits which the Great South Wall had already delivered (in holding back the movement of sand from the South Bull) by inducing a tidal scour in the shipping channel which would cause it to deepen over time.

The wall was completed in stages up to 1824 and had the intended effect of deepening the channel and bar as a result of the induced tidal scour. Within 50 years, the depth available at low water more than doubled from 2.0m to almost 5.0m.

The next significant development occurred in 1904 when Dublin Port & Docks Board acquired a suction dredger (the *Sandpiper*) which, by 1909 had further deepened the bar to 6.0m.

Figure 7: Indicative progression of the deepening of the bar and channel in Dublin Port since 1800



[14] Chart Datum is 2.51m below Ordnance Datum (Malin). From this point onwards in this document, where figures for berth depths or channel depths are quoted they should be understood to be expressed in metres below Chart Datum.

With a channel depth today of 7.8m, the depth available across the annual phases of the tides varies between two extremes:

- The Highest Astronomical Tide (HAT) expected in Dublin Port is 4.5m (implying a depth of water in the approach channel and fairway of 12.3m).
- The Lowest Astronomical Tide (LAT) is -0.1m giving 7.7m of water[15].

Between these two extremes, the depth of water is best described by reference to the mean levels of spring tides and neap tides.

Table 8 below indicates that the current channel depth of 7.8m allows Dublin Port accept ships with draughts of up to **10.2m** on most days in the year but within a tidal window.

Ships with draughts of up to **7.5m** can enter the port without tidal restriction on most days over the course of the year. In practice, the maximum draught for ships operating daily fixed time schedules (notably Ro-Ro ferry companies who account for 50% of Dublin Port's volume) is **6.8m**.

Table 8: Draught handling capabilities at different channel depths

Current maintained depth: 7.8m	**Mean high water**	**Channel depth**	**Max draught***		**Mean low water**	**Channel depth**	**Max draught***
Spring tides	4.1m	11.9m	10.9m		0.7m	8.5m	**7.5m**
Neap tides	3.4m	11.2m	**10.2m**		1.4m	9.2m	8.2m

Proposed maintained depth: 10.0m	**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**		1.4m	11.4m	10.4m

* Assumes an under keel clearance of 1.0m

The proposed increase in channel depth would increase the maximum draught of ship that could be accommodated on most days during the year to **12.4m** (with a tidal restriction)[16].

It would also allow ships with draughts of up to **9.7m** enter the port at any stage of the tide on most days of the year. In practice, a channel of 10.0m would allow ships with draughts of up to 9.0m to enter the Port at any time on any day throughout the year.

---

[15] HAT and LAT are the highest and lowest tides which can be predicted to occur under average meteorological conditions and under any combination of astronomical conditions

[16] Utilisation of this maximum draught capacity would require deepening of berths in future years below the levels envisaged in this current project. However, the berths to be built as part of the ABR Project would be designed to allow this local dredging to be carried out as and when required.

10. The average cargo load in Dublin is increasing

The average size of a ship's cargo in Dublin Port has consistently increased over the years.

Table 9 below shows the average cargo (discharged and loaded) per ship arrival in each cargo mode for the period from 1990 to 2013.

Table 9: Trends in average cargo sizes by mode, 1990 to 2013

Mode	Unit of measurement	1990	2013	Change
Ro-Ro	Units per ship	69	160	x 2.3
Lo-Lo	TEU per ship	197	538	x 2.7
Bulk Liquid	Tonnes per ship	3,759	8,443	x 2.2
Bulk Solid	Tonnes per ship	3,167	5,720	x 1.8
Break Bulk	Tonnes per ship	1,580	1,520	x 1.0

In the case of Ro-Ro, the average cargo interchanged (i.e. discharged and loaded) per ship has increased by 230% in 23 years.

However, there has been an even larger increase of 270% in Lo-Lo (container) shipments.

The increasing cargo loads has been facilitated by a gradual increase in ship size.

11. The sizes of ships are increasing

The size of ships is increasing worldwide and the largest ships in specific categories have reached extraordinary sizes in recent years as shown in Table 10 below.

Table 10: A selection of large ship characteristics in various modes

Name	Category	Year	Capacity	Length	Breadth	Draught
Stena Hollandica	Ro-Ro	2010	5,500 lane-metres 1,376 passengers	240m	32.0m	6.5m
Maersk McKinlay Moller	Lo-Lo	2013	194,153 DWT 18,000 TEU	399m	59.0m	16.0m
Vale Korea	Bulk solid	2013	400,000 DWT	362m	65.0m	23.0m
TI Oceania	Bulk liquid	2003	441,585 DWT	380m	68.0m	24.5m
Oasis of the Seas	Cruise liner	2009	Berths 6,360 Crew 2,165	361m	47.0m	9.3m

Whereas Dublin Port might aspire to accommodate the largest Ro-Ro and cruise ships, it is inconceivable that the port would seek to handle the largest ships in other modes.

It is necessary, therefore, for DPC to take a view on the reasonable maximum size ship which the Port should cater for in the coming decades particularly in the Lo-Lo and bulk solid modes.

12. The size of ships Dublin Port needs to cater for in the future

The trend in cargo size and ship size across all modes is inexorably upward and we believe that in order to maintain national competiveness and operational efficiencies DPC needs to plan now for the provision of infrastructure to cater for larger ships. The need is different across the modes as discussed below.

Container ships

The maximum size of container ship 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. In practice, the maximum size of container ship which has called to the Port in recent years is in the order of 1,400 TEU.

As the size of container ships increases at the top end to 18,000 TEU, it is inevitable that there will be a cascading downwards of what were once ocean-going container ships into the short sea sector (including Ireland to Continental Europe). We believe that Dublin Port needs to be able to cater in the future for container ships with a nominal capacity up to about of 3,500 TEU.

Table 11 shows an analysis of the distribution of ship lengths and ship draughts for 2,726 ships in the range 1,000 TEU to 3,500 TEU. It is clear from this analysis that ship length will not be an issue for container ships but the project will need to provide deeper water in the approach channel if Dublin Port is going to handle container ships up to 3,500 TEU.

Table 11: Distribution of container ship lengths and draughts in the range 1,000 TEU to 3,500 TEU[17]

Length	# ships		Draught	# ships	Cumulative %
100m	11		8.0m	100	3.7%
150m	327		9.0m	460	20.5%
200m	1,620		10.0m	574	41.6%
250m	737		11.0m	545	61.6%
300m	31		12.0m	829	92.0%
			12.4m	**111**	**96.1%**
			13.0m	76	98.9%
			14.0m	31	100.0%
	2,726			**2,726**	

The proposed increase in channel depth would allow 96.1% of ships with TEU capacities in the range 1,000 to 3,500 TEU to enter the Port.

Looking at ranges of TEU size in Table 12 below, the proposed increased channel depth would allow Dublin Port to accept 91.5% of ships in the capacity range 2,001 TEU to 3,000 TEU and 86.9% of ships in the range to 3,500 TEU.

Table 12: Container ship draughts in the range 1,000 TEU to 3,500 TEU

TEU range	No. ships with draught ≤ 12.4m	%	No. ships with draught > 12.4m	Totals
1,000 to 2,000	1,747	99.0%	18	1,765
2,001 to 3,000	733	91.5%	68	801
3,001 to 3,500	139	86.9%	21	160
Totals	**2,619**	**96.1%**	**107**	**2,726**

These percentages relate to maximum draught. On many occasions ships will operate at less than full draught and in reality, therefore, the percentage of ships in each category which could access Dublin Port would be even higher than indicated above.

[17] Based on data extracted from Sea-Web™ database (www.sea-web.com)

Dry bulk

Ships in the dry bulk category vary greatly in size. In Dublin Port, dry bulk shipments vary from about 3,000 tonnes up to about 25,000 tonnes.

Dublin Port has a growing trade in bulk commodities in the larger size of bulk carriers. These commodities include animal feed and increasingly biomass. Cargo parcels shipped into Dublin are limited to a maximum size in the order of 25,000 tonnes due to the channel depth constraint.

A deepening of the channel as proposed will greatly increase the number of bulk carriers which can access Dublin Port and will enable larger shipments to be received.

Deepsea Ro-Ro

There is a category of Ro-Ro ships with the capability to also take containers on deck which has started to call to Dublin Port in recent years.

This category includes deepsea ships which typically have draughts in the range 9.6m to 11.6m and lengths in excess of 200m. Dublin Port anticipates there being increased demand from ships in this category.

Multipurpose Ro-Ro

The largest part of Dublin Port's tonnage is Ro-Ro, mostly on multipurpose passenger / freight ferries. Such ships are neither particularly long nor deep draughted. The larger ships are now, however, at lengths (240m) which the berths in Dublin Port cannot accommodate.

A key element of the proposed project, therefore, is to provide two berths, one new berth (the New Berth 52) and the other by way of an extension to the existing Berth 49, both with double-tiered loading ramps which can accommodate these longer multipurpose Ro-Ro ferries.

Cruise ships

In the case of cruise ships, on the other hand, the proposed channel depth would allow virtually all cruise ships to enter the Port at any stage of the tides as shown by the analysis of 556 cruise ships in Table 13. This analysis mirrors that shown previously in Table 11 for containers ships.

Table 13: Distribution of cruise ship lengths and draughts[18]

Length	# ships		Draught	# ships
100m	234		8.0m	451
150m	63		9.0m	99
200m	61		10.0m	4
250m	51		11.0m	1
300m	112		12.0m	1
350m	32			
400m	3			
	556			**556**

The primary limitation in Dublin Port is ship length and the maximum size of ship which can be accommodated currently is 300m. Given the potential for large growth of Dublin Port's cruise business, the proposed project will provide for longer ships to allow this potential to be realised and the great majority of the world's fleet of cruise ships would be able to access the new berths in Dublin Port.

13. Catering for all the requirements of larger ships

As the sizes of ships increase, they do so in all dimensions.

- Firstly, the beams of ships increase. The primary implication of this in Dublin Port relates to cargo handling where Ro-Ro ramps may need to be wider or shore side cranes may need to have greater outreach. This is the most straightforward dimension to cater for and the proposed Ro-Ro ramps within Alexandra Basin West have been dimensioned accordingly.
- Secondly, the draughts of ships increase. This is catered for in the ABR Project by the proposed deepening of the channel from 7.8m to 10m and by building new berths with a standard depth of 15m.
- Finally, the lengths of ships increase. Dublin is a river port and the width of the river imposes a limit on the length of ship which can enter and manoeuvre within the port. The current length limitation is 300m and ships of this length can turn at the entrance to Alexandra Basin West. In order to handle ships longer than 300m, Dublin Port needs a larger turning basin than currently exists.

Answering the challenge of handling ships of different types (Ro-Ro, Lo-Lo, dry bulk carriers and cruise ships), of increasing sizes (in beam, draught and length) and all within a busy and relatively

[18] Based on data extracted from Sea-Web™ database (www.sea-web.com)

confined area of the Port (North Wall Quay Extension and Alexandra Basin West) was central to the rationale and design of the ABR Project.

This challenge was addressed through detailed simulation exercises in the National Maritime College of Ireland and involved testing of proposed layout configurations by simulating ship manoeuvring operations under various conditions of berth occupancy and under various combinations of wind and tidal conditions.

The outcome of these simulation studies confirmed the optimum layout and design for the berths in Alexandra Basin West and on North Wall Quay Extension. A sample output from the ship simulation studies is attached as Appendix 5. This shows a large cruise ship manoeuvring onto one of the new berths proposed on North Wall Quay Extension with ships berthed on all other berths in Alexandra Basin West.

14. Ship number projections

Increased cargo volumes imply increased ship numbers.

However, as ships get bigger and as the average cargo per ship increases, the rate of increase in the number of ships calling to Dublin Port will be lower than the rate of increase in cargo tonnes.

DPC believes that average cargo volumes in each mode will continue to increase over the period of the Masterplan, albeit at a lower rate than seen in the period 1990 to 2013. Table 14 summarises the assumed levels of increase in the years to 2040.

Table 14: Assumed increase in average cargo volume per ship 2013 to 2040

	2013 to 2040
Ro-Ro	25%
Lo-Lo	100%
Bulk Liquid	20%
Bulk Solid	50%
Break Bulk	10%

The above increases over the period 2013 to 2040 are conservatively less than those shown previously in Table 9 for the period 1990 to 2013. Based on these assumptions, Table 15 below shows the number of ship arrivals for 2013 and the projected numbers for 2040 by mode.

Table 15: Trend in ship arrivals[19] from 2013 to 2040

	2013	2040	2013	2040
	# ships per year		*# ships per day*	
Ro-Ro	4,928	9,696	14	27
Lo-Lo	1,101	1,066	3	3
Bulk Liquid	445	403	1	1
Bulk Solid	338	464	1	1
Break Bulk	39	50	0	0
Cruise	87	160	0	0
Other	118	200	0	1
Total	**7,055**	**12,038**	**19**	**33**

The above analysis suggests that the projected 108% increase in cargo in the years to 2040 (from 28.9m to 60.0m tonnes as shown in Table 4) will result in a 71% increase in ship numbers.

The largest part of Dublin Port's business is Ro-Ro and, within this mode, 85% of the volume is on ships operating on fixed daily schedules to UK west coast ports. These ships operate with guaranteed slot times which are grouped in various windows over the course of a day. These windows amount to five hours per day currently.

By 2040, the projected increase in Ro-Ro volumes will likely increase these guaranteed Ro-Ro windows to ten hours over the course of the day to accommodate 8,242 arrivals (being 85% of 9,696 Ro-Ro arrivals) over the course of a year.

This would leave 14 hours per day available for the remaining 3,797 arrivals an increasing number of which would be deep-draughted.

In these circumstances it would be difficult at times for deep draughted ships (deep even by today's standards) to enter the port without significant delays while they wait for sufficiently high water at times when UK Ro-Ro ferry movements are not being prioritised.

Aside from the requirement to be able to handle deeper draughted ships than can be handled today, the increasing tidal window restrictions described above is an important motivator for the proposed channel deepening.

[19] Five year rolling averages

15. Dublin Port needs to configure port operations to best meet future capacity requirements without additional infill beyond the existing port boundaries

All of Dublin Port's current estate was developed on land reclaimed from the sea.

For many years this was achieved on the basis of Ministerially approved Harbour Works Orders. The last significant such order was S.I. No. 24 / 1988 which authorised works in Alexandra Basin West.

Since 1988, the only application Dublin Port has made to expand the footprint of the Port was the proposed infilling of 21 hectares to the east of the port. The proposed project would have created additional berths for both Ro-Ro and Lo-Lo. Permission was refused by An Bord Pleanála in June 2010 (29N.PA0007).

Subsequent to this refusal, the focus of DPC has shifted to development of the Port's existing estate including lands over which it has been possible for the Company to regain control. This shift of focus is central to the Masterplan 2012 to 2040.

DPC's efforts to regain control over port lands have been greatly facilitated by the economic collapse since 2007 which has eliminated speculation on the redevelopment of port lands for non-port uses. As a result, DPC has land available to provide transit storage for cargo in proximity to the new infrastructure proposed in the ABR Project.

16. Existing infrastructure needs to be renewed

It is proposed to build or rebuild almost 3km of berths. Part of the need for this arises due to the age and condition of existing berths as follows:

- The 230m bulk jetty in Alexandra Basin West was completed in 1967 and is now 47 years old. Over its life it has been used for the handling of fertilisers (Gouldings 1967 to 1976), coal (the National Coal Company to 1984) and lead and zinc ore concentrates (Tara Mines since 1977). Repairs were to the jetty were completed in March 2007 to give it an additional ten years or so of useful life.
- Ocean Pier was constructed between 1940 and 1954 and is now 60 years old. It is in poor condition. In particular, Berths 32 to 35 on Ocean Pier are not suitable for planned future uses, particularly for container handling. These berths are part of a wider run of berths from 29 to 40 which are approaching the end of their useful lives. To date, 38 to 40 have been rebuilt and the proposed rebuilding of 29 to 35 within this project will largely complete the necessary capital refurbishment of Alexandra Quay West (29 to 31), Ocean Pier (32 to 37) and Alexandra Quay East (38 to 40).

- The construction of North Wall Quay Extension to provide river berths with depths of 6.5m and berths on the north side of the wall (in what is now Alexandra Basin West) of 7.7m was commenced in 1871 by Bindon Blood Stoney. These were the deep berths of the time and followed on from the standard set by the reconstruction of Sir John Rogerson's Quay and Great Britain Quay between 1869 and 1888. These works were the first major development works undertaken by the then newly established (in 1868) Dublin Port & Docks Board. By today's standards and by reference to future requirements, these berth depths are insufficient.

17. The legacy contamination issue

Alexandra Basin West is contaminated with heavy metals particularly as a result of past ship building and ship repair activities. One effect of this contamination is to limit DPC's ability to carry out essential maintenance dredging operations. For example, Berths 32 to 35 were dredged in 2005 under the terms of a Waste Permit issued by Dublin City Council. At that time 40,000m^3 of contaminated dredge spoil were removed and shipped to Germany for treatment and disposal at a cost to DPC of €4.0m.

The berths in Alexandra Basin West will become increasingly busy in the future and it is important (both operationally and financially) that DPC is able to include these berths within routine maintenance dredging campaigns.

18. Graving Dock #2

The new berth configuration proposed in Alexandra Basin West involves the extension of Berth 29 on Alexandra Quay West westwards in front of the entrance to Graving Dock #2. As a result, the Port will lose the utility of this graving dock.

In common with many ports, the availability of ship repair facilities in Dublin Port was traditionally an important part of the Port's overall offering of infrastructure and services.

However, the operation of graving docks was always financially challenging and, while deemed to be an appropriate cost for Dublin Port & Docks Board to bear in the past, Dublin Port Company's view now is that the pressure on it to make best use of the Port's existing estate allied to the poor commercial returns from the Port's graving dock combine to make Graving Dock #2 redundant.

Graving Dock #2 dates from 1957 and, when built, was considered by Dublin Port & Docks Board to be of national importance in the wake of the Emergency during which time there had been an increase in ship repair work in the Port. Absent this consideration, it is doubtful if Graving Dock #2 would have been built against a background where there were already ongoing financial deficits in the operation of Graving Dock #1 (which had been built in 1860).

The poor financial performance of graving dock operations in Dublin Port continued and over the past 30 years:

- From 1994 to 1997, Graving Dock #2 was operated by Liffey Marine Limited (which went into liquidation)
- From 1998 to 2002 Harris Pye Dry Docks Limited took over but this company also went into liquidation
- In 2003 Dublin Graving Docks Limited took over the facility and are still in situ today

At this stage, the poor financial return to DPC from Graving Dock #2 represents an underutilisation of port assets and is sufficient reason alone for DPC now to reconfigure the graving dock and its 1.4 hectare curtilage. Commercially, DPC earns about one sixth of what would be earned by an equivalent land area elsewhere in the Port close to working berths.

In addition to this, Graving Dock #2 is suffering the same fate as the original Graving Dock #1 and as ships get bigger it is able to accommodate fewer and fewer of the ships which call to the Port. The proposed deepening of the channel and berths will exacerbate this situation.

Graving Dock #2 currently handles in the region of 25 to 30 ships in a given year and, at this stage, half of the vessels arriving into the Port could not be accommodated if the need arose for repairs at short notice (see Table 16).

Table 16: Proportion of arriving ships that could enter Graving Dock #2

	# arrivals	% that could enter graving dock
2012	6,742	51.8%
2013	6,711	50.0%

The small number of ships which use graving Dock #2 can be readily accommodated in docks elsewhere in Ireland (Belfast and Cork) or on the west coast of Britain (including Liverpool and Milford Haven).

Against the above background, DPC intends to close Graving Dock #2 to allow the westward extension of Berth 29.

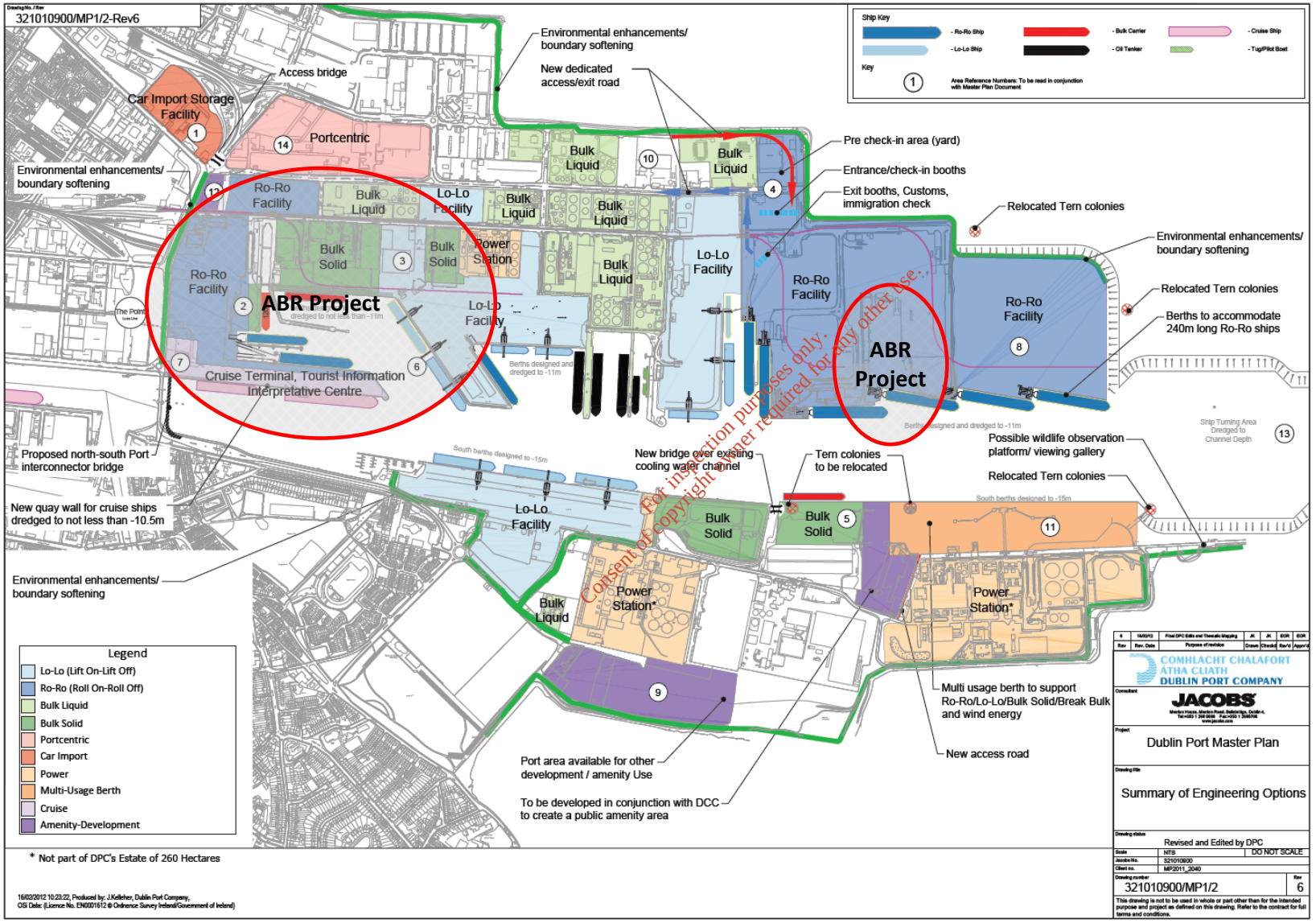
19. Concluding remarks

The ABR Project is justified on a number of bases ranging from the need to provide capacity for projected growth to the requirement to replace life-expired assets.

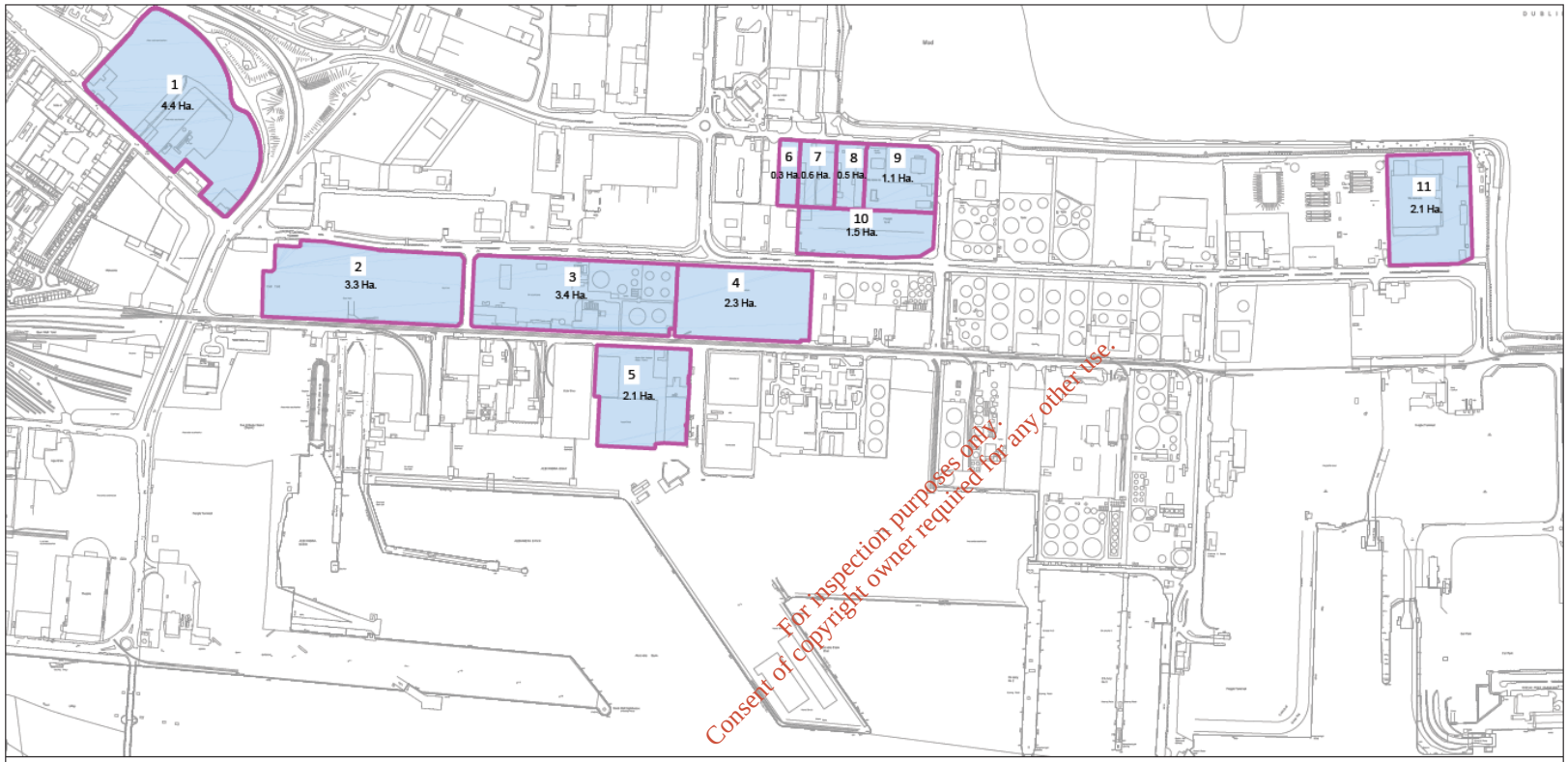
The project is part of a Government-endorsed Masterplan which sets out a development strategy for the Port over the next 30 years.

Given the long lead time to construct port assets and given their long economic life, the project incorporates measures to future proof the Port.

Appendix 1 – The ABR Project in the context of DPC's Masterplan 2012 to 2040



Appendix 2 - Lands re-acquired or in the process of being re-acquired by DPC



Legend

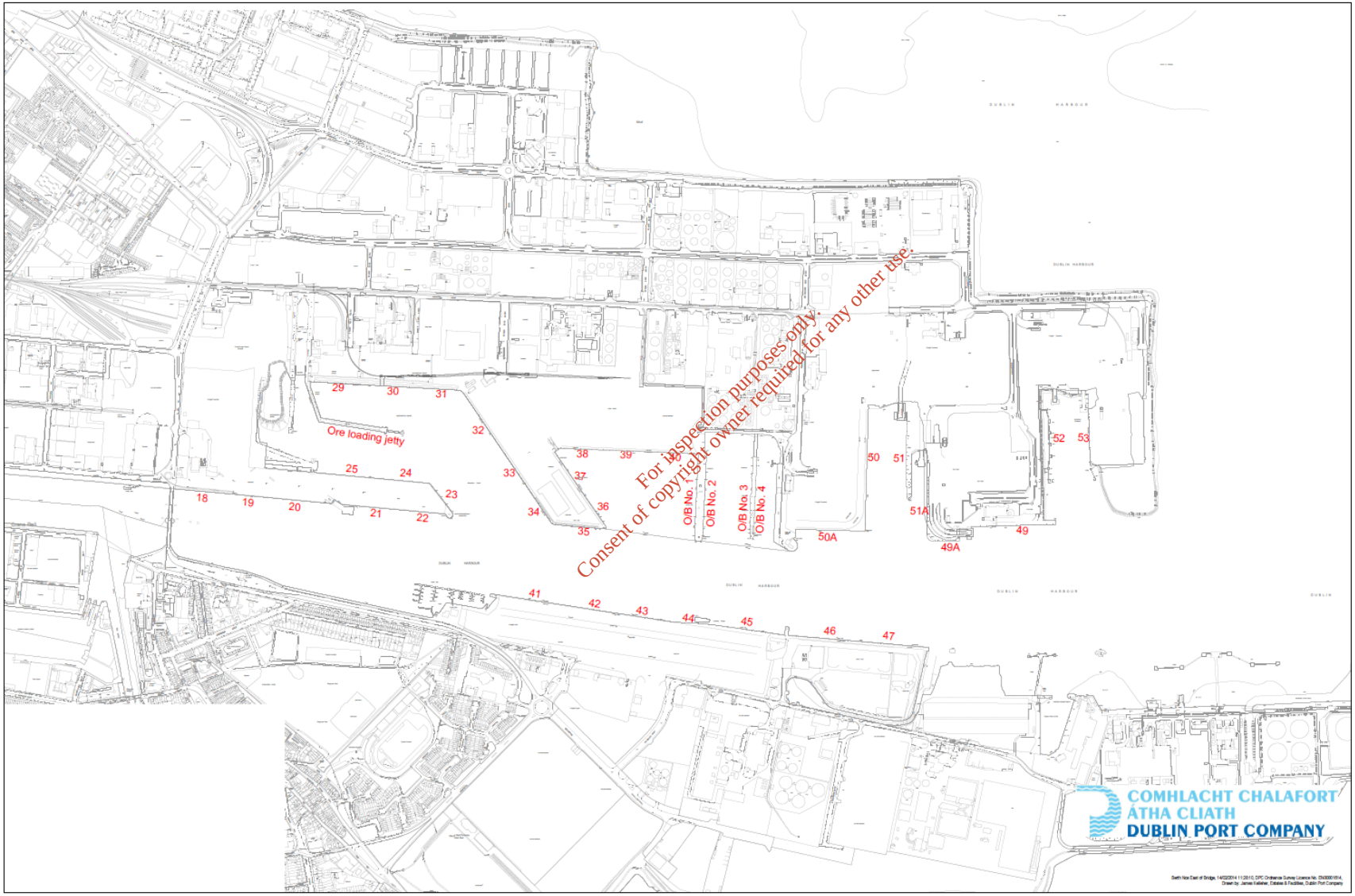
Site No.	Area (Ha.)	Note
1	4.4	Prospective trade car facility. Planning received 28-05-2012. In use by August 2013
2	3.3	Former coal storage yard. Available now.
3	3.4	Topaz facility to be relocated. Contracts being finalised.
4	2.3	Former Texeco yard. Available now.
5	2.1	Miscellaneous obsolete port buildings. Will be cleared in 2013.
6	0.3	Leased site. Contract to get this site back close to completion.
7	0.6	Leased site. Contract to get this site back close to completion.
8	0.5	Former Heiton site. Available now.
9	1.1	Second Topaz facility.
10	1.5	Former Crosbie site reverts November 2013
11	2.1	Former Crosbie site. Available now.
	21.6	*Total combined site areas*

0 100 200 Metres

COMHLACHT CHALAFORT ÁTHA CLIATH
DUBLIN PORT COMPANY

24/10/2012 12:49:26, Drawn using AutoCAD Map 2013 by J.Kelleher, Estates & Facilities, Dublin Port Company, DPC Ordnance Survey licence No. EN00001612

Appendix 3 – Location of Dublin Port's main existing berths

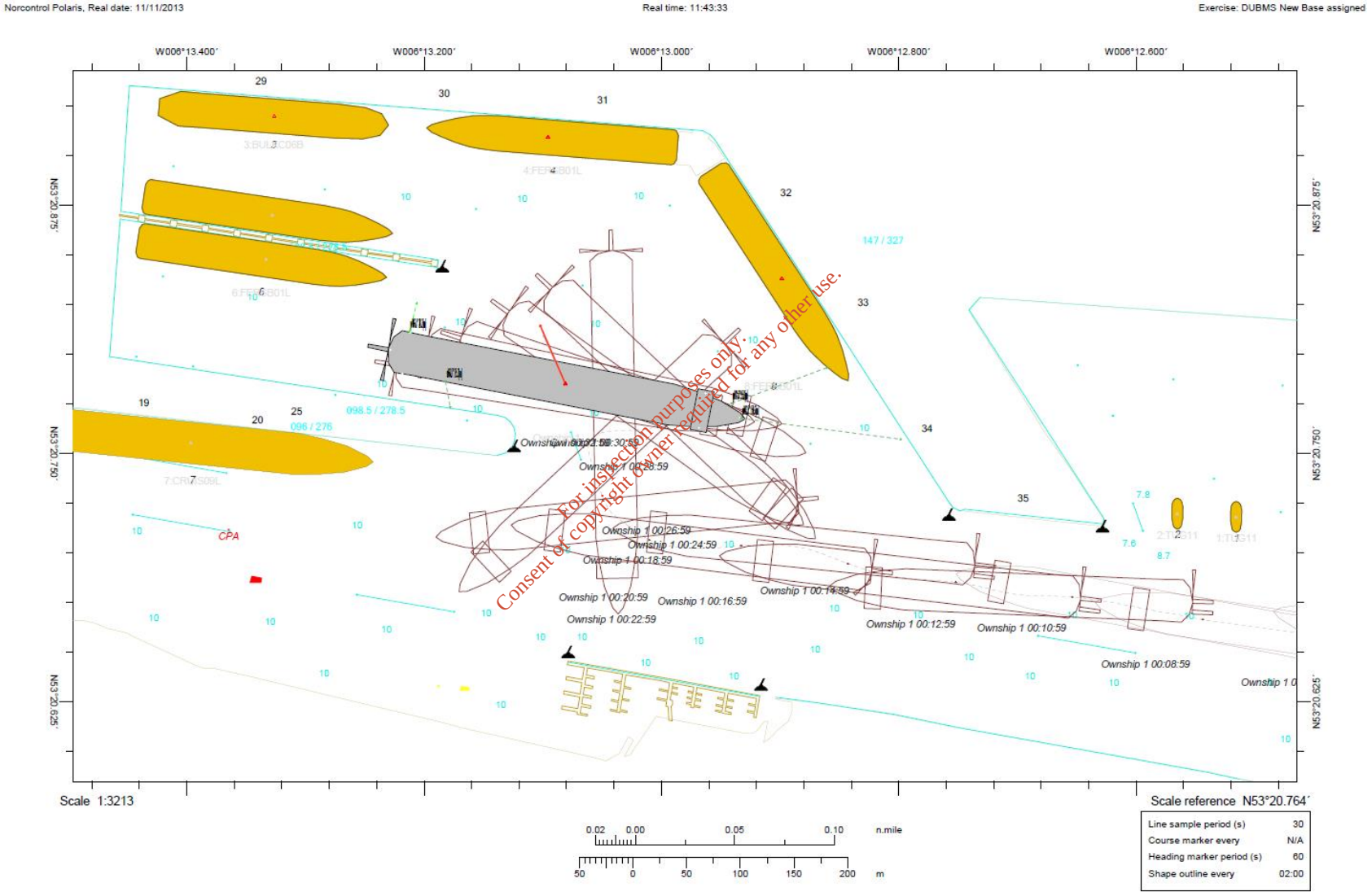


Appendix 4 - A summary of the depths of Dublin Port's main berths (current and proposed)

Berth ID's	Part of proposed development?	Location	Current standard depth	Proposed standard depth	Proposed dredged depth	Comment
			(a)	*(b)*	*(c)*	
18 to 22	**Yes**	**North Wall Quay Extension**	**6.5m**	**15.0m**	**10.0m**	**North Wall Quay Extension will be reconfigured. It will be shortened, narrowed and deepened.**
23	**Yes**	**North Wall Quay Extension**	**7.1m**	**n/a**	**n/a**	
24 to 25	**Yes**	**North Wall Quay Extension**	**7.7m**	**15.0m**	**10.0m**	
Jetty	**Yes**	**Ore loading jetty**	**9.8m**	**n/a**	**n/a**	**The ore loading jetty will be removed and replaced by a dedicated jetty for large Ro-Ro ships.**
29 to 30	**Yes**	**Alexandra Quay West**	**10.3m**	**15.0m**	**10.0m**	**Alexandra Quay West will be lengthened by expanding Berth 29 westwards.**
31	**Yes**	**Alexandra Quay West**	**9.8m**	**15.0m**	**10.0m**	
32 to 34	**Yes**	**Ocean Pier West**	**9.5m**	**15.0m**	**10.0m**	
35	**Yes**	**Ocean Pier South**	**9.5m**	**15.0m**	**10.0m**	
36 to 37	No	Alexandra Basin East	10.3m	n/a	n/a	
38 to 40	No	Alexandra Quay East	12.0m	n/a	n/a	
OB1	No	Oil berth	10.4m	n/a	n/a	
OB2	No	Oil berth	10.7m	n/a	n/a	
OB3	No	Oil berth	10.1m	n/a	n/a	
OB4	No	Oil berth	6.5m	n/a	n/a	
50	No	DFT container terminal	9.5m	n/a	n/a	
50A	No	DFT container terminal	11.0m	n/a	n/a	
51	No	Ro-Ro berth	8.0m	n/a	n/a	

Berth ID's	Part of proposed development?	Location	Current standard depth	Proposed standard depth	Proposed dredged depth	Comment
			(a)	*(b)*	*(c)*	
51A	No	Ro-Ro berth	8.0m	n/a	n/a	
49A	No	Ro-Ro berth	8.0m	n/a	n/a	
49	No	Ro-Ro berth	11.0m	n/a	n/a	
52	**Yes**	**Ro-Ro berth**	**8.0m**	**n/a**	**n/a**	**Both berths will be replaced by a single new long river berth (New Berth 52). This berths will have a Proposed Standard Depth of 15m and a Proposed Dredged Depth of 10.0m**
53	**Yes**	**Ro-Ro berth**	**5.9m**	**n/a**	**n/a**	
41	No	MTL container terminal	7.4m	n/a	n/a	
42 to 43	No	MTL container terminal	11.0m	n/a	n/a	
44	No	MTL container terminal	8.0m	n/a	n/a	
45	No	MTL container terminal	8.7m	n/a	n/a	
46 to 47	No	South Bank Quay	11.0m	n/a	n/a	
48	No	ESB oil jetty	11.0m	n/a	n/a	

Appendix 5 Sample output from ship simulation studies



Appendix 6 Alternatives considered by DPC

A. Introduction

The ABR Project is complex and envisages works in three areas:

- Firstly, there is the re-engineering of infrastructure in and surrounding Alexandra Basin West to provide new deeper berths for a range of types of ship including Ro-Ro, Lo-Lo, dry bulk, general cargo and cruise ships.
- Secondly, there is the building of a new river berth for Ro-Ro ships and the removal of two existing Ro-Ro berths to facilitate the long term deployment of larger ships by ferry operators
- Thirdly, there is the deepening of the Port's entrance channel to allow deeper draughted ships of all types to access Dublin Port.

These works are intended to provide additional capacity in a number of areas:

- Increase the capacity of the Port's channel to handle deeper draughted ships
- Provision of a large turning basin at the heart of the port to reduce the Port's ship length restriction
- Provision of deeper draughted berths for a variety of types of ship including Ro-Ro, Lo-Lo, bulk and cruise

Given this complexity, the possible alternatives to the development on a like for like basis are limited. In examining alternatives to the proposed development, therefore, DPC considered each element in isolation and, where appropriate, various combinations of the three elements.

B. Range of alternatives considered

The proposed development is derived from DPC's Masterplan 2012 to 2040 which itself identified a range of options which, in aggregate, would allow Dublin Port to double its capacity by 2040.

This analysis of the alternatives considered by DPC, therefore, commences with alternatives within Dublin Port (based on the Masterplan options) as follows:

1. The "do nothing" scenario
2. Development of other locations within the existing area of Dublin Port
3. Creation of new additional port areas at Dublin Port

The Masterplan generally (including the specific objective of developing additional port capacity at Dublin Port) is supported by National Ports Policy[20] in the following terms:

[20] National Ports Policy 2013, page 25

Dublin Port Company is the State's largest port company. It handles approx. 43% of all seaborne trade in the State. The port's importance is even more pronounced in the higher-value unitised (Lo-Lo and Ro-Ro) sectors, where it handles approx. 70% of all Lo-Lo and 85% of all Ro-Ro trade in the State (IMDO, 2012a).

In February 2012, Dublin Port published its Masterplan, which sets out a vision of development over the next 30 years. The plan represents a comprehensive framework for the long-term development of the port and is underpinned by three core principles:

- *Maximisation of usage of existing port lands.*
- *Reintegration of the port with the city.*
- *Development of the port to the highest environmental standards.*

It is recognised that the location of Dublin Port Company inevitably gives the port competitive advantage over other ports and will give rise to competition concerns. However, a continuation and strengthening of the landlord model of operation in the port's estate will allow for continued intra-port competition between the privately operated port terminals within the port estate.

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.

National Ports Policy categorises Dublin Port as a Port of National Significance or a Tier 1 port. Tier 1 ports are defined by reference to their:

- Accounting for at least 15% to 20% of national port tonnage
- Having the potential to lead the development of future port capacity in the medium and long term when and as required

Beyond this, the National Ports Policy removes any doubt that additional nationally important port capacity to be provided to service the Greater Dublin Area should be provided at Dublin Port[21]:

In relation to the TEN-T core network, it is proposed that the Greater Dublin Area (GDA) Ports Cluster be included as a core port. This port cluster concept encompasses the existing ports within the GDA, and any future port facilities that might be developed up to 2050. This is consistent with the current Regional Planning Guidelines for the GDA 2010–2022, which support examination of the expansion of Dublin Port and/or a new port facility on the east coast of the GDA.

However, National Ports Policy categorises only Dublin Port Company as a Port of National Significance (Tier 1) within the Greater Dublin Area.

---

[21] National Ports Policy 2013, page 25

Notwithstanding this strong national policy endorsement for development at Dublin Port, DPC has gone beyond an analysis of the alternatives in Dublin and has looked at possible alternatives elsewhere as follows:

4. Alternative locations in other existing ports
5. The proposed cruise development in Dun Laoghaire Harbour
6. Other locations for new ports

C. The "do nothing" scenario

The import and export of goods is centrally important to Ireland and particularly to the economy's recovery following the collapse after 2007.

There is a strong correlation between economic growth and the volume of goods handled through Dublin Port and it is clear that the volume of goods which Dublin Port will be called on to handle will increase substantially in the years ahead.

Allied to this increase in the volume of goods, it is also clear that the size of ship's that will service the import and export of goods and the needs of passengers will increase.

From a national policy perspective, Dublin Port is a Tier 1 port and this places an obligation on DPC to ensure timely provision of suitable infrastructure to cater for future requirements.

Dublin Port additionally has an important role within EU policy given its designation (along with Cork and Shannon Foynes) as one of the country's three core ports in the TEN-T network[22].

The timescale from planning to building new port infrastructure and the new infrastructure being available for use is long (five to ten years) and, even at a conservative annual growth rate of 2.5%, Dublin Port's volumes would increase by between 13% and 28% over this time interval.

A "do nothing" approach by DPC would, therefore, inevitably create an infrastructural deficit in the coming years.

Against this background, DPC does not consider that a "Do Nothing" approach is an alternative to the ABR Project.

---

[22] 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.

D. Development of other locations within the existing area of Dublin Port

The ABR Project has been framed within the context of the range of engineering options identified in DPC's Masterplan 2012 to 2040 which, in aggregate, can deliver the objective of doubling the Port's capacity by 2040.

Since publication of the Masterplan, DPC has already made progress on some of the engineering options notably:

- Dublin City Council has granted planning permission[23] to Topaz Energy Limited to build a new facility at Location #10 shown in Appendix 6.1.
- Dublin City Council has also granted DPC planning permission[24] to develop the car import facility at Location #1 shown in Appendix 6.1. Construction of this facility is underway and completion is expected in mid-2014.
- DPC purchased the warehouse at Location #4 shown in Appendix 6.1 as a first step towards the development of the multi-user check in area for Ro-Ro.
- By mid-2014, DPC will have completed the reconstruction and deepening (to -12.0m CD) of Alexandra Quay East (360m).

The alternative options within the existing land area of Dublin Port which DPC has considered have, firstly, focussed on those options which do not involve expanding the footprint of the Port. Alternatives involving a potential increase in the Port's footprint are addressed in Section E.

Options for cruise ships

Cruise ships have to date been handled in Dublin Port on berths originally built and still primarily used for the loading and discharge of cargo. Chief among these are Berths 32 and 33 on Ocean Pier West in Alexandra Basin West.

Notwithstanding that these berths are cargo berths, DPC has succeeded in building a sizable cruise business (the largest of any port on the island of Ireland). However, as cargo volumes grow into the future, the demands on these berths will intensify, putting pressure on the Port's cruise business.

DPC is committed to growing its existing cruise business and this commitment is matched by other important stakeholders including Dublin City Council who, among others including DPC, published a joint plan (the CTUR Local Action Plan, June 2011) for the development of Dublin's cruise business[25].

---

[23] Planning reference 3171/12. Planning permission granted on 14th June 2013

[24] Planning reference 3788/11. Planning permission granted on 20th April 2012

[25] *Local Action Plan City of Dublin Cruise Traffic and Urban Regeneration of City-Port Heritage* available at http://www.dublincity.ie/Press/dccPressPacks/CTUR/Documents/Cruise%20Traffic%20Document%20Complete.pdf

Within its Masterplan, DPC considered a number of options regarding the preferred location for the handling of cruise ships within the port[26] including the option suggested in the CTUR Local Action Plan. In addition to this option, DPC also considered the relocation of container operations on South Bank Quay and a location suggested in the DDDA's Draft Poolbeg Planning Scheme of 2008.

The preferred option for DPC is to berth cruise ships on North Wall Quay Extension, as close to the city as possible. In addition to this location, DPC also uses existing berths on Sir John Rogerson's Quay for the smaller cruise ships.

It is important to emphasise that the new berths proposed on North Wall Quay Extension will be multi-purpose berths and will also service the needs of other types of ship, notably car transporters (demand from which tends to peak during the winter months when there is no cruise business).

Other Trades

Given the existence of facilities for particular trades at various locations within the Port and given that there is no significant unutilised berths in the Port, there are no realistic alternatives for the development of new facilities for Ro-Ro, Lo-Lo or bulk trades on the north side the Port.

There are, however, alternatives to meet the requirements of other trades by the creation of new additional port areas. These alternatives are analysed in Section E below

Continuity of existing operations during development works

In selecting the chosen location for the proposed development, DPC also was constrained by the objective of maintaining the continuity of the operations of existing port users. Given the high levels of berth utilisations already achieved in Dublin, development at locations other than those in the proposed development would inevitably lead to a disruption of existing operations.

Conclusion

In conclusion, the current high level of activity in the Port, allied to the commitments made by DPC to maximise the utilisation of existing land and infrastructure, have combined to leave the ABR Project as the only viable way for DPC to begin to deliver the Masterplan's capacity objective.

[26] http://www.dublinport.ie/fileadmin/user_upload/documents/03._Cruise_berth_options_analysis.pdf

E. Creation of new additional areas at Dublin Port

DPC has committed in its Masterplan to maximise the utilisation of existing lands and infrastructure before seeking to provide additional capacity by way of reclamation. Although the Masterplan does identify such an eventuality, DPC believes that it is too early to envisage such a development now.

Notwithstanding this, these alternatives have been analysed in arriving at the proposed development.

Eastwards expansion on the north side of the port[27]

This option comprises a reduced version of the Dublin Gateway proposed development, permission for which was refused by An Bord Pleanála in its decision of June 2010 (29N.PA0007).

In terms of maximising existing infrastructure, DPC believes that it is too early now to proceed to develop the two river berths to the east until the two western river berths (the extended Berth 49 and the New Berth 52) have been built. The proposed development will see these two river berths being provided.

To seek at this stage to proceed with the development of the additional port areas at Location 8 in Appendix 6.1 would be premature.

Expansion on the Poolbeg Peninsula[28]

The Masterplan identifies the possibility of developments on the south side of the port.

DPC has rejected these locations as alternatives at the present time for a number of reasons:

- The limited road access to the Poolbeg Peninsula for HGV's
- The lack of rail access to the Poolbeg Peninsula
- The requirement to relocate existing protected tern colonies

Moreover, the overall planning framework for the Poolbeg Peninsula is currently unclear. A 2010 report prepared for the Executive Board of the DDDA concluded that the Draft Planning Scheme for Poolbeg prepared in 2008 was not adequately robust for submission to the Minister for the Environment, Community and Local Government. DPC understands that Dublin City Council will prepare a new development plan for the peninsula in the coming years.

Against this background, DPC does not believe that the options identified in the Masterplan for the development of additional port capacity on the Poolbeg Peninsula represent viable alternatives to the ABR Project.

---

[27] Location #8 in Appendix 6.1

[28] Location #5 and Location #11 in Appendix 6.1

Other possible expansions in Dublin Port

The only other lands within the Port area which could be reclaimed are those to the north in the Tolka Estuary and to the south fronting Sandymount Strand.

However, neither of these areas is adjacent to the navigable channel.

Moreover, the environmental impact of a development in either area would be significant in that the direct loss of habitat would be large and involve areas of ornithological importance.

Impacts would also be permanent and likely to be in contravention of the Habitats Directive.

The dredging requirement would be large and would have a significant effect on the benthic community.

The visual impacts on landscape would be more significant in either area as the Port would move closer to the existing shoreline.

There would be a loss of recreational waters on the northern side and Sandymount Beach would be impacted on the southern side. Large vessels would encroach into areas used for recreational sailing and windsurfing.

For these reasons, DPC has rejected these expansions as realistic alternatives to the ABR Project.

F. Alternative locations in other existing ports

In proposing the development in Dublin Port, DPC has considered a wide range of alternatives which might be proposed in other existing ports. Given the extensive nature of the development in Dublin Port many of these alternatives are only part-alternatives.

Underpinning the viability of nearly all of these alternatives is the consideration of location and distance to market on the landside. This central issue is addressed below before looking at the specific alternatives elsewhere.

The impact of location on the viability of alternative locations in other existing ports

The importance and impact of location on a port were usefully addressed in a recent report by the Competition Authority[29] in the following terms:

- The characteristics of the Irish ports sector are such that competition between ports (i.e., inter-port competition) appears limited. Many factors influence inter-port competition.

[29] Competition in the Irish Ports Sector, November 2013

These include port location, traffic trends, haulage costs, cargo specialisation, service frequency, road connectivity and the level of competition within a port[30].

- The level of cargo specialisation is largely determined by the location of a port. For example, Dublin Port and Belfast Port are located on the East Coast next to large urban centres and the shortest sea crossings to Great Britain[31].
- Ireland's four largest ports handle almost 80% of the island's tonnage and tend to specialise in handling specific cargo types due to their geographic location and proximity to bulk using industries. Dublin specialises in unitised cargo, Cork specialises in liquid bulk while Shannon Foynes specialises in dry bulk[32].

Table 6.1 below shows the road distances from Dublin City[33] (being the epicentre of the hinterland of Dublin Port) to a range of other ports in which alternatives to the proposed development in Dublin Port might be considered.

Table 6.1: Road distances from other ports to Dublin City

Port name	Distance from Dublin City
Larne	203 km
Belfast	167 km
Warrenpoint	116 km
Greenore	109 km
Dundalk	83 km
Drogheda	50 km
Bremore	34 km
Dun Laoghaire	14 km
Wicklow	56 km
Arklow	70 km
New Ross	158 km
Waterford	159 km
Rosslare	162 km
Cork	251 km
Shannon Foynes	197 km

[30] Competition in the Irish Ports Sector, November 2013, Page ii of the Executive Summary

[31] Ibid, Page 22

[32] Ibid, Page 34

[33] Source: AA Ireland Website

The above considerations in the Competition Authority's report arise principally and directly from the economic impact of location on onward transport costs. This impact is explained below:

- Typical fuel consumption for a HGV is about 8.0 mpg or 35 litres per 100km. The current cost of road diesel (net of VAT) is €1.22 per litre. This implies that the cost of fuel for road haulage is €0.43 per km.
- Belfast is 167 km away from Dublin and the cost in fuel for road haulage between the two is about €71.81. In the case of Waterford (159 km from Dublin), the cost is €68.37.
- In order for it to be more cost competitive to use Belfast or Waterford over Dublin, there would have to be a considerable difference in port costs in order to offset the additional road haulage cost.
- 80% of Dublin port's business is unitised (i.e. either Ro-Ro or Lo-Lo) and the maximum goods dues charge for a unitised load is €28.25. This is equivalent to the cost of fuel alone to move a container or trailer 65km from Dublin Port.
- A truck load of animal feed would typically be 28 tonnes and DPC would earn €28.00 in goods dues. This would, again, be equivalent to the fuel cost alone of moving the animal feed 65km from Dublin Port.

The financial impact of distance alone would, therefore, be a major impediment to the development of alternative facilities at most other ports in Ireland.

This financial impact would also translate directly into higher levels of CO_2 and other emissions.

These considerations apply to alternatives to the proposed development based on locations in other existing ports.

Beyond the financial and environmental considerations related to additional land transport, DPC additionally considered a range of port specific considerations in its analysis of alternatives to the proposed development based on locations in other existing ports. (Notwithstanding that, in many cases, distance alone is decisive in ruling out a particular alternative).

This analysis of alternative locations in other existing ports looked at a total of 14 ports in two categories as follows:

- Firstly, four large ports which currently handle a volume of trade in or approaching the order of magnitude of Dublin Port
- Secondly, ten much smaller ports which might be expanded to provide alternatives to some parts of the requirements which the ABR Project is intended to cater for

Consideration of large ports as possible alternatives

Dublin Port is, by some distance, the largest port on the island of Ireland.

Appendix 6.2 summarises volumes through Dublin and 14 other ports on the island in the years 2000 to 2012.

This analysis shows only four ports have had throughputs greater than one-fifth that of Dublin Port and these are summarised below in Table 6.2.

Table 6.2: Ports with throughputs comparable to Dublin Port

Port	Tonnage by comparison to Dublin Port
Belfast	71.2%
Shannon Foynes	55.1%
Cork	49.2%
Larne	24.5%

Shannon Foynes and Cork are at considerable distances from Dublin and their volumes are very largely dependent on the needs of large port-based commodity operations (an oil refinery, a coal fired power plant and an alumina plant).

Any requirement for development in either of these locations arises from needs in each port's hinterland and cannot be considered as an alternative to the ABR Project. Both ports are Tier 1 ports in National Ports Policy and, along with Dublin, have their own roles to play in supporting national economic activity.

Belfast and Larne are close to each other but each is relatively remote from Dublin. Taken together, Belfast and Larne had a throughput equivalent to 96% that of Dublin Port.

With equivalent populations (1.8m) in Northern Ireland and in the Greater Dublin Area, Dublin and Belfast / Larne serve the needs of their respective hinterlands and, given the distances between these hinterlands, developments in Belfast or Larne cannot be considered as alternatives to the ABR Project.

Consideration of small ports as possible alternatives

In considering alternative locations in other existing ports, DPC considered ports at ten other locations on the East Coast.

These ports are all very much smaller than Dublin Port and, since 2000, the volume of cargo they have handled is considerably less than that handled in Dublin Port.

The largest is Rosslare which handled 1/8th of Dublin Port's tonnage. At the other end of the scale are Dun Laoghaire, Arklow and Wicklow all of which are less than 1/100th the size of Dublin Port in terms of the volume of cargo handled since 2000.

Most of the ten ports have severe restrictions on the size of vessel which can be handled there as summarised below in Table 6.3.

Table 6.3: Small ports analysed as possible part-alternatives

Port	**Tonnage by comparison to Dublin Port**	**Maximum vessel dimensions**[34]		
		Length	***Draught***	***Beam***
Warrenpoint	11.0%	150 m	7.0 m	n/a
Greenore	3.0%	n/a	n/a	n/a
Dundalk	1.4%	100 m	5.0 m	n/a
Drogheda	5.4%	120 m	6.5 m	n/a
Dun Laoghaire	0.5%	n/a	n/a	n/a
Wicklow	0.9%	110 m	5.6 m	n/a
Arklow	0.0%	82 m	4.3 m	n/a
New Ross	4.2%	110 m	n/a	18 m
Waterford	10.4%	240 m	9.0 m	n/a
Rosslare	12.5%	180 m	6.5 m	30 m

It is clear that most of these smaller ports are so considerably smaller than Dublin Port and at such a remote location from Dublin City and its hinterland as to obviate their consideration as offering alternatives to the ABR Project.

Summary of conclusions relating to unitised trade

There is a number of Ports that cater for the unitised trade (Ro-Ro and Lo-Lo) along the east and south coast.

Dublin Port serves a wide hinterland centred on Dublin City. 62% of all goods arriving in the Port remain within 50km and 48% of exports originate within this 50km radius[35]. The National Ports Policy recognises that port traffic has increasingly gravitated towards the larger ports in recent years to avail of capacity and economies of scale, in particular ship size.

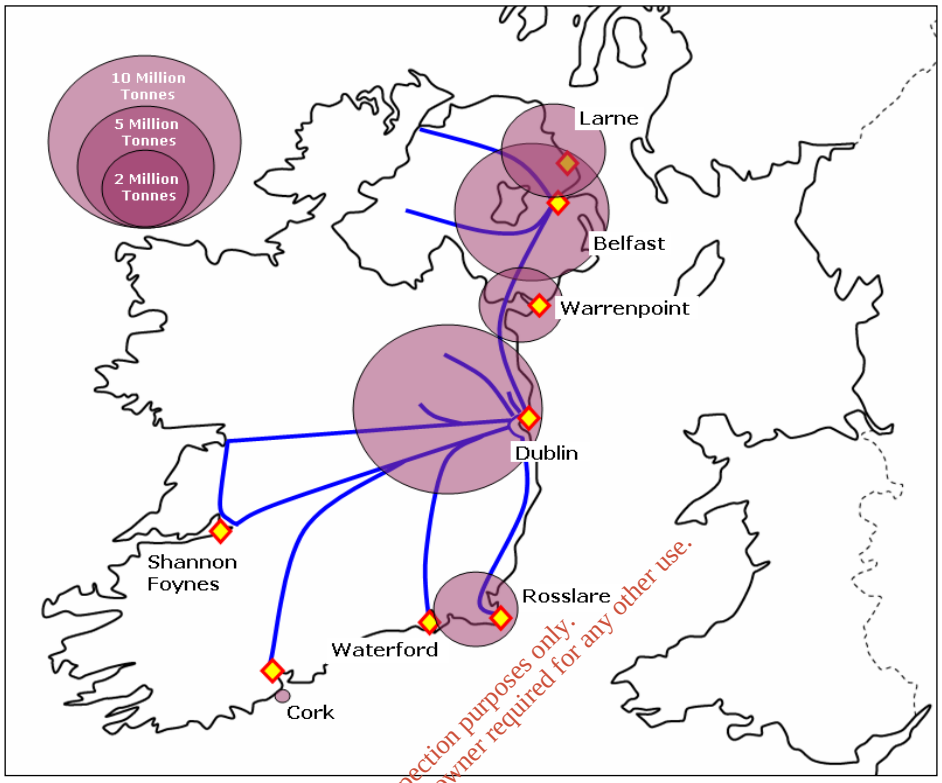
The policy document also recognises that competition between ports can be limited due to their geographical location and thus accessibility to major shipping routes and domestic market places.

[34] Lloyd's List Ports of the World

[35] Origin – Destination Study for Dublin Port Company by Atkins, October 2011

Figure 6.1[36] shows the concentration that results from these factors in ports along the east coast, particularly in Dublin Port.

Figure 6.1 – Distribution of Ro-Ro tonnage across Irish ports



Dublin Port is located at the heart of the state's largest conurbation and economically dynamic area and its proximity to the market it serves means that it must meet the demands placed on it.

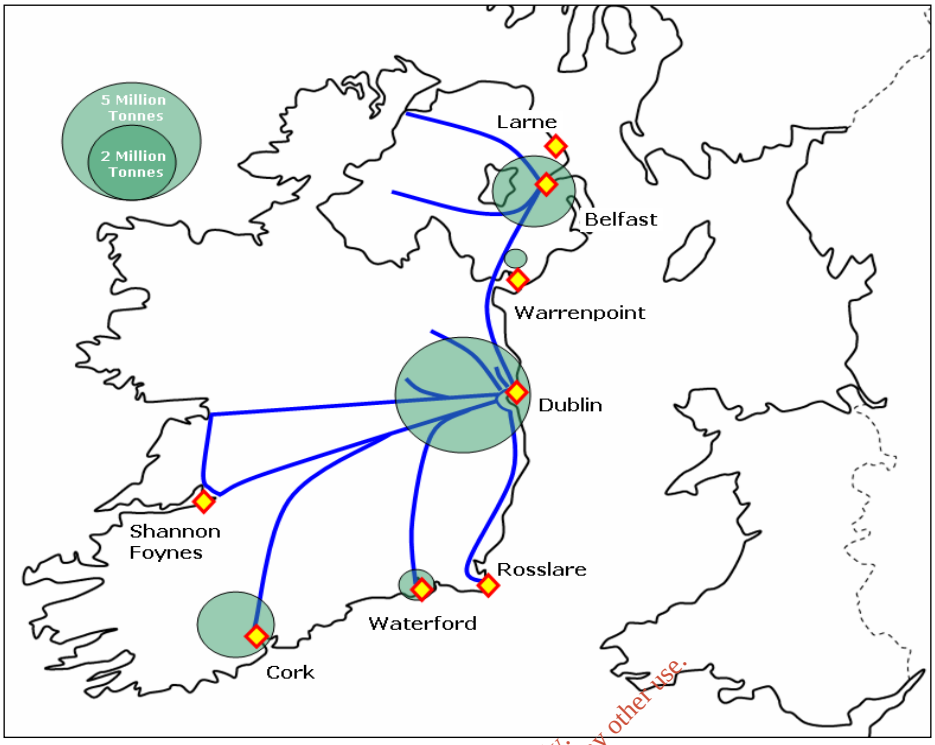
The only ports that are likely to have spare unitised capacity or increased capacity within the short to medium-term are Belfast, Waterford, Greenore and possibly Cork and these are all too distant from the Dublin Market to be viable alternatives.

The concentration seen above in the case of Ro-Ro is even more pronounced in the case of Lo-Lo as shown in Figure 6.2[37].

[36] Competition in the Irish Ports Sector, November 2013

[37] Ibid

Figure 6.2 – Distribution of Lo-Lo tonnage across Irish ports



The use of existing unitised freight capacity or the development of any additional such capacity in any of the eight ports shown in Figure 6.1 and Figure 6.2 cannot be considered as viable alternatives to any of the capacity proposed in the ABR Project for a number of reasons:

- The negative impact on national competitiveness because of increased land transport costs
- The increase in avoidable traffic movements with a rise in fuel consumption and environmental emissions.
- Inefficient use of the capacity of the national road network.

In both economic and environmental terms, therefore, there are no real alternatives to the improvements planned for Dublin Port in the case of the unitised modes.

Summary of conclusions relating to the bulk trades

Nearly all ports, whether large or small have some volume of bulk trade.

This varies from as much as 8.9m tonnes in Shannon Foynes (in 2012) to as little as 3,000 tonnes in Kilrush.

Most of the ports on the east coast handle bulk commodities ranging from as little as 62,000 tonnes in Dundalk to 1.8m tonnes in Dublin and as much as 4.7m tonnes in Belfast.

In all cases, the commodities and volumes handled are based on the needs in the immediate hinterland subject to the nearest port having sufficient capacity to handle ships of the required size.

Alternatives to the provision of additional bulk capacity which the ABR Project will provide in Dublin, therefore, depend on a combination of location and infrastructure.

Given the very localised hinterlands which ports have for low value bulk commodities, there are no viable alternatives along the east coast of Ireland for meeting the requirements of the bulk trades as envisaged in Dublin Port within the ABR Project.

Specific considerations relating to cruise lines

A critical success factor for the cruise sector is the availability of a number of locations within reasonable proximity to each other (in the order of eight to ten hours sailing time) to enable the lines design itineraries which are attractive for their customers.

Cruise ship capacity or developments in ports such as Belfast, Waterford and Cork are, therefore, complementary and supportive of the development in Dublin.

For the most part, therefore, the development of cruise facilities in other ports cannot be considered as alternatives to the provision of additional capacity in Dublin Port to handle larger cruise ships.

The proposed development of a dedicated cruise terminal in Dun Laoghaire is, however, an exception to this given the proximity to Dublin. This particular possible alternative is, therefore, considered in some detail in Section G below.

G. The proposed cruise development in Dun Laoghaire Harbour

The possibility that a dedicated cruise facility might be built in Dun Laoghaire featured in Dun Laoghaire Harbour's masterplan published in October 2011.

Given the proximity of Dun Laoghaire to Dublin Port, the possibility arises, therefore, that the putative Dun Laoghaire facility could be an alternative for part of the proposed development in Dublin Port.

Since its masterplan was published, we understand that Dun Laoghaire Harbour Company (DLHC) may have had pre-application consultations with An Bord Pleanála regarding the classification of its proposed development as Strategic Infrastructure.

Beyond this, DLHC advertised for consultants in September 2013 to bring the scheme forward for a planning application

DPC and DLHC met in 2011 and 2012 and exchanged information regarding each company's cruise business and plans.

DPC's conclusion from these exchanges and from the continued development of the ABR Project concept is that the scheme proposed in Dublin Port where multi-purpose berths will be built (which can meet the requirements of cruise ships) is not directly comparable with a possible dedicated cruise facility in Dun Laoghaire Harbour.

The Dun Laoghaire Harbour proposal is not, therefore, an alternative to the Dublin Port proposal. If built, however, it would have the effect of creating competition between the two ports for cruise business.

Notwithstanding this, it is possible that the Board may be presented with the Dun Laoghaire proposal as an alternative. DPC has, therefore, considered the two developments below.

The position of the cruise business within DPC's portfolio of activities

Dublin Port has developed its cruise business over more than a decade and in 2013 achieved a record of 100 calls. Outside of Dublin Port, the other major ports which handled cruise ships during 2013 were Belfast with 59, Cork with 57 and Waterford with 19.

In addition to these four major ports, other small ports attracted cruise ships in small numbers. In Dun Laoghaire, four ships berthed in the harbour and a further four anchored in Dublin Bay and transported passengers into the harbour by ship's tender[38].

The cruise business is an important part of the existing portfolio of business which gives DPC a diversified and stable revenue base. The importance of a diversity of revenue sources has been highlighted in many ports in recent years where some smaller ports have become heavily loss making as their trades declined or moved to the bigger ports[39].

DPC is committed to maintaining as wide a portfolio of activities as possible and the cruise business is an important part of this portfolio regardless of whether the proposed dedicated cruise facility is built in Dun Laoghaire.

If the Dun Laoghaire facility is built, DPC will compete to retain its cruise business.

Re-integration of Dublin Port with Dublin City

One of the core themes of DPC's Masterplan is to re-integrate the Port with the City. This objective is motivated by the recognition that public acceptance of the Port and its activities is an essential prerequisite for the necessary continued growth of Dublin Port in the years ahead.

---

[38] In the case of one of these ships, its licence to tender (from the Marine Survey Office of the Department of Transport, Tourism and Sport) was suspended when one of its tenders made for Dublin Port and entered the busy shipping channel with upwards of 80 passengers on board.

[39] For example, in 2012 five state-owned port companies lost money: Galway (€0.1m); Wicklow (€0.1m); New Ross (€0.2m); Dun Laoghaire (€1.5m); and Waterford (€1.6m).

The issue as to whether cruise ships attracted to Dublin as a destination should berth at multi-purpose facilities in Dublin Port or at a dedicated cruise facility in Dun Laoghaire therefore has a wider context.

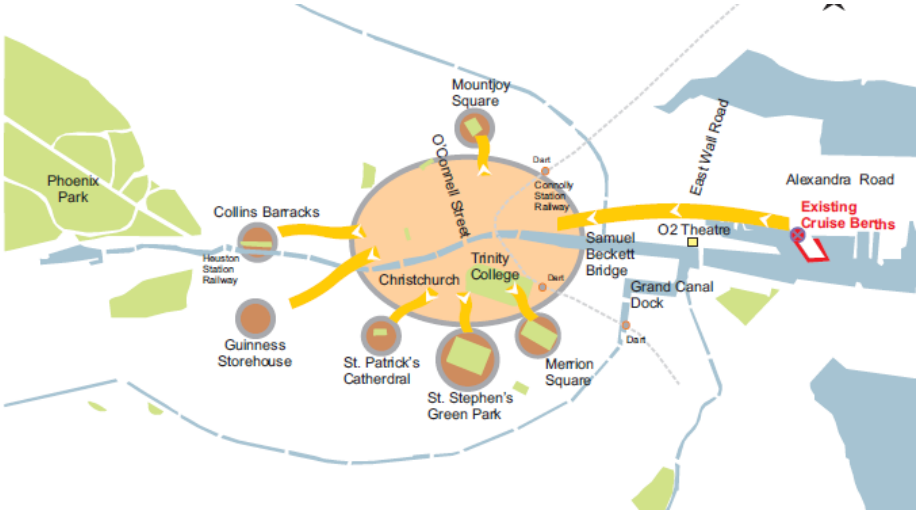
The cruise business can only contribute to the objective in DPC's Masterplan of reintegrating the Port with the City by berthing in Dublin Port at locations close to the City. The ABR Project envisages the provision of berths immediately to the east of East Link bridge.

The objective of providing berthage for cruise ships at this location is also shared with other important stakeholders (notably Dublin City Council) through the Cruise Traffic and Urban Regeneration Local Action Plan published in July 2011. This plan was produced as part of an EU funded initiative across 11 member states (see Figure 6.3).

Figure 6.3: The CTUR Local Action Plan

The CTUR plan recognised the physical disconnect between the berths currently used for cruise ships and the city destinations cruise tourists might gravitate towards as highlighted in Figure 6.4 below.

Figure 6.4: The port / city disconnect highlighted in the CTUR Local Action Plan



The CTUR set out its vision as follows:

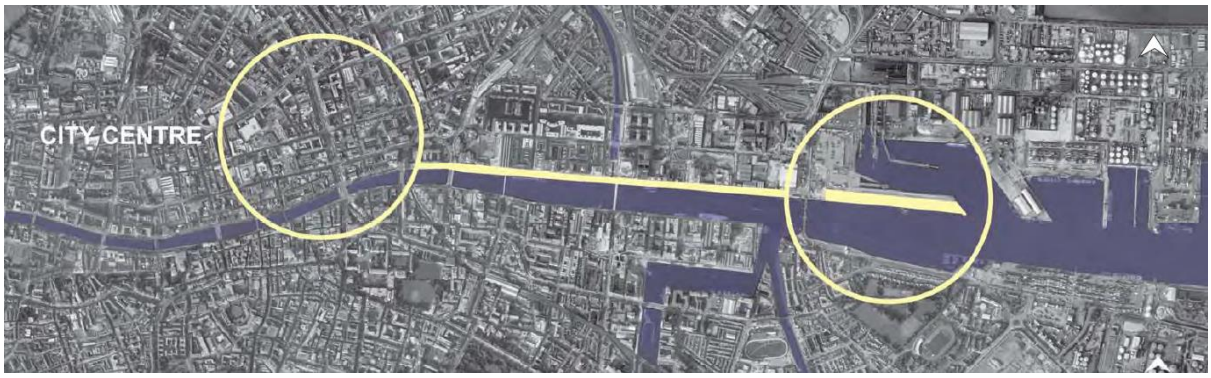
> *The overall goal is to develop a strategy for the development of Cruise traffic and urban regeneration of city port heritage as a key for sustainable economic, social and urban development*

Beyond this, the plan identified objectives to:

- Transform, regenerate and adapt the physical and environmental components of the Port area in order to improve connectivity between the port and the city centre
- Maximise the potential of cruise traffic and port heritage as a tool to achieve social and economic regeneration
- Plan and manage the cruise development within a global city project

The accommodation of Dublin Port's cruise business at the new proposed berths at North Wall Quay Extension envisaged in the ABR Project exactly mirrors the vision set out in the CTUR Local Action Plan as reproduced in Figure 6.5 below.

Figure 6.5: The port / city cruise connection proposed in the CTUR Local Action Plan



During 2013, DPC berthed 30 (smaller) of 100 cruise ships at North Wall Quay Extension.

Finally, the redevelopment of North Wall Quay Extension as the main area for berthing cruise ships will coincide with future development of the docklands area along North Wall Quay within the context of the Docklands SDZ scheme.

In the context of the above, the proposed dedicated cruise facilities in Dun Laoghaire cannot be considered as an alternative to the facilities proposed in Dublin.

Operational considerations

One third of all cruise ship movements in Dublin Port over the past four years has required the assistance of tugs. Notwithstanding these cruise ships' enormous manoeuvring power, the huge scale of many cruise ships make them vulnerable to the effects of strong winds and currents.

DPC believes that the strong tidal currents across the entrance of Dun Laoghaire Harbour and the close proximity of the proposed cruise facilities there to this entrance combine to make it likely that a considerable number of cruise ship movements might require tug assistance.

The only available tugs in Dublin Bay are those operating in Dublin Port. In the event of some combination of winds and tidal conditions generating a requirement for tug assistance in Dun Laoghaire, it is likely at the very same time these conditions would generate a requirement for tugs in Dublin Port. In all probability, therefore, tugs may not be available in Dun Laoghaire as and when required.

Unless such a fundamental requirement can be addressed in the proposed Dun Laoghaire scheme, it may not be operationally viable and, by extension, cannot be considered as an alternative to the facilities proposed in the ABR Project.

The ABR Project is an alternative to a possible DLHC scheme

DPC does not believe that the proposed dedicated cruise facility in Dun Laoghaire can be considered as an alternative to the facilities proposed in Dublin Port.

However, the opposite is not the case.

The multi-purpose facilities proposed in Dublin Port can cater for all of the cruise business which DPC understands the DLHC business case envisages[40].

Arguably, therefore, unless the Dun Laoghaire facility can be built with zero environmental externalities, the Dublin Port facility is a more sustainable alternative to a possible Dun Laoghaire facility.

---

[40] Business Case for the Construction and Operation of a Cruise Facility prepared for Dun Laoghaire Harbour Company in September 2011 by DKM Economic Consultants / Strategic Transport Solutions International / ARUP.

H. Other locations for new ports

There have been three suggestions for the development of new ports on the east coast of Ireland over the last 30 to 40 years. Each of these suggestions focussed on the needs for cargo handling capacity and none sought to accommodate cruise ships.

Bremore

The proposal to develop a new port at Bremore comprised three phases of development.

Precise details of the proposal are not available in the public domain particularly with regard to location, layout and size. However, it was stated in publicity issued by Drogheda Port Company that the project would be designed to cater for up to 10 million tonnes of freight, including 350,000 TEU Lo-Lo units, 409,000 Ro-Ro units and 1.0m tonnes of general and bulk cargoes.

The first phase would provide circa 500m of linear quay for container and general cargo handling, two Ro-Ro and one high speed berths for road freight, car and foot passenger traffic. The depth alongside was to be in the order of 10.5m below CD with a potential for a further deepening to 12m.

DPC does not believe that it represents a realistic alternative.

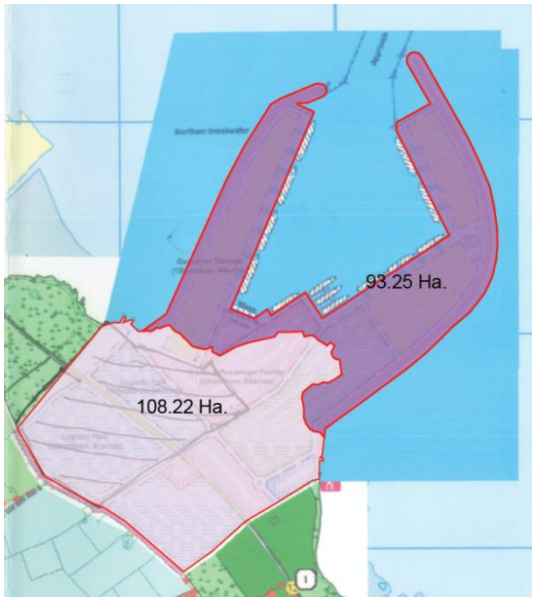
Its scale would suggest a very long lead-in time and there is negligible prospect of it being funded in present economic circumstances. It also faces difficulties in relation to large-scale infrastructure provision, environmental and archaeological issues.

Analysis by DPC (overlaying the only layout we are aware of for the proposed development at Bremore on Ordnance Survey maps) suggests that the project would have required more than 90 hectares of infill as shown in Figure 6.6 below.

An application was made to An Bord Pleanála in 2007 for the proposed development of the Bremore facility to be designated as Strategic Infrastructure Development (PL06F.PC0039). A decision as to whether it constitutes Strategic Infrastructure has not been made.

This application was submitted by Bremore Ireland Port Ltd which is made up of Castlemarket Holdings (which is currently listed to be struck off in the Companies Registration Office) in conjunction with Drogheda Port Company (which National Ports Policy has designated as a Port of Regional Significance).

Figure 6.6: Possible Bremore Port land areas



The Bremore proposal does not feature in National Ports Policy and the policy addresses (Page 25) the development of new facilities in the Greater Dublin Area as follows:

> *In relation to the TEN-T core network, it is proposed that the Greater Dublin Area (GDA) Ports Cluster be included as a core port. This port cluster concept encompasses the existing ports within the GDA, and any future port facilities that might be developed up to 2050. This is consistent with the current Regional Planning Guidelines for the GDA 2010–2022, which support examination of the expansion of Dublin Port and/or a new port facility on the east coast of the GDA.*
>
> *However, National Ports Policy categorises only Dublin Port Company as a Port of National Significance (Tier 1) within the Greater Dublin Area.*

Loughshinny

The construction of a new port at Loughshinny was mooted in a report by ESB International in the 1980's.

Nothing further of significance has been heard of the project and it is not included in any adopted national regional or local plans or policies

It shares many of the site characteristics of the Bremore suggestion.

Mornington

Also in the 1980's, Drogheda Port proposed to expand by building new facilities at Mornington.

This project never developed and the port instead completed a smaller expansion at Tom Roe's Point in 2006.

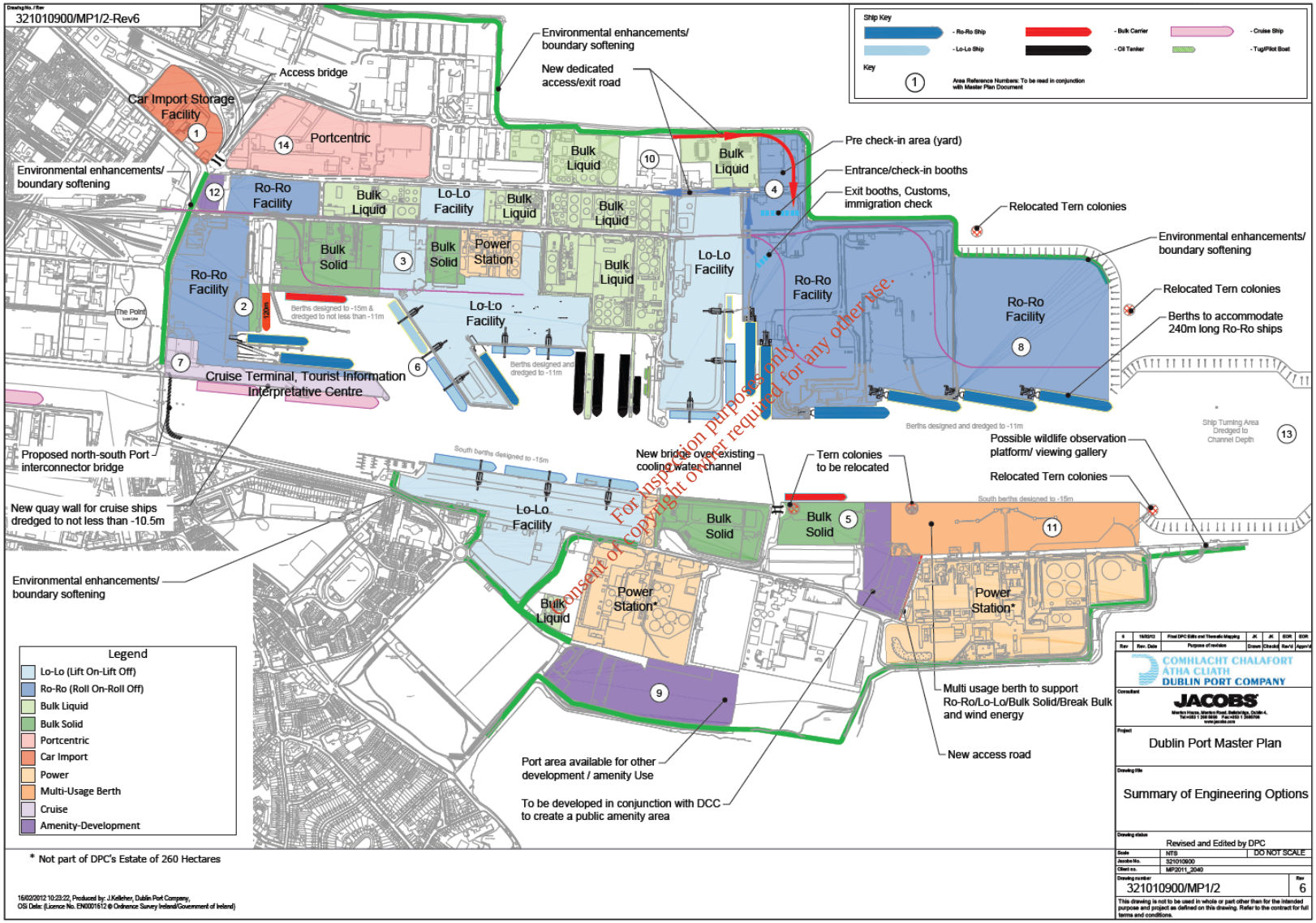
Conclusion

Against the above background, DPC does not believe that there are any alternatives to the ABR Project based on other locations for new ports.

I. Overall conclusions

In designing the ABR Project, DPC considered a range of alternatives both within Dublin Port and elsewhere and concluded that the ABR Project is the best option for development consistent with the objectives of the Masterplan 2012 to 2040, with National Ports Policy and with EU Transport Policy.

Appendix 6.1 – Masterplan 2012 to 2040, summary of engineering options



Appendix 6.2 - Summary of throughput of ports on the island of Ireland, 2000 to 2012 ('000 net tonnes)

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	% of Dublin *(2000 to 2012)*
1	Belfast	12,484	13,402	12,825	13,201	13,559	13,500	13,514	13,416	13,040	12,050	12,827	13,561	15,186	71.2%
2	Larne	4,508	3,520	4,295	4,319	4,984	5,496	5,489	5,464	5,166	4,297	4,614	4,395	2,913	24.5%
3	Warrenpoint	1,676	1,480	1,826	1,880	1,967	2,436	2,307	1,999	2,119	1,841	2,327	2,425	2,429	11.0%
	NI Total	***21,434***	***21,167***	***21,363***	***21,973***	***23,393***	***24,055***	***24,485***	***23,868***	***23,497***	***20,786***	***22,911***	***23,252***	***23,556***	
4	Greenore	444	310	509	713	664	649	869	790	700	390	503	362	373	3.0%
5	Dundalk	285	304	291	352	350	337	436	371	217	222	140	107	67	1.4%
6	Drogheda	1,015	1,252	1,369	1,255	1,268	1,402	1,279	1,035	664	512	499	489	959	5.4%
7	**Dublin**	**15,892**	**15,782**	**15,557**	**16,682**	**17,930**	**19,227**	**20,795**	**21,801**	**21,127**	**18,606**	**19,548**	**19,467**	**19,898**	**100.0%**
8	Dun Laoghaire	225	184	146	197	160	156	82	61	49	14	2	12	1	0.5%
9	Wicklow	151	171	182	212	235	282	297	221	85	73	89	99	74	0.9%
10	Arklow	88	85	86	4										
11	New Ross	1,121	1,013	979	1,129	1,102	966	831	729	694	515	444	357	268	4.2%
12	Waterford	1,943	1,958	1,910	2,332	2,342	2,257	2,376	2,253	2,082	1,631	1,451	1,383	1,174	10.4%
13	Rosslare	1,913	1,990	1,926	1,956	2,174	3,118	2,744	2,926	2,722	2,328	2,502	2,192	1,864	12.5%
14	Cork	9,732	9,446	9,042	9,176	8,923	9,919	9,709	10,098	9,633	7,968	8,466	8,434	8,708	49.2%
15	Shannon Foynes	10,282	10,708	10,418	10,102	10,619	11,355	11,393	11,072	10,819	7,577	9,134	9,899	10,094	55.1%
	RoI totals	***45,273***	***45,795***	***44,919***	***46,165***	***47,720***	***52,146***	***53,318***	***54,139***	***51,081***	***41,836***	***45,071***	***45,078***	***47,649***	
	Ireland total	**66,707**	**66,962**	**66,282**	**68,138**	**71,113**	**76,201**	**77,803**	**78,007**	**74,578**	**62,622**	**67,982**	**68,330**	**71,205**	