

## 2.0 NEED FOR THE PROPOSED ALTERATIONS AND OUTLINE OF ALTERNATIVES CONSIDERED

### 2.1 The Need for the Alterations

Port of Cork is a Tier 1 Port of National Significance. The National Port's Policy statement, (March 2013) places an onus on Tier 1 Ports to deliver Ireland's port capacity and services to contribute to overall national development goals. The Port of Cork's Strategic Development Plan Review, (2010), outlined the company's intention to relocate commercial trade to the lower harbour at Ringaskiddy. Government endorses the core principles underpinning the company's plan and the continued commercial development of the Port of Cork Company is a key strategic objective of the National Port's Policy.

Port companies are required to fund all their infrastructure and operational requirements from their own resources. Further Port of Cork must cater for future economic growth and the changes in shipping trends towards larger vessels. The Port must remain competitive in order to sustain the regional and national economy.

The EIS for the permitted development highlighted that the provision of competitive port facilities is required for the economic vitality of the country and the South West Region. Government policy is to ensure that this essential infrastructure and port services are provided in time to meet changing market demands.

A strategic cost-benefit appraisal carried out by Indecon Economic Consultants indicated that the proposed Ringaskiddy Port Redevelopment would be likely to deliver a net economic return to the Irish economy, with a Benefit-Cost Ratio of 2.31 to 1 in favour of proceeding with the project.

The original development area was chosen to meet the following operational requirements for container Lift on-Lift off, (LoLo), Roll on-Roll off, (RoRo) and project cargo trade:

- The provision of multipurpose and LoLo berths (Berths 1 and 2 respectively);
- Flexible container stacking areas;
- Gate operations which facilitate mobility management;
- Flexible quay working areas;
- Laydown area for project cargo, (i.e. wind turbine elements, heavy lift and out-of-gauge loads);
- RoRo vehicle parking including accompanied, (i.e. with driver) truck and trailer, and unaccompanied, (parked up for scheduled collection), trailer traffic;
- Maintenance and administration areas to support the various operational requirements

The EIS for the permitted development acknowledged (para 2.2.6.1) that the mix of LoLo and RoRo facilities proposed by Port of Cork would require a degree of flexibility as the final port operator was not known at that stage. It remained possible that the container terminal LoLo would be operated on a landlord model whereby the port company owns and manages the port facilities and infrastructure and leases them to private port operators, who would provide their own superstructure and equipment. The RoRo would typically be operated by the Port.

The EIS for the permitted development indicated that other port management models would also be considered whereby the superstructure and handling equipment would be provided by the port company and would be implemented in a phased manner responding to specific market drivers and the variability in global shipping and trade trends.

Three options were identified for the method of container handling within the terminal:

- Rail mounted gantry cranes, (RMGs), utilising sprinter straddle carrier or trucks and trailers
- Rubber tyred gantry cranes, (RTGs), utilising trucks and trailers
- Straddle carriers, (SCs)

The options were reviewed by the Port and the EIS assumed that Rubber Tyred Gantry (RTGs) utilising truck and trailers would be the method of container handling within the terminal.

Following the grant of permission, Port of Cork considered alterations to take account of the conditions imposed by the Board which had implications for the viability and sustainability of the construction and operational phases of the permitted development, including:

- (a) Condition 4 which deferred the introduction of the proposed RoRo services until the upgrades of the N28 and the Dunkettle Interchange are completed;
- (b) Condition 5 which required a more restrictive mobility management plan than originally proposed;
- (c) Condition 8 which clarified the noise limits which would be imposed at various times of the day.

The review also took account of the revised programme for the delivery of the upgrade of the national road network and the decision made by the Port of Cork Company to fund and directly provide the port superstructure and equipment for container handling.

The review also brought the phasing of capital and operational expenditure to the forefront of the project review, including:

- (a) The optimisation of the design of the multi-purpose berth for container traffic to take account of the fact that Phase 3, the proposed linkspan would not be operational until the completion of the planned upgrades of the national route network;
- (b) The need for a more flexible method of container handling to ensure efficient implementation of the mobility management plan; and
- (c) The need to align capital and operational costs with the business model and funding capabilities

The following conclusions were reached through the review:

- A single optimised container berth would require less upfront capital investment and have the capacity to accommodate two container vessels
- Straddle carriers would require less upfront capital than RTGs;
- The number of straddle carriers could be more easily adjusted to the growth in traffic as they have lower capital cost per unit when compared to RTGs;
- Straddle carriers could comply with the noise restrictions imposed by the Board;
- The use of straddle carriers would better support the requirements of the RMMP and ensure the most efficient use of the road capacity allowed under the mobility management plan;
- The re-use of the existing straddle carriers in the Tivoli container terminal would result in a significant reduction in the initial capital expenditure;
- The use of straddle carriers could reduce operational expenditure by more than €1.0 m per annum as they would require fewer operator resources and less ancillary equipment.

## 2.2 The Alternatives Considered

Before reaching the conclusions as to the proposed alterations, a number of options were considered.

In regard to the optimisation of the multi-purpose berth, the Port assessed the following alternatives in regard to the phasing of the construction of the linkspan and the concrete outstand which connects the linkspan to the main structure of the berth:

- (a) To provide the outstand but defer provision of the linkspan until the N28 and Dunkettle Interchange upgrades are completed
- (b) To defer both the outstand and the linkspan until the N28 and Dunkettle Interchange upgrades are completed;
- (c) To defer both the outstand and linkspan and make more efficient use of the full length of the berth by extending the dredged pocket and relocating the existing dolphins serving the passenger terminal.

It was concluded that option (c) was the most cost effective as it would provide 361.1m of usable berth in the initial phase of the project as compared with 314m if the linkspan and outstand were provided at the outset.

A 361.1m berth would allow two “feeder size” container ships and two ship to shore cranes to be accommodated at Berth 1 pending the completion of the N28. This will support throughput of 240,000 Twenty-foot Equivalent Units, (TEU) at the container terminal before further investment was required in the construction of Berth 2.

A further assessment of alternative container handling systems was undertaken. Three alternatives were considered:

- (a) the permitted mix of rubber tyre gantries (RTGs) with trucks and trailers;
- (b) the option of using rail mounted gantries (RMGs) with sprinter straddle carriers trucks and trailers or trucks and trailers
- (c) the use of straddle carriers in the initial phase with two rail mounted gantries (RMGs) being added when trade demands required and funding was available.

The use of RTGs and RMGs were shown to be the least flexible method for container management, with the highest initial cost. RTGs and RMGs also provide the least opportunity to introduce equipment and infrastructure on a phased basis to match handling capacity to container throughput. The use of straddle carriers was shown to be more efficient and cost effective than the permitted mix of RTGs and truck / trailers.

The use of SCs would permit the Port to;

- (a) transition across from their current facilities at Tivoli and then increase equipment in line with trade demand, thereby significantly reducing the threshold cost at the start of the operation of the terminal;
- (b) support faster turnaround times for HGVs using the terminal; and
- (c) provide a more flexible system to support any variations of traffic flows that may be required within the Ringaskiddy Mobility Management Plan (RMMP).

The use of straddle carriers would result in a reduction of the height of the container storage stacks from 5 containers to 3 containers, thereby requiring a larger footprint. However, there would still be sufficient area within the container storage yard to allow containers to be stacked 3-high until the throughput reaches 280,000 TEU. Thereafter two RMGs would be introduced which would allow 5-high stacks at the southern end of the yard. It is envisaged that the permitted general cargo area would not be required for this purpose until the upgrades of the N28 and the Dunkettle Interchange are completed.

The Ringaskiddy Mobility Management Plan will require all freight vehicles using the permitted development at Ringaskiddy to be included in the vehicle booking system. Since the permission was granted by the Board, the Port has developed an automated gate process in the current Tivoli container terminal. The automated gate is necessary to support the vehicle booking system that will be the nucleus of the RMMP. The Port’s experience at Tivoli has shown that an effective gate process requires additional space to support internal access roads, a large entrance and interchange area, vehicle queuing area, and problem resolution area.

The operating provision of the automated gate process requires the relocation of the maintenance workshop building, office and car parking outside the container yard and the revised circulation layout will require repositioning of the southern perimeter fence a short distance to the south of the previous development boundary. These alterations would increase the permitted development area by 7%.

The use of straddle carriers would also require the redesign and relocation of the permitted maintenance workshop building. The Port assessed alternative locations for the maintenance workshop building, office and car park area to the east and west of the container yard. Both were ruled out. The location to the east is subject to a long term leasing arrangement and would involve straddle carriers sharing road space with port traffic. The location to the west would require substantial

reconfiguration of the existing marshalling yards for the passenger ferry terminal. The Port consider the relocation of the maintenance workshop building, office and car park area as currently proposed to be the most operationally efficient and cost-effective location.

Condition 8 of the An Bord Pleanála decision to grant permission requires that noise levels emanating from the proposed development, when measured at noise sensitive locations shall not exceed specified levels. This compliance is detailed in Chapter 9 of this EIS.

In summary, the need for the proposed alterations arises from a review of the viability of the project in the context of the conditions imposed by the Board, the current time frame for the upgrade of the national road network and the requirement for the Port of Cork to fund the superstructure and container handling equipment from its own resources. The Port assessed a number of alternative layouts and operating systems, including gate operation, and concluded that there would be significant savings in capital and operating expenditure if the design of the permitted berth was optimised for container traffic and if straddle carriers rather than RTGs utilising trucks and trailers were used for container handling within the terminal. These in turn required an adjustment of the southern boundary of the container yard and a relocation and redesign of the maintenance workshop building, office and car park area. The current proposal is considered to be the most sustainable and cost effective way of delivering the strategic planning and economic objectives for this site.