



## **Dublin Port Masterplan**

### **Internal Report #4**

#### **Transport Policy, Rail Freight, Portcentric Logistics, and Dry Ports**

**27<sup>th</sup> September 2011**

## Introduction

There have been three major statements of transport policy in recent times which have the potential to significantly influence the development of transport supply chains over the period of the Masterplan. These are:

- Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system<sup>1</sup>
- Smarter Travel - A Sustainable Transport Future<sup>2</sup>
- Greater Dublin Area Draft Transport Strategy 2011-2030 vision<sup>3</sup>

These policy documents set the wider context within which Dublin Port, as an important part of national and international supply chains, must be planned and operated. This context includes the crucial issues of sustainability and climate change.

### *EU White Paper*

At the core of the EU White Paper is the challenge of achieving a reduction of at least 60% of GHGs by 2050 with respect to 1990 from the transport sector. Beyond this central target, the White Paper identifies specific goals to achieve this, including:

- Reduce EU CO<sub>2</sub> emissions from maritime bunker fuels by 40% (if feasible 50%) by 2050
- Shift 30% of road freight over 300 km to other modes such as rail or waterborne transport by 2030, and more than 50% by 2050, facilitated by efficient and green freight corridors.
- Ensure that all core seaports are sufficiently connected to the rail freight and, where possible, inland waterway system by 2050

The White Paper creates challenges for Dublin Port, both direct and indirect. The direct challenges are for the port to reduce the energy consumption of Port operations and to ensure that energy is sourced from renewable sources wherever possible. Our approach to these challenges does not form part of this Masterplan. The indirect challenges are, however, central to this Masterplan and relate primarily to:

- Support for the development of bunkering facilities for low carbon fuels for ships (LNG)
- Support for the principal of introducing pricing incentives for ship charges for more environmentally friendly ships in line with developing practices elsewhere in the EU
- Enhancing links between the Port and the national rail network
- Supporting initiatives by port users to develop portcentric logistics which reduce HGV movements outside the Port

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<sup>1</sup> EU White Paper, Brussels, 28.3.2011 COM(2011) 144 final

<sup>2</sup> A New Transport Policy for Ireland 2009 for 2020, Department of Transport, February 2009

<sup>3</sup> National Transport Authority, June 2011

## *Smarter Travel - A Sustainable Transport Future*

The Government's Smarter Travel policy comprises a vision for sustainability in transport set out with five key goals:

- (i) To reduce overall travel demand,
- (ii) To maximise the efficiency of the transport network,
- (iii) To reduce reliance on fossil fuels,
- (iv) To reduce transport emissions and
- (v) To improve accessibility to transport.

The Policy contains 49 actions grouped into four overarching categories:

- Actions to reduce distance travelled by private car and encourage smarter travel, including focusing population growth in areas of employment and to encourage people to live in close proximity to places of employment and the use of pricing mechanisms or fiscal measures to encourage behavioural change,
- Actions aimed at ensuring that alternatives to the car are more widely available, mainly through a radically improved public transport service and through investment in cycling and walking,
- Actions aimed at improving the fuel efficiency of motorised transport through improved fleet structure, energy efficient driving and alternative technologies, and
- Actions aimed at strengthening institutional arrangements to deliver the targets.

In the area of freight transport, Action 10 in the policy lists the following intentions:

- Ensure that the Department of Transport deals with freight policy issues in a more integrated manner and prepares a specific strategy for the freight sector. We will set a target aimed at reducing the environmental impact of freight while at the same time improving efficiency in the movement of goods and promoting economic competitiveness
- Organise a forum to bring all interested parties together, including industrial development agencies and industry representative bodies, to explore in greater depth the issues relating to the movement of goods, including:
  - The realistic potential for rail freight
  - Priority freight routes allowing access to vehicles with greater load factors and capacity
  - Developing key logistics centres to transfer goods to more sustainable forms of transport for final delivery in urban areas
  - Scheduling of deliveries from the ports and in urban areas to avoid peak use of networks as far as possible
  - The incentives and disincentives needed to move to more fuel-efficient vehicles
  - The need to have more rigorous testing of goods vehicles to reduce emissions
  - The potential of Intelligent Transport Systems and Services to improve efficiency.

## *Greater Dublin Area Draft Transport Strategy 2011-2030*

By comparison with the broader scope of the EU White Paper, the NTA's transport strategy deals specifically with land transport. The strategy comprises an explicit hierarchy of transport users and identifies 84 measures under four headings:

- Planning for sustainable living 4
- Walking and cycling 20
- Public transport 39
- Roads, freight and demand management 21

The strategy's hierarchy of transport users is stated as follows:

**Measure OVR 1:** The Authority supports a transport user hierarchy that considers transport user needs in the following order:

1. Pedestrians (including those accessing public transport).
2. Cyclists
3. Public transport users
4. Freight, delivery and waste vehicles
5. Private vehicles users

In all cases, provision must be made for emergency vehicle access as required, and the needs of people with disabilities should be fully taken into account.

The putative increase in Dublin Port's cargo volume from 29m tonnes in 2010 to 60m tonnes by 2040 will be accompanied by a very substantial increase in land transport in the Greater Dublin Area over the period of the NTA's strategy. Whereas the major objectives of the Masterplan are to cater for the demands of freight, the hierarchy puts an onus on the Port to ensure that the needs of other transport users are adequately catered for in the Masterplan. The clear enunciation in the strategy of 84 measures provides a logical framework for the Port to plan its development in a way which caters for the needs of these other transport users while meeting the core requirement for freight transportation.

In particular, we have identified ten of the strategy's measures which have particular relevance to the Masterplan as follows:

**Measure WCY 7:** The Authority will:

- Support existing leisure walking routes and the provision of additional leisure walking routes along river and canal corridors and in the countryside together with provision of facilities for leisure walkers, including seating and picnic areas; and
- Seek improvements to walking links:
  - From surrounding areas to leisure walking routes; and
  - Between leisure routes that are in proximity to each other.

**Measure WCY 13:** The Authority will seek:

- The provision of coastal, canal and riverside cycle tracks, including:
  - Royal Canal and Grand Canal Routes;
  - Sutton to Sandycove coastal route;
  - Tolka and Dodder Routes;
- The opening to cyclists of the larger public parks throughout the Greater Dublin Area;
- The provision of a designated National Cycle Network in line with the Department of Transport National Cycle Policy framework, and provision of safe and attractive cycle links between the GDA Cycle network and the National Cycle Network; and
- The provision of a safe and attractive cycling environment in other rural and scenic areas where tourist and leisure cyclists are likely to visit.

**Measure ROAD 2:** The Authority will seek:

- (a) The protection of an Eastern Bypass route corridor for a possible future transport scheme that may be implemented after 2030; and
- (b) The provision of a new road link from Dublin Port Tunnel to the Poolbeg area, subject to feasibility, economic assessment and the extent of development in the Poolbeg area.

**Measure ROAD 3:** The Authority will seek:

- (a) The finalisation of the route corridor for an appropriately scaled Leinster Outer Orbital Route and its protection from development intrusion; and
- (b) An incremental approach to the delivery of the project, with partial development only during the Strategy period targeted at addressing deficiencies in the existing road network in terms of road safety or congestion.

**Measure ROAD 4:** The Authority will;

- (a) Prepare a programme for prioritisation of road space and traffic signal priority in favour of walking, cycling and public transport in the Greater Dublin Area, based on the road user hierarchy and need, in a planned manner that recognises the competing demands for scarce road capacity; and
- (b) Seek the identification and implementation by local authorities of appropriate measures in locations or areas identified by the above programme.

**Measure FRT 3:** The Authority will:

- Seek the introduction of arrangements to promote deliveries in Dublin city centre and, if appropriate, in other towns, between the hours of 7p.m. and 7a.m., taking into account the rights and needs of residents living in these areas;
- Promote the development and operation of Distribution and Servicing Plans for freight intensive developments, which will focus on creating efficient delivery and servicing processes that reduce the congestion impacts associated with the development;
- Seek the development of a pilot urban delivery centre in the Dublin area for the disaggregation of large loads and the consolidation of small loads for final delivery by van type vehicles in Dublin City Centre and surrounding areas; and
- Support the use of low impact delivery schemes in Dublin city centre and other town centres, for example by using smaller quieter vehicles, with lower emissions, including the use of cargo-bikes and examining the potential for certain freight deliveries by tram.

**Measure FRT 6:** The Authority will identify recommended preferred routes for freight transport for key locations such as ports and Dublin Airport, encompassing both strategic national routes and also localised routing as appropriate.

**Measure FRT 7:** The Authority will:

- Support the use of the existing rail system for the transport of appropriate materials where feasible and economically, socially and environmentally beneficial; and
- Seek the safeguarding of existing rail lines for potential use by freight, and will support the upgrading and improvement of the rail freight network, including, where appropriate, reducing conflict with passenger services, improving freight terminal capacity and enhancing links to key ports for onward distribution of containers and other goods, where feasible and economically, socially and environmentally beneficial.

**Measure TDM 3:** The Authority will:

- Seek the introduction of a road use charging scheme over a large geographic area of the region prior to 2020 in order to meet current national policy as set out in Smarter Travel;
- Advise the Minister on the format of a road use charging scheme that would meet national targets, including the structure and level of the charges, the area to which they are to be applied and the hours of operation, under the Implementation Plan arrangements;
- Undertake extensive stakeholder and public consultation in the scoping of a scheme;
- Advise on the extent to which the net revenues from a road use charging scheme can or should be assigned to, or re-invested in, public transport improvements and operations; and
- Advise on the introduction of a pilot charging scheme on an individual road corridor, or corridors, in conjunction with the provision of public transport improvements on that corridor.

## **Implications for the Masterplan**

Against the background of the specific EU policy objectives in the White Paper; the objectives and actions in Smarter Travel; and the NTA's strategy objectives, there is an onus on Dublin Port Company, in the context of operating an efficient and competitive port, to seek to:

1. Implement initiatives which support pedestrians and cyclists within and in the vicinity of the Port both for recreational and for access purposes
2. Support better public transport links within the port
3. Where achievable, to facilitate initiatives throughout the supply chain which these policies seek to implement.

The first two requirements above are addressed elsewhere in the Masterplan.

The third requirement involves:

- Supporting increased use of rail freight
- Reducing the movement of goods in HGV's by supporting the development of "portcentric logistics"

The potential in these two areas is evaluated below. In addition, we have looked at the related potential for the development of "dry port" facilities.

## Rail freight

There are realistic possibilities to move freight to / from Dublin Port in two modes<sup>4</sup> as follows:

- Containers (from either Lo-Lo or Ro-Ro)
- Bulk solids (including ores, solid biomass and animal feed)

### Containers

The movement of containers by rail recommenced in August 2009 with the commencement of a service to Ballina. This initiative was supported by the building of a new 1.6km rail spur with the Port which was opened in July 2011.

Dublin Port has supported and will continue to support the development of container rail freight services. Although road freight will remain dominant (due to the short road distances in Ireland), we believe that there is a market niche that rail can support.

In particular, we believe that there might be potential for private sector operators to develop container freight services to other destinations as follows:

Service possibilities	# trains per week	Capacity per train
Ballina	5	36 TEU
Cork	12	42 TEU
Limerick	5	36 TEU
Athenry	5	36 TEU
Sligo	5	36 TEU
Waterford	5	36 TEU
<b>Totals</b>	<b>37</b>	<b>2,808 TEU</b>

If market demand develops the full set of putative services listed above, then the volume of containers moved by rail could reach 130,000 TEU (equivalent to 1.3m tonnes) as shown below.

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<sup>4</sup> There is also potential to move petroleum products by rail. We have seen no interest by any operator in pursuing this option. However, should the demand arise to transport petroleum products by rail from the Port, we believe that it can be readily accommodated.

Total capacity per annum	146,016 TEU
Target utilisation factor	90%
Target volume	131,414 TEU
TEU / unit	1.69
Tonnes per TEU	9.85
Realistic target	1.3m tonnes

### *Bulk solids*

In the order of 400,000 tonnes of lead and zinc ore are delivered to Dublin Port by rail each year.

Beyond this, there is the possibility that new mines could be developed around the country (such as in Pallas Green and Stone Park) which could be facilitated over existing rail lines for export from Dublin Port.

There are also commodities such as animal feeds and solid biomass which could be moved from the Port by rail.

### *Overall Potential for Rail Freight*

Dublin Port Company will continue to support the movement of goods to and from the Port by rail through the provision of rail connections and sidings within the Port. We believe that there is potential for up to about two million tonnes per annum to be moved by rail. This would be equivalent to 7% of the Port's gross tonnage in 2010

### **Portcentric Logistics**

Portcentric logistics is the location of hinterland distribution facilities on port estates, or in the immediate environs of ports, as an alternative to locating a distribution centre in the middle of a country's road network, hauling goods in from the port to this site before re-distributing in smaller units to the regions.

The development of portcentric logistics facilities in Dublin Port could strongly support the NTA's roads, freight and travel demand management strategy objectives.

However, the experience of portcentric facilities in Dublin Port has been patchy over recent years.

In particular, a 10,000 m<sup>2</sup> modern warehouse facility with storage capacity for 10,000 pallets lay dormant in recent years before being brought back into use during the last year to provide:

- Bulk and racked storage
- Case and layer picking



- Order assembly
- Pick and pack order fulfilment
- Cross-docking (pallets and/or roll cages)
- Added value co-packing and re-work

Beyond this facility the only other significant high quality facility is a 13,000 m<sup>2</sup> temperature controlled warehouse.

In general<sup>5</sup>, portcentric logistics confer benefits on players in the supply chain other than the port. The proportion of port volume that can be handled through portcentric facilities is small. In the case of Dublin, the Port handles about 1.1m unit loads per annum plus about 6.0m tonnes of bulks (4.0m tonnes of oil products and 2.0m tonnes of dry bulks).

Portcentric logistics are vital for the bulks and are in the form of oil tank farms and animal feed sheds close to the quay wall.

For the 23m tonnes which make up the 1.1m unitised loads in 2010, there would not be space in the Port to build sufficient warehousing facilities to make any significant impression on the supply chains these 1.1m units move through.

Including the two main existing facilities, there is potential to build in the region of 100,000m<sup>2</sup> of portcentric logistics facilities on the north side of the port<sup>6</sup>. Even at this level, only a small proportion of unit loads could be handled through them.

However, to the extent that this small proportion can facilitate achievement of the NTA policy objectives referred to above, then Dublin Port should make provision for the development of facilities to support portcentric logistics operations in its Masterplan.

In general, the faster goods move through the Port the better. Beyond the contribution the portcentric logistics can make to this objective, we believe that the most efficient supply chains (for unitised goods) moving through Dublin Port will be of three types:

- Full loads directly from the port to the end receiver's premises anywhere on the island.
- Part loads to RDC's / warehouses located within 15 km or so of the port and accessible via the tunnel and motorway connections

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<sup>5</sup> There are exceptions to this rule such as Teesport in north-east England which succeeded in growing its volumes substantially based on the development of major portcentric logistics facilities by major UK retailers. A second example (in the US) is Georgia Ports Authority which offered the likes of Wal-Mart, IKEA and Target a portcentric solution, with Asian import cargo for their stores in the eastern and southern US arriving via the Panama Canal (as an alternative to that same cargo arriving through west coast US ports and being railed to warehouses in the centre of the US).

<sup>6</sup> There is additional potential to build a similar amount of facilities on the southside of the port.

- For inward loads to major retailers, pick in UK RDC's and ship directly to store with no intermediate Irish RDC involvement,

## Dry Ports

Beyond rail-freight and portcentric logistics, there is a developing concept in Europe to create “dry ports”.

A dry port is an inland facility situated in the hinterland servicing an industrial / commercial region connected with one or several ports by rail, road or inland water transport. Normally a dry port would be container and multimodal oriented and would have all logistic services and facilities needed for shipping and forwarding agents.

Just as the potential for rail freight is limited in Ireland by the small size of the island (where, for example, the distance from Dublin Port to anywhere on the island is less than the EU White paper's 300 km threshold<sup>7</sup>), so also the potential for the development of dry port facilities to support Dublin Port is likely to be limited.

Over the period of the Masterplan (and certainly over its earlier years), we believe that the development of rail freight and portcentric facilities offer the best opportunities for Dublin Port to contribute to the policy objectives of the EU White Paper and of the national policies (Smarter Travel and the NTA's strategy).

In the meantime, Dublin Port will monitor dry port developments elsewhere. In particular, there is currently a three-year EU Interreg dry port study coming towards its end. The project has public and private sector partners from the ports and logistics sectors, from local authorities and from key universities. These partners come from Edinburgh, Felixstowe, Zeebrugge, Fryslan and Emmen (in the Netherlands) and Västra Götaland and Skaraborg (Sweden).

Notwithstanding the limited scope we see for dry port developments currently, road linkages to Dublin Port are excellent and rail linkages are extensive and improving. Against this background, we would keep an open view on the possibility of dry port facilities being developed in Ireland and would respond positively to any such initiatives. In the meantime, we will monitor the development of the dry port concept elsewhere in Europe.

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<sup>7</sup> To shift 30% of road freight over 300 km to other modes such as rail or waterborne transport by 2030, and more than 50% by 2050, facilitated by efficient and green freight corridors.