



NORTH WEST PORTS ECONOMIC TRENDS & LAND USE STUDY

A REPORT FOR THE NORTHWEST REGIONAL DEVELOPMENT AGENCY

FINAL REPORT

by

MDS Transmodal Limited

In association with Regeneris Consulting Limited

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This study was guided and assisted by a joint steering group comprising of representatives of the Northwest Regional Development Agency, Government Office for the North West and the North West Regional Assembly

EXECUTIVE SUMMARY

Chapter 1 Introduction

The Northwest Regional Development Agency (NWDA) commissioned MDS Transmodal (MDST) and Regeneris Consulting Ltd in March 2005 to carry out a study of the economic trends and land use requirements of ports in NW England.

The overall aim of the study was to provide the NWDA and the other key regional partners with an accurate assessment of the key economic trends affecting North West ports and how this translates into port land requirements. The study is designed to provide an evidence base for the development of future regional policy and strategy.

In 2003 the NW region's ports handled 45 million tonnes of cargo, equivalent to about 8% of total UK port traffic. The largest port by volume is Liverpool, which handles about two thirds of the region's traffic. The Manchester Ship Canal, the second largest port by volume, handled 6 million tonnes bulk cargoes in 2005 and a small volume of container traffic. Fleetwood and Heysham are essentially ferry ports for the Irish Sea market, handling both accompanied and unaccompanied freight. Heysham, Garston and Glasson Dock (Lancaster) also handle a variety of bulk cargoes for a regional hinterland. In Cumbria, Workington, Barrow and Silloth principally handle traffic for sub-regional hinterlands.

An analysis of the hinterlands of the North West ports by mode of appearance in 2003, compared to the hinterlands of the North East and Yorkshire and the Humber ports, shows that the North West unit load ports collectively served a GB national hinterland to a greater extent than unit load ports in the other Northern English regions of the North East and Yorkshire and the Humber.

There is an important distinction between the role played by ports in the North West (and principally Liverpool) and those in the North East and on the Humber. East coast ports play a very important 'super-regional' role in providing access for general cargo for all of Northern England, and parts of the Midlands, to the Northern Continent, Scandinavia and the Baltic. These ports also serve a number of heavy industry plants (including three refineries and two integrated steel plants) that play a major role in Northern England's economy. By contrast, ports in the North West tend to play a national role for particular forelands (North America and Ireland), rather than a mainly 'super regional' role. North West ports serve only one refinery and no steel works.

Chapter 2 Market Environment

The ports industry plays two key roles for the regional economy. On the one hand, the regional ports business constitutes a means of wealth creation in its own right, creating revenue and employment from handling goods from both the North West region and elsewhere. On the other hand, the national ports industry provides a gateway for goods entering and leaving the region. In this context, regional ports are in competition with ports elsewhere, while the region itself is in some respects dependent upon the inland infrastructure used to reach each port, within and beyond the region.

In 2003 GB ports handled some 539 million tonnes of cargo and total tonnage has increased by an average of 1% per annum since 1990. However, most of the growth has been due to unitised cargo, which has grown by 5.2% per annum, while bulk traffics have grown by only 0.5% per annum.

North West ports handled 45 million tonnes of cargo in 2003, which represents 8.2% of total GB port traffic. However, of the total traffic distributed inland from GB ports by road or rail, North West ports handled 21 out of 209 million tonnes (10.0%). The remaining tonnages (mainly petroleum) were processed within the port area.

Of the 28.6 million tonnes of international freight generated in the North West region in 2003 (excluding goods processed within port areas), only about 30% was handled through NW ports. This is because, while NW ports handle a high proportion of the region's international bulk freight, South East and East Coast ferry services carry the vast majority of the region's Continental imports and exports and its deep sea imports and exports are handled at South East deep sea container ports, as well as Liverpool.

With rapid growth in deep sea containerised freight due to import substitution with goods manufactured in the Far East and, in particular, China and increasingly tight deep sea container port capacity in South East England there may be an opportunity to develop post-panamax container berths at the Port of Liverpool.

The other source of rapid traffic growth through North West ports has been Irish Sea RoRo traffic, with most growth focussed on Liverpool and Heysham.

Chapter 3: Policy Environment

Both European and UK transport policy strongly supports the development of sustainable distribution, with European policy in particular seeking to foster the development of short sea shipping as an alternative to long distance road haulage. In the longer term (i.e. by 2025) there is likely to be some form of pan-European system of charging for all types of transport that takes into account the full cost of each mode including external costs and this is likely to

lead to some modal switch from long distance road haulage to greater use of rail, short sea and coastal shipping.

In the medium to long term, this policy trend may help to sustain the commercial viability of smaller ports as shippers seek to take cargoes closer to inland origins and destinations of cargo, to counter the loss of traffic following the abolition of the National Dock Labour Scheme and as average ship sizes have increased.

At the same time, policy trends should lead to the greater development of rail services and coastal feeder services to and from Liverpool, as the major North West port with sufficient volumes to provide the necessary critical mass of traffic required for rail and waterborne transport. Strong policy support at a regional level would assist Liverpool to benefit from these trends. European environmental policies are likely to continue to provide very strong protection to sites of European environmental significance and this could have a major influence over the development of deep sea container port capacity in GB.

In the short term, national ports policy is in a state of flux, but we believe it is likely to be more strategic in its approach in the future with published demand forecasts and some degree of policy direction on where further port development would be justified to cater for expected traffic growth in the deep sea container and RoRo sectors. It may therefore follow the approach taken by the Government towards the development of airports.

In the medium term, there is likely to be greater clarity from the European Commission as to when and how the public sector can invest in port infrastructure and the UK is likely to adopt a consistent policy in line with the rest of Europe. This may allow public sector investment in port infrastructure under certain circumstances such as to secure significant economic or environmental benefits where there is no significant distortion of the market.

Existing regional policies recognise the importance, in particular, of the Port of Liverpool to the region's economy and support the development of sustainable distribution. 'The Northern Way Growth Strategy' regards ports in the North West, the North East and Yorkshire and the Humber as having considerable potential to act as growth poles and to reduce the volume of traffic passing through the more congested South of England. It proposes the implementation of a Northern Ports Access Plan to improve rail and road access to the regions' principal ports. The North West Regional Freight Strategy supports a number of schemes that would enhance access by road and rail to the region's largest ports.

Local Transport Plans strongly support the development of a policy of sustainable distribution and a continuing role for all the region's ports within this overall policy. Ports are seen as potential growth poles and as sites for the development of distribution activity. Enhanced road and, in particular, rail access to the regions' ports is often supported.

Chapter 4: Analysis of Port Supply & Demand

The MDS Transmodal GB Port Supply and Demand Model has been used to model scenarios of the port supply-demand balance up to 2025. The analysis indicates the availability of about 35,000 quay metres of berths in the North West region in 2005, with 89% of berths being for bulk and multipurpose general cargo berths. 4% of quay length relates to dedicated LoLo berths and RoRo berths represent some 7% of quay length and occupy about 33 hectares of land.

The model scenarios suggest that, given forecast trade growth up to 2025 (based on analysis of historic trends on a commodity-by-commodity basis), the North West is likely to require additional port capacity in the unit load trades over the next 20 years. This is most likely to be required at Liverpool (LoLo and RoRo) and at Heysham (RoRo).

LoLo Scenario 1 assumes that containerised trade follows an exponential growth pattern up to 2025, leading to a 175% growth during this period. It also assumes that only the Felixstowe South scheme would receive planning permission, so little additional capacity would have been provided in this sector. However, the scenario also assumes that traffic can only switch to GB ports within the same regions or adjacent regions in order to secure a berth with sufficient depth of water and cargo handling capacity. Under this high growth scenario, the region would have a shortfall of capacity sufficient to accommodate some 6.1 million tonnes of LoLo traffic by 2025.

LoLo Scenario 1*Assumptions:*

- Exponential trade growth 2005-2025
- Limited new port capacity in South East England (only Felixstowe South)
- Redistribution of traffic allowed between adjacent regions where ports 'fill up' (by up to 13 ports along GB coastline e.g. between Southampton and Felixstowe but not Southampton and Liverpool*)

Million tonnes		Accommodated by existing berths	Not accommodated	Total	% Not Accommodated by existing berths
GB	2003	44.9	-	44.9	-
	2015	63.1	1.4	64.5	2.2%
	2025	76.3	16.1	92.4	17.4%
North West	2003	4.4	-	4.4	-
	2015	5.4	1.2	6.4	18.8%
	2025	6.0	6.1	12.1	50.4%

Source: MDS Transmodal GB Port Supply & Demand Model

* Where unit load cargo cannot be accommodated at the port currently used, it is reallocated as far as possible to adjacent ports, but transferring no more than 13 ports along the coast (there are 72 Customs ports around the GB mainland coast).

LoLo Scenario 2 is similar to Scenario 1 except that traffic can switch to any container port throughout GB where it can find a suitable berth. This has little impact in North West England, but allows more traffic to be accommodated on GB-wide basis.

LoLo Scenario 2*Assumptions:*

- Exponential trade growth 2005-2025
- Limited new port capacity in South East England (only Felixstowe South)
- Maximum redistribution of traffic allowed (to any GB container port)

Million tonnes		Accommodated by existing berths	Not accommodated	Total	% Not Accommodated by existing berths
GB	2003	44.9	-	44.9	-
	2015	64.2	0.2	64.6	0.3%
	2025	80.1	12.3	92.4	13.3%
North West	2003	4.4	-	4.4	-
	2015	5.4	-	5.4	-
	2025	6.0	6.1	12.3	49.6%

Source: MDS Transmodal GB Port Supply & Demand Model

LoLo Scenario 3 is the same as Scenario 2 except that trade growth is assumed to be linear rather than exponential. We believe that a linear trend is more likely over the next 20 years. Under this scenario, Liverpool requires additional capacity by 2025.

LoLo Scenario 3

Assumptions:

- Linear trade growth 2005-2025
- Limited new port capacity in South East England (only Felixstowe South)
- Maximum redistribution of traffic allowed (to any GB container port)

Million tonnes		Accommodated by existing berths	Not accommodated	Total	% Not Accommodated by existing berths
GB	2003	44.9	-	44.9	-
	2015	64.4	0.2	64.6	0.3%
	2025	78.6	6.1	84.7	7.2%
North West	2003	4.4	-	4.4	-
	2015	5.4	-	5.4	-
	2025	5.9	2.8	8.7	32.2%

Source: MDS Transmodal GB Port Supply & Demand Model

LoLo Scenario 4 provides the modelled demand-supply balance assuming exponential trade growth and more significant development of capacity in both South East England and at Liverpool. Under this scenario, even with the additional post-panamax berths at Seaforth, the Port of Liverpool would be unable to accommodate an estimated 2.1 million tonnes of containerised traffic by 2025.

LoLo Scenario 4

Assumptions:

- Exponential trade growth 2005-2025
- New port capacity in South East England (at Felixstowe South and London Gateway) and at Liverpool
- 'Super regional' redistribution of traffic allowed to up to 13 ports along GB coastline

Million tonnes		Accommodated	Not accommodated	Total	% Not Accommodated
GB	2003	44.9	-	44.9	-
	2015	64.4	0.2	64.6	0.3%
	2025	90.1	2.3	92.4	2.5%
North West	2003	4.4	-	4.4	-
	2015	7.7	-	7.7	-
	2025	10.0	2.1	12.1	17%

Source: MDS Transmodal GB Port Supply & Demand Model

LoLo Scenario 5 provides the modelled demand-supply balance assuming linear trade growth and more significant development of capacity in both South East England and at Liverpool. Under this scenario, with the additional post-panamax berths at Seaforth, the Port of Liverpool would (just) have sufficient capacity to accommodate demand in 2025.

LoLo Scenario 5

Assumptions:

- Linear trade growth 2005-2025
- New port capacity in South East England (at Felixstowe South and London Gateway) and at Liverpool
- 'Super regional' redistribution of traffic allowed

Million tonnes		Accommodated at existing berths	Not accommodated	Total	% Not Accommodated at existing berths
GB	2003	44.9	-	44.9	-
	2015	64.4	0.2	64.6	0.3%
	2025	84.5	0.2	84.7	0.2%
North West	2003	4.4	-	4.4	-
	2015	7.7	-	7.7	-
	2025	9.4	-	9.4	-

Source: MDS Transmodal GB Port Supply & Demand Model

The results demonstrate the phenomenon of the declining capacity and capability of the existing physical assets as a result of the increase in ship sizes, such that by 2025 an undersupply situation has developed as the largest ships operating in the container trades struggle to find any suitable ports in Great Britain at which they can be accommodated. Existing facilities are therefore 'filled' by smaller ships with lower levels of productivity, which effectively reduces the overall operating capacity of port infrastructure while some of the largest ships cannot be accommodated at all, leading to diversion to those ports that can accommodate such ships on the Continent.

The North West is one of the two key areas in the country where the long-term shortfall in LoLo berth supply is indicated, the other being the South East, although the region's current limited involvement in deep sea trade means that ship sizes do not yet go over capacity thresholds to the extent they do in the South East. The shortfall for the North West would be located at the Port of Liverpool, as this is the region's only dedicated deep sea container port.

RoRo Demand-Supply Balance to 2025

RoRo Scenario

Assumptions:

- Straight line growth 2005-2025
- No new capacity
- 'Super regional' redistribution of traffic allowed

Million "quasi- tonnes"		Accommodated at existing berths	Not accommodated	Total	% Not Accommodated at existing berths
GB	2003	163.1	-	163.1	-
	2015	240.5	8.6	248.6	3.5%
	2025	280.7	28.4	309.1	9.2%
North West	2003	21.6	-	21.6	-
	2015	29.4	5.6	35.0	16.0%
	2025	30.8	12.4	43.2	28.7%

Source: MDS Transmodal GB Port Supply & Demand Model

The forecasts of port traffic demand in the North West in the RoRo sector are for a doubling of traffic over the next 20 years or so. By 2025 the modelling suggest that some 29% of forecast RoRo traffic could not be accommodated at a North West RoRo port.

The model scenarios for dry bulk, trade cars and semi-bulk traffics also suggest that additional capacity will be required by 2025. However, all these forecasts are based on the assumption that historic trends in trade growth will continue for the next 20 years. Research that MDS Transmodal is carrying out for the Department for Transport is analysing the key economic drivers behind growth in major commodity groups and this is likely to have an impact on, in particular, the trade forecasts for bulks.

Chapter 5: Impact Assessment

Barrow (owned by ABP) enjoys deep water and has some effectively tied traffics related to the offshore sector and the nuclear industry. However, the port otherwise has a relatively poor hinterland and is remote from major markets. Land availability is unlikely to be an issue at Barrow. Given current market and policy trends, its future roles up to 2025 are likely to be:

- A base for the offshore and nuclear industries;
- A sustainable distribution hub (waterborne, rail and road freight transport), principally serving a sub-regional hinterland.

Twelve Quays (Birkenhead) riverside roro terminal with its 24-hour unrestricted access direct to the sea and proximity to major markets, is probably the best appointed RoRo facility

in the North West. It forms part of Mersey Docks, which, in turn, is now owned by Peel Ports. As such, it should benefit from expected trade growth in a more stable market environment. The lack of land for the storage of trailers may become a constraint in the future. Given current market and policy trends, its future roles are likely to be:

- A major RoRo facility serving the GB-Ireland market (i.e. a national role);
- Given sufficient land availability adjacent to the terminal, the facility could help to support the development of distribution activity serving both the North West and Irish markets.

Birkenhead Docks (also owned by Peel Ports) enjoy quite deep water, but are dominated by the Port of Liverpool, which has an almost identical hinterland for the range of cargoes Birkenhead Docks can handle and which enjoys considerable economies of scale. The lack of an active rail link to the port may restrict its development potential as a site for distribution activity, but land availability is very unlikely to be a constraint on development. The availability of land could provide an opportunity for the development of non-port based distribution activity. Given current market and policy trends, the Docks' future roles are likely to be:

- A sustainable distribution hub (waterborne, rail and road freight transport), principally serving a regional hinterland as long as a rail link is available.
- Potential development of distribution activity serving both the North West and Irish markets.

The northern part of the Cammell Laird site is currently occupied by A&P Birkenhead, which has recently been purchased by Northwestern Shiprepairers Ltd. A&P Birkenhead operates a ship repair and conversion facility, while the southern part of the site has been purchased by a developer. If we assume that the site would not be retained for any other maritime industrial use, the site could be developed as a RoRo facility and/or distribution site with its deep water and the potential to develop a private roadway (along a railway track bed) from the site to Birkenhead Docks and the M53.

Bromborough (Mersey Wharf): Owned by Victoria Group, Mersey Wharf handles a number of minor bulk flows on a riverside berth, competing in the local "small ports" market. Its future role is likely to be as a small sustainable distribution hub for bulk and semi-bulk goods (waterborne and onward road distribution), principally serving a regional hinterland.

Fleetwood, owned by ABP, has restricted maritime access to the port plus strong regional competition from facilities with geographic advantages, which may lead to the existing service's eventual transfer to a deeper water port when new and larger ships are acquired (although the ferry line has recently renewed its contractual agreement with ABP). This could effectively imply the closure of the port to commercial traffic in the medium to long term and a future focus on leisure activities. ABP would almost certainly actively seek a new ferry

operator operating smaller vessels, but there is a risk that Fleetwood could close to commercial traffic in the medium to long term. However, if the port remains open to commercial traffic, its future role, at least in the short to medium term, is likely to be as a RoRo facility serving the GB-Ireland market.

Garston (also owned by ABP) enjoys quite deep water and is well-located to serve the M62 Corridor market. It is, however, dominated by the Port of Liverpool, which has an almost identical hinterland for the range of cargoes Garston can handle and which enjoys greater economies of scale. Land availability is unlikely to be a constraint on the development of the port. Given current market and policy trends, its future role is likely to be as a small sustainable distribution hub for bulk and semi-bulk goods (waterborne and onward road distribution), principally serving a regional hinterland.

Heysham (owned by Peel Ports) has three well-established ferry operators mainly handling unaccompanied trailers, which policy trends may favour, and the Irish Sea RoRo market should be entering a more stable period of steady growth. The port also handles trade car exports for the Irish market, carried on the existing ferry services. The major constraints relate to maritime access and relatively poor road access. The port is rail-connected, but we believe it is unlikely that a commercial case could now be made for developing piggyback rail services for unaccompanied trailers (as was once envisaged); however there could be a business case for handling trade cars by rail. Given current market and policy trends, its future role is likely to be as a significant RoRo facility serving the GB-Ireland market (i.e. a national role).

Lancaster (Glasson): Restricted maritime access to the port and relatively poor road access, plus strong regional competition from facilities with geographic advantages and its reliance on a key customer, may lead to a reduction in traffic volumes for Lancaster (Glasson) over the next 20 years and there is a significant risk that the port could close to commercial traffic. This is likely to be the case, in particular, if the port's major customer is no longer able to support the port. However, at present it provides a useful function in accommodating dry bulk traffic between the North West and the Isle of Man, providing some competition to the Isle of Man Steam Packet Company RoRo services, and in serving the needs of this key customer. Therefore, with the continued support of this customer, it is possible that the port will retain sufficient traffic to remain viable over the next 20 years with its role as a small sustainable distribution hub (waterborne and onward road distribution), principally serving a sub-regional hinterland.

Liverpool handles a very wide range of bulk, roro and lolo traffic. It is owned by Peel Ports. Its LoLo traffic should continue to grow and the port can expand its capacity within the docks by moving some existing customers with minimal capital expenditure. However, the lock gates cannot accommodate post-panamax vessels, the world's container fleet is increasing in size and these post-panamax vessels are now generally deployed by the major lines between the Far East and Europe and between the Far East and the west coast of the

United States. Trade growth between Europe and East Coast North America may not, at present, justify the use of post-panamax vessels up to 2009, but a number of factors may create an opportunity for a west coast port to serve post-panamax vessels on round the world services that are not calling at the same range of deep sea container ports in the North Sea. In this event Liverpool is likely to be the west coast port in the best position to develop post-panamax berths in that it is well-located to serve the whole of the UK market from a central point, with good road and rail links to all GB regions and through its feeder links to Ireland. Alternative proposals for post panamax developments at Bristol and Hunterston lack Liverpool's 'central' position, but will argue their cases on their own merits. As with most other deep sea container port developments currently being promoted in the UK, there may be environmental issues in relation to the development of post-panamax berths at Seaforth.

In the RoRo freight market Liverpool is in a strong competitive position, with its location, deep water and good road links providing the port with "natural" competitive advantages, particularly if the port is able to develop the Langton River berth on the back of an agreement with a customer. The market appears to have stabilised as excess capacity has been removed following the financial difficulties of Norse Merchant Ferries and P&O's partial withdrawal from the market and this should allow Liverpool to take advantage of likely market growth. Liverpool's market share should be enhanced by changes in the variable cost of road haulage, due to changes in working time legislation and road haulage taxation.

Tranmere Oil Terminal (owned by Peel Ports) is solely concerned with the import of crude oil for Stanlow oil refinery, forwarding the oil by pipeline.

Dry bulk traffic is dominated by coal, grain, feed and fertiliser imports and scrap exports, all of which are secure because of the large size of vessel that the port accommodates. A wide range of specialised liquid bulk cargoes are handled at tank farms in Liverpool as well as Birkenhead.

Given current market and policy trends, its future roles are likely to be as:

- A major deep sea "gateway" port for the region and Great Britain, handling the full range of deep sea traffics;
- The most centrally located west coast deep sea container port able to accommodate post-panamax vessels, handling both direct calls by deep sea vessels, transshipment traffic to Ireland and traffic fed from other UK and Continental deep sea container ports;
- The major Irish Sea RoRo port in the North West region, following the development of a riverside terminal;
- A major sustainable distribution hub (waterborne, rail and road freight transport), serving a national hinterland, with associated warehousing.

By 2025, land availability would be a constraint of the port's development and enhancements are likely to be required to both road and rail access to cater for the increased volumes of traffic.

The **Manchester Ship Canal**, owned by Peel Ports, is mainly concerned with petroleum and chemicals, serving Stanlow oil refinery. It has considerable potential for sustainable distribution, taking cargo inland closer to its origin or destination. In part to address this policy need, Peel Ports is seeking to develop a major distribution park at Port Salford (to serve the general distribution market). Land availability seems unlikely to be a constraint on the development of the port as a whole up to 2025. Given current market and policy trends, its future role is likely to be as the location for sustainable distribution hubs (waterborne, rail and road freight transport), principally serving a regional hinterland. It would also provide a suitable location for the development of industrial activities requiring access to maritime transport, including facilities for the handling of waste for recycling. A new traffic is imported coal transhipped through Hunterston in competition with rail.

Silloth, owned by ABP, has restricted maritime access and poor road access to the port. This, allied to a relatively poor hinterland plus strong regional competition from facilities with geographic advantages, may lead to a reduction in traffic volumes over the next 20 years. However, its ownership by a major ports group should ensure its commercial survival due to the economies of scale that ABP can provide (e.g. in terms of spreading management overheads across a number of ports). The port also has a well-established major customer. Land availability is unlikely to be a constraint on the development of the port. Given current market and policy trends, its future role is likely to be as a small sustainable distribution hub (waterborne and road freight transport), principally serving a sub-regional hinterland.

Workington has been in a poor financial position in recent years, due to the loss of a major traffic (related to a local manufacturing facility that closed) and a historic lack of investment in the port's facilities. It is also remote from major population centres and has a relatively poor hinterland. The local authority is seeking to develop a free-standing legal entity that would have ring-fenced finances and operational independence. Given a sustainable financial future, the port should be able to perform a role in developing sustainable distribution with its local industrial hinterland and its reasonable road links (particularly via the A66) and with its operational rail link. Land availability is unlikely to be a constraint on the development of the port. Given current market and policy trends, its future role is likely to be as a sustainable distribution hub (waterborne, rail and road freight transport), principally serving a sub-regional hinterland.

1. INTRODUCTION

1.1 Aim and objectives of study

The Northwest Regional Development Agency (NWDA) commissioned MDS Transmodal (MDST) and Regeneris Consulting Ltd in March 2005 to carry out a study of the economic trends and land use requirements of ports in North West England.

The **overall aim** of the study was to provide the NWDA and the other key regional partners with an accurate assessment of the key economic trends affecting North West ports and how this translates into port land requirements. The study is designed to provide an evidence base for the development of future regional policy and strategy.

The **study objectives**, as set out in the Specification, were as follows:

- Consider relevant economic trends, including regional and sub-regional trends and forecasts, and trends in the port industry and assess how these market driven trends are likely to impact on the ports on a case-by-case basis over the next 20 years.
- Identify any particular issues and opportunities, taking into account relevant issues identified in current policy documents at a European, national and regional level.
- Set out clear and realistic roles for each of the ports for the next 20 years, taking into account potential land availability and existing maritime and inland infrastructure capacity and commitments.
- Identify any ports where land availability is a constraint on port expansion and make recommendations;
- Identify any ports where rail and road infrastructure is likely to be a constraint on port expansion;
- Identify whether there is any evidence of a current or future shortage of wharfside land within the region.

1.2 Scope of research

The **geographic scope** of the study was focussed on the North West Region, although competitive impacts over a wider area have also been considered, depending on the shipping and port market.

The **port market sectors** to be included were all those relating to the freight market, therefore excluding the RoRo passenger and cruise sectors. Although the Irish Sea RoRo passenger and cruise market raise a number of issues for the North West, they are unlikely to have a major impact on future land use requirements.

The **time horizon** for the study was 2025. Short run forecasts of demand to 2009 were based upon detailed macro-economic indicators including OECD based economic growth

rates. Forecasts beyond 2009 were based upon the extrapolation of those trends to 2025. More detail on the methodology used for forecasting demand for port infrastructure is provided in Chapter 4.

1.3 Methodology

Our approach was based principally on an analysis of supply and demand for North West port facilities using our GB Port Supply and Demand Model. However, in addition, we have set out the key components of the port/shipping and policy environment likely to influence the development of ports in North West England up to 2020, based on in-house databases and market knowledge. We also carried out an evidence-gathering exercise with the following stakeholders:

- Associated British Ports (ABP)
- English Nature
- Cumbria County Council
- Department for Transport
- Highways Agency
- Lancashire County Council
- Lancaster City Council
- Liverpool City Council
- Manchester Ship Canal
- Mersey Docks & Harbour Company (MDHC)
- Network Rail
- Port of Workington
- Sefton Metropolitan Borough Council
- Wirral Metropolitan Borough Council
- Wyre Borough Council

This Final Report provides the results of the analysis from the GB Port Supply and Demand Model, an analysis of constraints and opportunities for each of the ports up to 2025 and an analysis of the potential significance of the North West ports to the regional economy.

1.4 North West Ports

Table 1.1 provides an analysis of the North West ports' traffic in 2003, showing total and unitised tonnes separately.

Table 1.1: North West Ports, Total Tonnes & Unitised Tonnes, 2003

Thousand Tonnes

	Owner	Total Tonnes	Unitised Tonnes
Liverpool	Peel Ports	31,684	9,494
Garston	ABP	433	-
Manchester Ship Canal	Peel Ports	6,088	-
Fleetwood	ABP	1,624	1,561
Lancaster	Trust Port	156	-
Heysham	Peel Ports	4,083	3,745
Barrow	ABP	241	-
Workington	Local Auth.	258	-
Silloth	ABP	155	-
Total		44,723	14,800

Source: DFT Maritime Statistics

In 2003 the NW region's ports handled 45 million tonnes of cargo, equivalent to about 8% of total UK port traffic. The largest port by volume is Liverpool (including Birkenhead and Tranmere for statistical purposes), which handles about two thirds of the region's traffic. The Manchester Ship Canal, the second largest port by volume, handled 6 million tonnes of bulk cargoes in 2005 and a small volume of container traffic. Fleetwood and Heysham are essentially ferry ports for the Irish Sea market, handling both accompanied and unaccompanied freight. Heysham, Garston and Lancaster (Glasson Dock) also handle a variety of bulk cargoes for a regional hinterland. In Cumbria, Workington, Barrow and Silloth principally handle traffic for sub-regional hinterlands.

Following its takeover of MDHC, Peel Ports is the most significant port owner, with Liverpool, Birkenhead, Tranmere, Heysham and the Manchester Ship Canal. ABP owns four relatively small ports in the North West (Barrow, Silloth, Fleetwood and Garston), Victoria Group owns a small port at Bromborough, while there is one small trust port (Lancaster) and one municipal port in Workington.

Table 1.2 provides an analysis of the hinterlands of the North West ports collectively by mode of appearance in 2003, compared to the hinterlands of the North East and Yorkshire and the Humber ports. Only traffic that is distributed inland is shown i.e. excluding, for example, liquid bulk traffic that is stored in a port-based tank farm.

The analysis shows that while bulk traffics in all three regions were largely distributed within the relevant 'home' region or neighbouring northern British regions, the North West unit load ports collectively served a GB national hinterland to a greater extent than unit load ports in the other Northern English regions. While 65% of LoLo traffic through Liverpool is distributed to Northern Britain (the three northern English regions and Scotland), 21% is for Central Britain (Wales, the East and West Midlands and the East of England) and 13% for Southern Britain (Greater London, the South East and the South West). By comparison, 96% of the North East ports' LoLo traffic was distributed to Northern Britain (69% to the

North East itself), while the corresponding figure for Humberside ports was 82%, with 13% distributed for Central Britain and 4% for Southern Britain.

In the case of RoRo truck and trailer traffic, the North West ports play a genuinely national role. 66% of the North West's accompanied RoRo traffic is distributed to and from Southern Britain, while the corresponding figure for Yorkshire and the Humber is only 1%; the North East's accompanied traffic was dominated by flows to Scotland. For unaccompanied RoRo traffic, the North West is serving a national hinterland with 42% of the region's accompanied RoRo traffic distributed to and from Southern Britain and 18% to Central Britain and only 41% to Northern Britain. While the North East's traffic was dominated by flows to and from the North East and Scotland (together 83% of total traffic), Yorkshire and the Humber was mainly serving the M62 Corridor (62% of unaccompanied traffic) and Central Britain (15%). These statistics reflect the fact that the North West has a deep sea container port serving the whole of Britain and acts as a gateway for Britain's traffic to Ireland.

There is therefore an important distinction between the role played by ports in the North West (and principally Liverpool) and those in the North East and on the Humber. East coast ports play a very important 'super-regional' role in providing access for general cargo for all of Northern England, and parts of the Midlands, to the Northern Continent, Scandinavia and the Baltic. These ports also serve a number of heavy industry plants (including three refineries and two integrated steel plants) that play a major role in Northern England's economy. By contrast, ports in the North West tend to play a national role for particular forelands (North America and Ireland), rather than a mainly 'super regional' role. North West ports serve only one refinery and no steel works whereas Northern England's east coast ports serve three refineries and two steel plants

Table 1.2: Hinterlands of ports of Northern Way, by region and mode, 2003*

Thousand tonnes

Port Region	Mode	East Midlands	East of England	Gtr. London	NE	NW	Scotland	SE	SW	Wales	West Midlands	Y&H	Total (thousand tonnes)
NORTH WEST	LoLo	5%	4%	8%	9%	40%	5%	3%	2%	4%	8%	11%	2,766
	Accomp. RoRo	4%	13%	53%	1%	9%	-	11%	2%	1%	3%	3%	2,949
	Unaccomp. RoRo	6%	6%	35%	15%	20%	-	6%	1%	2%	4%	6%	5,098
	Bulk	2%	1%	19%	-	62%	-	3%	3%	1%	5%	2%	10,194
	Total	4%	45	26%	5%	42%	1%	55	2%	2%	5%	4%	21,007
NORTH EAST	LoLo	-	-	2%	69%	6%	10%	-	1%	-	-	11%	1,035
	Accomp. RoRo	-	-	-	3%	-	97%	-	-	-	-	-	183
	Unaccomp. RoRo	-	-	-	52%	6%	31%	-	-	-	-	9%	1,186
	Bulk	1%	4%	25%	36%	13%	2%	2%	2%	2%	3%	8%	10,651
	Total	1%	3%	20%	40%	12%	7%	2%	2%	2%	3%	8%	13,055
YORKSHIRE & THE HUMBER	LoLo	7%	-	4%	6%	32%	-	-	-	2%	4%	44%	2,610
	Accomp. RoRo	3%	-	1%	7%	13%	55%	-	-	1%	3%	16%	1,053
	Unaccomp. RoRo	6%	2%	7%	8%	27%	5%	3%	-	3%	4%	35%	7,131
	Bulk	6%	3%	19%	5%	14%	2%	1%	2%	1%	8%	39%	17,769
	Total	6%	2%	14%	6%	19%	4%	2%	2%	2%	6%	37%	28,563

Source: MDS Transmodal GB Freight Model

* Excluding 'port captive' traffics



Map 1: North West Ports & their Hinterland Connections

2. MARKET ENVIRONMENT

2.1 Introduction

This chapter sets out key trends in the UK ports industry as a whole, the regional economic context within which the ports operate and a description of North West ports' traffics. It describes the hinterland of each port and the extent to which the North West's international traffic is handled by the region's ports. Finally, it sets out the trends likely to affect North West ports by port market sector.

2.2 The UK ports industry: key trends

We set out below a high level summary of the key trends in the UK port industry:

Key Trends in UK Ports Industry

- i. GB port traffic has been growing at a steady rate of **1% per annum**, and while dominated in volume by major bulk trades, the overall more rapid increase in unitised traffic (around 5% per annum) has had an important impact on the overall composition of traffic and demands placed on port infrastructure.
- ii. **Growth in the unitised sector** has been fuelled by:
 - Continued growth in consumer expenditure;
 - Extensive import substitution due to cheaper foreign manufacturing;
 - Changes in the UK industrial base leading to imports of components.
- iii. Almost **50% of all port traffic in the UK is orientated towards the EU and other short sea countries**; a further 23% is deep sea and the rest is domestic (between British ports, whether mainland GB, Northern Ireland or islands).
- iv. Growth in unitised trade with the Far East (9.0% p.a. since 1998), **Near Continent** (5.5% p.a.) and **the Irish Republic** (9.1% p.a.) has been the strongest.
- v. The **growth in trade with the Irish Republic** is explained by rapid expansion in the economy of the Irish Republic coupled with reform of its port industry – in Dublin in particular. This change particularly benefited the ports of Liverpool and Holyhead, by diverting cargo from the Northern Corridor (i.e. particularly from ports in Dumfries and Galloway to Northern Ireland) to the Central Corridor (routes from NW England and North Wales to the Dublin area).
- vi. The GB ports industry has benefited from trade growth and the **end of the Dock Labour Scheme** over the past 15 years. The end of the Scheme allowed productivity to be improved and trade growth to be accommodated over existing infrastructure. The major ports with deep water and adequate on-shore infrastructure (particularly in the South East) are now relatively full.
- vii. With rapid trade growth in the deep sea container sector and a lack of port capacity in SE England a number of proposals have been put forward to **develop new deep sea container port capacity**, mainly in SE England, in locations with sufficient depth of water and proximity to major markets.
- viii. There is increasing public sector concern for protection of the **environment**, which has made major port infrastructure expansion difficult to deliver - the government's rejection of ABP's proposal to develop a deep-water container terminal at Dibden Bay is reflective of the impediments to port construction.
- ix. There is clear evidence that **existing deep sea container ports in the South East of the**

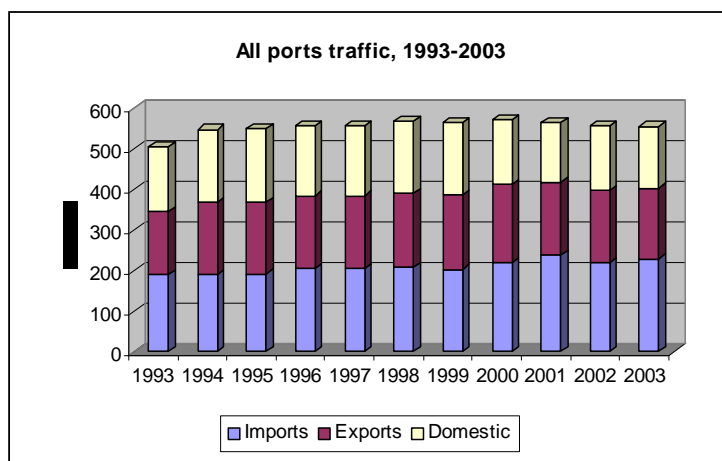
UK are already being used to their maximum capacity, which could lead to a requirement for development of additional port infrastructure in competitive locations in Northern Britain. It also provides an advantage to those deep sea container ports that are able to expand without serious environmental impacts.

- X. In respect of inland distribution costs, **rising road haulage costs** are expected to benefit regional ports that are in competition with Felixstowe and Southampton for containers because these ports are (on average) closer to the ultimate destinations for the overall UK market.

GB Port traffic development

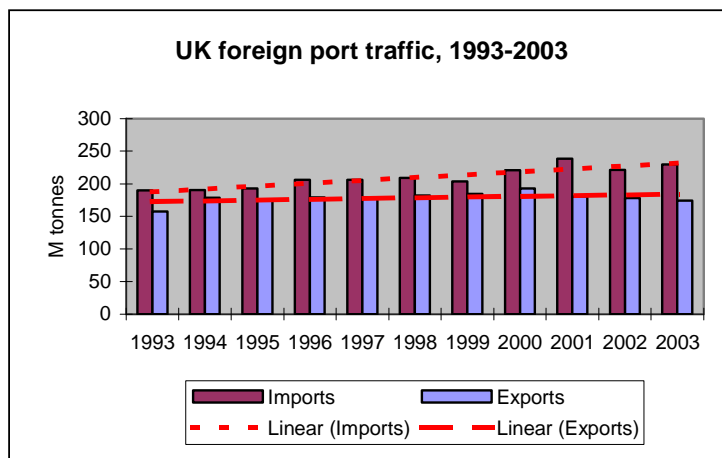
In 2003 the GB ports industry handled around 539 million tonnes of cargo. The industry has experienced continual growth since the Second World War and growth in overall tonnage has been maintained at an average of 1% per annum since 1990.

Figure 2.1



Source: DfT Maritime Statistics

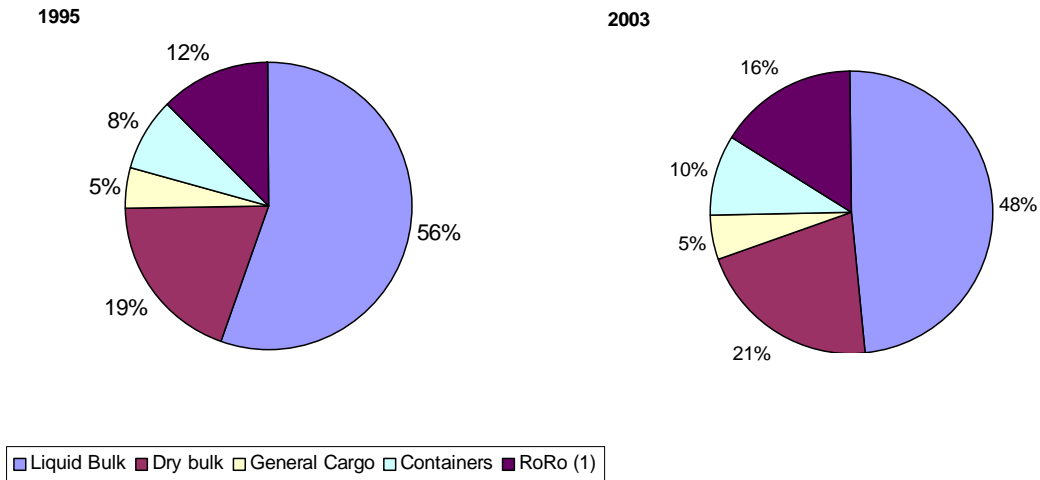
Figure 2.2



Source: DfT Maritime Statistics

There have been significant differences between the performance of the different cargo groups over the period 1993-2003, with unitised cargo (i.e. container and RoRo) growing by 5.2% per annum, but bulk sectors growing by only 0.5% per annum.

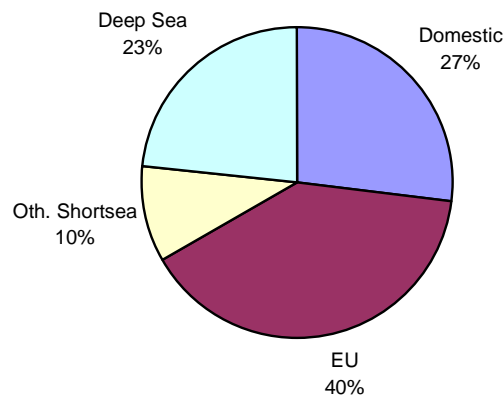
Figure 2.3 Composition of UK port traffic by mode of appearance



Note: (1) RoRo includes propelled (i.e. RGVs and trade cars) and non self-propelled cargo (principally unaccompanied RGVs).
 Source: DfT Maritime Statistics

Liquid bulk cargo (crude oil and oil products, liquid gas and chemicals) continues to represent the largest proportion of all port traffic in 2003. However, the overall composition of traffic demonstrates the increase in market share of the unitised sector from 20% in 1995 to 26% in 2003.

Figure 2.4: Orientation of port traffic



In today's market, almost one-half of all port traffic in the UK is orientated towards the EU and other short sea markets. A further 27% is accounted for by domestic coastal shipping, which is mainly oil and oil products. Deep sea trades account for less than one-fifth of all port traffic.

The leading deep sea ports are listed in Table 2.1. Grimsby and Immingham and Tees and Hartlepool are the UK's two major deep sea ports, with large oil and bulk ore terminals within the port complexes. In the container trades, Felixstowe, Southampton and Thamesport (on the Medway) are the three most important deep sea container ports, followed by Liverpool and Tilbury.

The North West region's ports are very largely geared to the short sea and domestic shipping markets. Only Liverpool has any presence in the deep sea markets, while virtually all of Heysham and Fleetwood's traffic is with Irish Sea ports. Liverpool is ranked 7th on the GB mainland in terms of overall tonnage and ranked 5th for non-oil traffic. The four leading regional ports (Birkenhead, Tranmere and Bromborough are included within Liverpool) account for 27.3m tonnes of non-oil traffic (10.1% of the national total for ports of over 1m tonnes annual throughput). The smaller ports of Garston, Lancaster, Barrow, Workington and Silloth account for a further 1.2m tonnes of cargo together.

The orientation of trade is highlighted here as the profile of ships involved in the deep sea or short sea trades is quite different and has a significant bearing on the requirement for port facilities, as well as port productivity and overall port capacity.

Table 2.1: GB port traffic by area of load or discharge (ports >1m tonnes), 2003

Million tonnes

	Rank	Domestic	Short sea	Deep sea	Total	Of which: non oil
Grimsby & Immingham	1	9.8	28.9	17.3	55.9	33.9
Tees & Hartlepool	2	12.6	25.7	15.6	53.8	21.6
London	3	14.2	29.2	7.6	51.0	31.9
Forth	4	10.2	25.0	3.5	38.8	4.7
Southampton	5	10.5	15.0	10.1	35.8	11.5
Milford Haven	6	11.6	18.1	3.0	32.7	0.8
<i>Liverpool</i>	7	8.9	12.6	10.2	31.7	20.1
Felixstowe	8	0.6	9.0	12.7	22.3	22.3
Dover	9	0.2	18.3	0.3	18.8	18.8
Medway	10	3.4	8.0	4.2	15.6	14.4
Bristol	11	2.2	3.3	5.9	11.4	9.2
Hull	12	0.8	9.1	0.6	10.5	10.0
<i>Manchester</i>	16	1.2	4.7	0.1	6.1	1.5
<i>Heysham</i>	20	3.3	0.8	0.0	4.1	4.1
<i>Fleetwood</i>	35	1.6	0.0	0.0	1.6	1.6
Total		116.9	252.1	105.2	474.2	270.0

Source: DfT Maritime Statistics

2.3 Regional Economic Context

The analysis of the recent performance and future prospects of the region's economy has drawn heavily on the economic analysis that Regeneris Consulting and Experian have recently carried out on behalf of NWDA (and which is informing the revision of the Regional Economic Strategy).

As part of this exercise, three future scenarios for the path of the region's economy and the five sub-regions¹ over the next 20 years were examined. Needless to say, these forward looks are fraught with difficulties and uncertainty. The scenarios suggest a range of future net job creation estimates for the period 2005 to 2025 and these range from as little as 30,000 extra jobs under a pessimistic 'longer term trends continue scenario' to around 270,000 extra jobs under the two more optimistic scenarios.

Recent Economic Performance

The performance of the region's economy has improved markedly in relative and absolute terms in the period since 2000, in common with other northern regional economies. Over the period 2000 to 2003 150,000 extra jobs were created in the region and the rate of growth of GVA at 18.1% exceeded that of England by around 0.5% per annum. The rate of growth

¹ Based on modelling work undertaken by Experian. The scenarios are: longer term trends continue; recent employment success continues; regional productivity transformation.

of regional GDP per capita also exceeded that of all the region's comparator regions in continental Europe².

However, the North West's total Gross Value Added (GVA) of £98bn in 2003 was still 12% below the England average per capita, which represents a £13.6bn output gap or £2,000 per head of population. The current output gap stems from two main sources:

- Around a quarter is from the fact we have a lower proportion of the North West's population in work (equating to 80,000 people below what it would be if at the England average);
- Around three quarters is due to the below average rates of productivity of those in work and the relatively low number of hours worked per employee.

The low rates of productivity are particularly pronounced in the service sector, especially the business services sector. However, productivity rates overall are above average in the manufacturing sector – largely due to high rates of productivity and a relative specialisation in the chemicals/pharmaceuticals, aerospace and nuclear reprocessing sectors.

The North West's relative productivity has dropped back as employment has grown rapidly and more people, often with lower skills, have been drawn into work. The labour market in the region has performed particularly strongly and the North West is the only region to see a reduction in Incapacity Benefit claimants 2001-2003 and only one of two to see a reduction in the number economically inactive.

Table 2.2 sets out the pattern of employment change for the sectors in the North West over the period 1999 to 2003. This highlights the concentration of employment growth amongst service sectors, whilst employment decline has been concentrated amongst manufacturing and production sectors, but also some service sectors such as Insurance. A number of these declining sectors are heavy users of the region's ports including, for example, Chemicals, Food and Drink, Pulp and Paper. However, a number of the growing sectors create a demand for port services, in particular for imported goods (e.g. computer services) although these are probably more likely to enter the region from a port outside of the region.

² These are Bayern (Germany), Centre-Est (France), Este (Spain), Lombardia (Italy), Nord Ovest (Italy), and Vlaams Gewest (Belgium).

Table 2.2: Pattern of Sectoral Employment Change, North West 1999-2003

Employment growth 1999-2003	Change Much Better than National Rate (over 10%)	Change Similar or Slightly better than National Rate	Change Worse than National Rate (by over 2%)
Major Regional Employment Growth (over 10,000 jobs)	Other business activities Construction Computer and related Real estate activities	Health and social work Hotels and restaurants Supporting transport activities	Education Retailing
Significant growth (4,000 to 10,000 jobs)	Land transport Financial services (except insurance and pension funding)	Recreational, cultural and sporting activities Communications Personal services Public administration	
Significant decline (4,000 to 10,000 jobs)		Metal products Chemicals and chemical products Garages Wholesaling Transport equipment Food and Drink Clothing Other machinery and equipment Textiles	Water Insurance and pension funding, except compulsory social security Automotive Pulp and paper Electrical machinery

Source: ABI © Crown Copyright and Regeneris Consulting analysis

Sub-regional performance has varied with key differences being:

- First, the remarkable turn-around in the performance of Greater Merseyside which has become one of the fastest growing parts of the North West (and indeed England) after decades of stagnation. Liverpool has been one of the fastest growing cities in England. However, population has continued to decline although at a much slower rate than historically and there are signs that the decline may have stabilised and in parts of the area has been reversed.
- Second, the continued poor economic performance of Cumbria in GVA terms. If Cumbria's GVA had grown at the average rate of the North West 1999-2002 total GVA would have been some £450m higher in 2002 (8% higher in Cumbria and 0.5% higher in the whole region). However, Cumbria's performance in job creation terms has been stronger.
- Third, continued growth in Cheshire and Warrington, but at a slower rate than in the recent past and no longer substantially faster than the rest of the region.
- Fourth, Greater Manchester has performed at a rate similar to the regional average since 1999. However, this rate of growth marks a significant improvement relative to the England average on the previous period. It is worth bearing in mind that Greater Manchester is by far the largest economy in the region, accounting for 40% of all GVA generated in 2002. Its performance has, as the largest part of the region's economy, a major bearing on overall regional economic performance.

- Fifth, Lancashire has seen steady economic growth; however employment growth has been faster than GVA growth indicating a reduction in productivity (output per worker).

At a more local level there are much greater variations in performance. The two main cities of Manchester and Liverpool have been two key sources of recent employment creation, especially since 2000. One of the most noticeable features of the past four years has been the strong performance of the south part of Greater Manchester (including Manchester city centre) - an area where both employment and GVA have grown rapidly. In contrast the north part of Greater Manchester has performed sluggishly with growth in GVA well below the regional average. Similarly, the overall picture for Lancashire masks significant differences in growth rates between parts of East Lancashire and the more dynamic area around Preston.

There are strengths and weaknesses in the performance of the region and its current assets – these are discussed below with a focus on skills, enterprise, innovation, and investment.

Skills: there is a significant skills gap at higher skills levels (80,000 fewer people of working age with graduate level qualifications than if at the England average) and there is a higher proportion of people with low or no qualifications (120,000 “extra” people of working age with no qualifications compared to the England average). North West employers are less likely to train than average. There are signs however that the skills gaps are reducing at the higher skills level. The region does of course have the potential advantage as one of the largest producers of graduates in the UK. In 2003-4 the 240,000 higher education students studying in the region was the second highest in England (after London) and has been growing at a faster rate than any other region. Around 65% of the region’s graduates finding work do so in this region. From the point of view of attracting businesses, the fact that the region has the single largest number of people with graduate level skills (over 1 million) outside London and the South East is important.

Enterprise: there is a substantial enterprise gap of around 20% fewer businesses per head and new start-ups compared to the England average. The North West would need around another 40,000 businesses if it were to mirror national levels. There is a complex set of factors explaining the gap: demand; skills; and cultural factors (which are especially important). The region has been catching up in recent years, although at current rates this will take many decades. Enterprise rates appear slightly higher in relative terms amongst younger people and attitudes to enterprise have improved over the last couple of years.

Innovation: the region performs well on several measures of innovation and R&D. The total levels of business R&D (£1.5bn in 2001) per head of population as a % of GVA are above average driven by a few peaks of world class performance and our important chemicals, pharmaceuticals, aerospace and nuclear sectors. We have a number of world class centres of excellence in our Universities, with 87 departments receiving 5 or 5* ratings in the last Research Assessment Exercise in 2001 (10.6% of the total for all English Universities). The

recently created new University of Manchester has the 5th largest research budget provided by HEFCE³ of any English University and indeed the scale of HEI research activity in Manchester is larger than in any single city in the Midlands or North of England. However, in spite of these positives, there appears to be a worrying general poor performance in a large 'tail' of firms - an innovation gap reflected in below average rates of patenting and in firms being "innovation active". The region also fares very poorly in terms of its share of "other" government R&D spend (in the NHS and other research establishments which are heavily concentrated in the South of England). The region has 10% fewer people employed in broadly defined knowledge economy sectors than the England average – it would need to see an additional 90,000 people employed in these sectors to reach the current England average. However, the rate of growth in recent years (1998 to 2003) has exceeded the national average and if projected forward we could converge by 2020.

Investment: overall total levels of investment in our infrastructure, housing and business base are lower than many other regions (in part reflecting the past slow rate of growth and static population which tend to reduce rates of new investment as additional houses, schools etc are not needed as much). In 2000 the rate of overall investment per head of population was 19% below the national rate. The additional investment likely to go into the new growth areas in the South East is likely if anything exacerbate the gap in the future.

The North West is an important **trading region**. In 2003 the region exported £17.0bn of goods abroad. This figure equates to 17% of total GVA, and this proportion was very similar to the England average. The region imported £16.6bn in goods, making the North West only one of three English regions making a net contribution to the UK balance of trade. Exports are highly concentrated - a few categories account for a large share of exports. In particular organic chemicals (£1.9bn or 31% of the UK total) and pharmaceutical products (£3.4bn or 29% of the UK total) are key exports from the region.

Future Economic Prospects

Under all scenarios, the region's economic structure becomes more average compared to the UK as manufacturing is forecast to shrink considerably in relative importance. In 1989 manufacturing accounted for 32% of the region's GVA and will shrink to an estimated 20% of the region's total GVA in 2005. This trend is forecast to continue. Also overall manufacturing employment is forecast to decline significantly and fall faster than the rest of the UK due to our mix of industries and assumed relative performance.

A large part of the change is due to a change in the nature of manufacturing activity with a concentration of higher value added activity and continued outsourcing of activities to be treated as service sector activity. Although within this overall relative decline some sectors perform more strongly (such as textiles, machinery and metals). The change in scale of

³ The Higher Education Funding Council; data for the academic year 2005/6

manufacturing activity is in part due to changes in the organisation of production and a blurring of the boundaries between sectors.

A great deal of the region's net GVA and employment growth is expected to be in the communications and business services sector (which includes computing) – in line with national trends. The rest of net employment growth is expected in people related services: education; health (as a result of the ageing population and trend for increased spend on health) and personal services.

The scenarios suggest different growth paths for the sub-regions and these are set out below.

Cheshire and Warrington: over the last couple of decades it has been the fast growing sub-region in the North West in terms of GVA, employment and population. The long term trends scenario suggests a significant reduction in the growth rate, largely because of slow population and so labour supply growth. This fall in growth rate has at its heart the assumption that housing (and site) constraints on growth will limit the absolute scale of employment change. The area is expected to perform particularly strongly under the productivity transformational scenario as it has a higher share of employment in the knowledge economy service sector and so is well placed to capture this element of the region's transformation.

Cumbria: over the longer term this has been the poorest performing sub-region in employment and especially GVA terms. Cumbria faces a unique and difficult set of challenges in the future, such as the run down of the nuclear sector on the West Coast, and all scenarios suggest stagnation or decline in its economy. The scenarios paint a bleak picture for the Cumbrian economy. Its economy is also much less connected to other parts of the North West and more self-contained, in part because of its location and the fact that labour market flows with the rest of the region are very limited. It is therefore less well placed to benefit from growth in other parts of the region.

Greater Manchester: this is forecast to be the best performing sub-region under all scenarios, in part because it is expected to have the fastest growing working age population. It performs well under the recent employment success scenario where net employment growth of 140,000 jobs (2005 to 2025) and even stronger under the productivity transformation scenario (160,000 jobs or 60% of all net regional growth) where it benefits in a similar way to Cheshire and Warrington. GVA per capita is forecast to exceed the UK average by 2025 as is the employment rate under the two faster growth scenarios. The sub-region does particularly well under the productivity transformation scenario.

Greater Merseyside: forecasting the growth path of the Merseyside economy produces the greatest contrast under the scenarios. The prognosis for the sub-region is gloomy under the longer term trends scenario, with total employment falling slightly from 2005, productivity lagging and the employment rate changing little. Under the recent employment success scenario there is much stronger employment growth (around 60,000 extra jobs to 2025) and consequent GVA growth, with GVA per capita improving significantly compared to the England average. The prospects are not as positive under the productivity transformation scenario as the sub-region's employment base is less well placed to benefit from the productivity improvements and shift in pattern of employment. The greatest uncertainties about the future direction of the economy exist for Greater Merseyside – largely because its recent economic performance and record in job creation is a clear break from past trends.

Lancashire: this area is forecast to perform slightly better than the regional average in terms of employment creation under all the longer term trends and productivity transformation scenarios, however less well under recent employment success. It is only under the productivity transformation scenario that the area is expected to see a relative improvement in GVA per capita (and 60,000 additional jobs).

Implications for the Region's Ports

So what are the implications of the region's recent performance and future prospects for the region's ports? The first thing to note is that the performance of the region's economy is only one factor influencing the performance of its ports. Needless to say, there are other national and international considerations that exert a very significant influence on the performance of these ports, but in addition some of the region's ports serve markets well beyond its immediate boundaries. We believe the key implications of the region's performance and prospects are:

- The continuing shift from manufacturing activity to the service sector across the North West is expected to reduce both the imports of raw materials and exports of manufactured goods to and from the region's manufacturers.
- The gradual improvement in the region's prosperity together with the reduction in UK's manufactured output will lead to an increase in the import of manufactured consumer goods from elsewhere in the world. Some of this increase in imports will come through the region's ports, but also through the South East ports.
- The prospects of some specific sectors may have a significant impact upon particular ports where there is a heavy dependence upon the activities of these sectors. This dependence is far more likely to exist where the ports are relatively small in terms of their total volume of freight. An example might be the run down of the BNFL Sellafield site, which may have implications for the Port of Barrow.

In practice it is very difficult to draw out the implications of the region's economic prospects for transport and land use and the possible knock-on effects for the region's ports. However we have noted a number of issues that could have an indirect impact:

- The region's core cities have experienced strong employment growth in recent years and this has led to an increased take-up of employment land. In some parts of the region (e.g. land adjacent to the Manchester Ship Canal) this has led to competing demands for land which might previously have been freely available for port uses.
- There will be significant changes in the patterns of economic activity by sector over the next couple of decades, releasing yet more previously developed land and changing the spatial and site-specific pattern of property demand. Some of this land may be in the immediate proximity to the region's ports and provide scope for re-use for port related activities - a continuation of a trend which has been occurring in some locations, such as the Port of Liverpool, for a number of years.
- The growth in higher-level skills in the workforce will tend to lead to longer commuting patterns and use of the car (other things being equal). This could contribute to increased congestion, although its impact on the access to the region's ports might be limited.
- Growing incomes, increased leisure activity and the popularity of waterfront locations has led to the development or proposals for mixed use development schemes on former port land. This trend is likely to continue especially where port land is freed up in the main urban areas (and hence demand for other uses is strong).

2.4 Regional port traffic

Port traffic development

The development of port traffic through the North West's ports since 1980 is presented in Table 2.3, while changes in tonnage volumes between 1993 and 2003 are summarised below in Table 2.2.

Table 2.3: NW England Ports, Total Tonnes & Unitised Tonnes, 1992-2003

Thousand tonnes

	Owner	Total Tonnes			Unitised tonnes		
		Tonnes 2003	Tonnes 1993	% change	Tonnes 2003	Tonnes 1993	% change
Liverpool	Peel Ports	31,684	30,504	+3.9%	9,494	5,113	+85.7%
Garston	ABP	433	674	-35.8%	-	-	-
Manchester Ship Canal	Peel Ports	6,088	7,438	-18.2%	-	4	-
Fleetwood	ABP	1,624	1,442	+12.6%	1,561	*	-
Lancaster	Trust Port	156	141	+10.6%	-	-	-
Heysham	Peel Ports	4,083	2,205	+85.2%	3,745	*	-
Barrow	ABP	241	264	-8.7%	-	-	-
Whitehaven	Trust Port	-	4	-	-	-	-
Workington	Local Auth.	258	528	-51.1%	-	-	-
Silloth	ABP	155	99	+52.5%	-	-	-
Other Cumbria & Lancs. ports	-	-	-	-	-	3,375	-
Total		44,723	43,299	+3.2%	14,800	8,492	+75.3%

Source: DFT Port/Maritime Statistics

* Not separately identified in the statistics

In 2003 the North West region's ports handled 45 million tonnes of cargo, equivalent to 8.2% of total UK port traffic. The analysis indicates that the main drivers for port traffic growth in the region are Liverpool and Heysham, Liverpool being one of the UK's major ports handling a range of deep sea and short sea traffics, while both Liverpool and Heysham have benefited from the significant growth in the Irish Sea RoRo market over the last ten years.

The Manchester Ship Canal handles almost 5 million tonnes per year of liquid bulk traffics, but also handles other bulk cargoes on wharves further up the canal and the owners of the Canal also have plans for a tri-modal terminal (road, rail, water) at Port Salford. A coastal feeder container service operates to Irlam Wharf – the only container service to a North West port other than Liverpool.

Fleetwood, like Heysham, is essentially a ferry port for the Irish market, handling both accompanied and unaccompanied freight. Heysham, Garston and Lancaster (Glasson Dock) also handle a variety of bulk cargoes for a regional hinterland. In Cumbria, Workington, Barrow and Silloth are commercial cargo handling ports, while Whitehaven and Maryport now both concentrate on marine leisure and tourism related activities. Cumbria's ports principally handle traffic for local and regional industries and, while they handle relatively low volumes of traffic, they provide an important environmental as well as economic function allowing cargoes to be brought as close as possible to the origins and destinations of cargo. The Port of Barrow is also a major industrial complex involved with shipbuilding, offshore support and the export of nuclear fuels, activities that combine to make the port estate a major source of employment in the sub-region.

In terms of ownership, Peel Ports now own Liverpool, Birkenhead, Tranmere and Heysham, as well as the MSC. The other major port owner in North West England is ABP, which owns four relatively small ports mainly providing a service for local and regional hinterlands.

The NW Port Hinterland

The statistics presented in the following section have been generated by MDS Transmodal's GB Freight Model (GBFM). The data is validated to DfT Maritime Statistics, the DfT's Survey of the Origins and Destinations of International Traffic (1991 and 1996), Network Rail traffic statistics and the DfT's Continuing Survey of Road Goods Traffic. The Model is used by the DfT within its National Transport Model.

We have presented regional data in two different forms:

- 1) Firstly we have examined the importance of the North West ports to the national freight market and the volume of traffic that is handled for regions beyond the North West – in effect describing the extent of the ports' national hinterland.
- 2) Secondly, we have shown the volume of import/export freight traffic that is generated by the North West region alone and the extent to which North West ports are involved in handling this traffic and the extent of competition with ports in other regions. Traffic that is not distributed any distance inland (e.g. traffic such as bulk liquids delivered from short sea tanker vessels to port based refineries) is excluded from the analysis in this chapter.

Table 2.4 North West Port Traffic, 1980-2003

Thousand tonnes

Port	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Liverpool	12,335	10,363	23,183	24,764	27,795	30,504	29,465	29,987	30,874	30,841	30,357	28,913	30,421	30,288	30,413	31,684
Garston	1,147	1,465	756	735	614	674	747	763	684	588	572	522	472	462	443	433
Manchester	12,695	9,510	8,133	7,546	7,484	7,438	7,686	8,379	8,529	7,939	7,409	7,825	7,687	7,897	6,279	6,088
Fleetwood	1,944	1,879	1,381	1,401	1,244	1,442	1,198	1,236	1,288	1,362	1,106	1,368	1,530	1,608	1,521	1,624
Lancaster (Glasson)	134	233	213	177	159	141	148	129	129	121	126	112	135	117	130	156
Heysham	885	926	1,485	1,620	1,918	2,205	2,809	2,708	3,124	4,069	3,585	3,370	3,723	3,824	3,705	4,083
Barrow	44	85	242	169	233	264	284	274	247	261	275	247	231	225	279	241
Whitehaven	733	457	550	440	128	4	12	5	0	0	0	0	0	0	0	0
Workington	329	574	518	501	479	528	579	587	570	565	623	563	636	418	430	258
Silloth	68	109	50	47	73	99	125	126	150	147	155	231	168	141	134	155
Other ports	1,003															
All NW ports	31,317	25,601	36,511	37,400	40,127	43,299	43,053	44,194	45,595	45,893	44,208	43,151	45,003	44,980	43,334	44,722
All GB ports	412,014	449,422	475,295	477,803	478,055	487,351	518,058	527,885	530,967	538,939	548,423	544,330	551,616	566,366	558,325	555,662
NW Ports Market Share	7.6%	5.7%	7.7%	7.8%	8.4%	8.9%	8.3%	8.4%	8.6%	8.5%	8.1%	7.9%	8.2%	7.9%	7.8%	8.0%

Source: DfT Maritime Statistics

The statistics presented in Table 2.5 indicate the extent of the hinterland of the North West Region's ports, both collectively and individually. The analysis is based primarily on DfT Maritime Statistics and the Surveys of the Origins and Destinations of International Traffic. As the latter is based on a 1% sample, the results may be subject to some sampling error for smaller ports.

The analysis shows that in 2003 the North West's Ports handled approximately 21 million tonnes of all GB freight traffic distributed inland. This is out of a national total of 209 million tonnes which we estimate moves beyond the port directly (unlike crude oil, iron ore and other goods consumed or produced in port based industrial plant), and is therefore equivalent roughly to a 10% market share.

Freight to and from receivers and shippers WITHIN the North West region accounts for 41.5% of the NW port traffic, while the Greater London area is also a significant element of regional ports business, especially for RoRo traffic.

The following statistics indicate the nature of the present relationship between traffic generators in the North West region and the North West ports. A summary of the analysis is presented in Table 2.4 below, while detailed regional figures can be found in Table 2.6.

Table 2.5 North West regional freight market by port region, 2003

Million tonnes

Mode	All NW Region Freight	Of which: NW Ports share	
		Tonnes	%
Bulk	13.7	6.3	46.3%
Accompanied HGV	5.9	0.3	4.3%
Unaccompanied HGV	4.3	1.0	23.6%
LoLo	4.5	1.1	24.4%
Total Port traffic	28.3	8.7	30.7%
Rail	0.3	-	7.3%
Grand Total	28.6	8.7	30.4%

Source: MDS Transmodal GB Freight Model

The importance of regional ports in handling bulk traffics is clearly indicated, while it is not surprising that the majority of accompanied trucks are routed through the Dover Straits. In the LoLo sector the regional ports (i.e. Liverpool) are almost as important for North West regional traffic as the Haven ports (i.e. Felixstowe) and significantly more important than the Sussex/Hampshire ports (i.e. Southampton).

Table 2.6 NW Ports – GB Hinterland

Million Tonnes

Mode	PORT	East Midlands	East of England	Greater London	North East	North West	Scotland	South East	South West	Wales	West Midlands	Yorks & Hum	Grand Total
Bulk	BARROW IN FURNESS					0.00							0.00
	ELLESMERE PORT	0.02	0.04	0.35	0.00	0.59	0.01	0.02	0.07	0.01	0.07	0.03	1.17
	HEYSHAM	0.00	0.00	0.01	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.01	0.16
	LIVERPOOL	0.13	0.04	1.45	0.03	4.75	0.05	0.29	0.20	0.10	0.34	0.16	7.54
	MANCHESTER	0.04	0.01	0.06	0.00	0.41	0.00	0.03	0.05	0.02	0.01	0.03	0.66
	RUNCORN	0.01	0.01	0.06	0.01	0.44	0.01	0.01	0.02	0.01	0.06	0.01	0.62
	SILLOTH			0.01		0.02							
WORKINGTON			0.00		0.00								0.01
Bulk Total		0.19	0.09	1.92	0.05	6.32	0.07	0.35	0.35	0.13	0.47	0.25	10.19
Unaccompanied HGV	FLEETWOOD	0.03	0.04	0.26	0.02	0.10	0.00	0.04	0.00	0.02	0.02	0.02	0.55
	HEYSHAM	0.06	0.05	0.28	0.64	0.20	0.02	0.05	0.1	0.02	0.03	0.15	1.49
	LIVERPOOL	0.20	0.22	1.24	0.08	0.70	0.00	0.20	0.04	0.06	0.18	0.15	3.06
Unaccompanied HGV Total		0.29	0.31	1.79	0.74	1.00	0.02	0.28	0.05	0.96	0.23	0.31	5.1
Accompanied HGV	FLEETWOOD	0.02	0.07	0.25	0.00	0.03	0.00	0.05	0.01	0.01	0.01	0.01	0.46
	HEYSHAM	0.06	0.17	0.46	0.02	0.05	0.01	0.09	0.02	0.01	0.02	0.03	0.94
	LIVERPOOL	0.04	0.13	0.81	0.00	0.17	0.00	0.17	0.03	0.03	0.05	0.03	1.45
Accompanied HGV Total		0.12	0.36	1.52	0.02	0.25	0.01	0.31	0.06	0.04	0.08	0.08	2.85
LoLo	ELLESMERE PORT					0.00	0.00			0.00	0.00	0.00	0.01
	FLEETWOOD					0.00						0.00	0.00
	LIVERPOOL	0.15	0.12	0.22	0.25	1.09	0.14	0.08	0.06	0.10	0.22	0.31	2.75
	MANCHESTER	0.00		0.00		0.00						0.00	0.00
RUNCORN					0.00							0.00	
LoLo Total		0.15	0.12	0.22	0.25	1.09	0.14	0.08	0.06	0.10	0.22	0.32	2.77
Rail	LIVERPOOL				0.00	0.02	0.00			0.01		0.00	0.03
Rail Total					0.00	0.02	0.00			0.01		0.00	0.03
Grand Total		0.74	0.89	5.44	1.06	8.69	0.24	1.02	0.52	0.37	1.00	0.95	20.94

Source: MDS Transmodal Ltd GB Freight Model

Table 2.7 North West regional freight market

Million Tonnes

Mode	Port Region	Cheshire	Cumbria	Greater Manchester	Lancashire	Merseyside	North West Total
Bulk	Bristol Channel	0.06	0.08	0.07	0.01	0.12	0.33
	Dover Straits (inc Ramsgate)	0.00	0.00	0.01	0.00	0.00	0.02
	E Scotland	0.22	0.25	0.06	0.04	0.12	0.69
	Great Yarmouth	0.01	0.00	0.01	0.00	0.00	0.02
	Haven	0.03	0.05	0.08	0.02	0.05	0.23
	Humber	0.40	0.32	0.60	0.34	0.88	2.53
	Lancs & Cumbria (NW)	0.63	0.07	0.73	1.37	3.53	6.33
	NE England	0.26	0.13	0.25	0.11	0.63	1.38
	Other				0.00		0.00
	Sussex & Hants	0.06	0.05	0.07	0.03	0.08	0.29
	Thames & Kent	0.06	0.01	0.05	0.04	0.04	0.2
	W Scotland	1.02	0.00	0.40	0.01	0.01	1.44
	Wash & NE Anglia	0.01	0.01	0.02	0.01	0.02	0.06
	West & N Wales	0.00	0.00	0.01	0.01	0.01	0.03
West Country	0.08	0.03	0.03	0.00	0.01	0.15	
Bulk Total		2.83	1.00	2.37	2.00	5.48	13.68
Accompanied HGV	Dover Straits (inc Ramsgate)	0.99	0.11	1.34	0.70	0.85	3.99
	Haven	0.07	0.00	0.06	0.03	0.05	0.22
	Humber	0.01	0.01	0.06	0.03	0.03	0.14
	Lancs & Cumbria (NW)	0.02	0.00	0.02	0.02	0.18	0.25
	NE England	0.00		0.00	0.00	0.00	0.00
	Sussex & Hants	0.13	0.01	0.14	0.03	0.10	0.40
	Thames & Kent	0.00	0.00	0.00	0.00	0.00	0.01
	W Scotland	0.11	0.02	0.05	0.04	0.17	0.38
	West & N Wales	0.16	0.00	0.05	0.02	0.20	0.43
West Country	0.02	0.00	0.02	0.00	0.01	0.60	
Accompanied HGV Total		1.50	0.15	1.76	0.88	1.59	5.88

Table 2.7 (cont'd)

Mode	Port Region	Cheshire	Cumbria	Greater Manchester	Lancashire	Merseyside	North West Total
LoLo	Bristol Channel	0.04	0.00	0.00	0.00	0.00	0.05
	Dover Straits (inc Ramsgate)	0.00	0.00	0.01	0.00	0.01	0.03
	E Scotland		0.00	0.00		0.01	0.01
	Great Yarmouth	0.00					0.00
	Haven	0.30	0.05	0.51	0.17	0.29	1.32
	Humber	0.12	0.01	0.39	0.23	0.13	0.84
	Lancs & Cumbria (NW)	0.39	0.02	0.23	0.12	0.33	1.09
	NE England	0.00	0.03	0.03	0.00	0.00	0.07
	Other			0.00			0.00
	Sussex & Hants	0.09	0.03	0.33	0.12	0.11	0.67
	Thames & Kent	0.11	0.02	0.18	0.05	0.06	0.41
	W Scotland	0.00	0.00			0.00	0.00
	West Country	0.00		0.00			0.00
LoLo Total		1.06	0.15	1.65	0.70	0.94	4.49
Unacc. HGV	Dover Straits (inc Ramsgate)	0.02		0.00	0.00	0.01	0.04
	Haven	0.25	0.01	0.10	0.06	0.09	0.51
	Humber	0.28	0.04	0.07	0.55	0.39	1.92
	Lancs & Cumbria (NW)	0.32	0.01	0.15	0.13	0.40	1.00
	NE England	0.00	0.05	0.01	0.01	0.01	0.08
	Sussex & Hants	0.01	0.00	0.01	0.00	0.00	0.02
	Thames & Kent	0.16	0.00	0.03	0.02	0.04	0.26
	W Scotland		0.00		0.00		0.00
West & N Wales	0.20		0.01	0.01	0.22	0.44	
Unaccompanied HGV Total		1.24	0.12	0.99	0.78	1.15	4.26
Rail	Lancs & Cumbria	0.00	0.00	0.00	0.00	0.01	0.02
	Rail terminal	0.11	0.01	0.06	0.02	0.04	0.24
Rail Total		0.11	0.01	0.06	0.03	0.06	0.26
Grand Total		6.74	1.44	6.80	4.38	9.22	28.57

Source: MDS Transmodal Ltd GB Freight Model

2.5 Port Markets: Containers

The growth in container traffic through GB ports matches the expansion in British imports of consumer and semi-manufactured goods. The long-term growth in import container traffic has been double that of GDP and far more rapid than internal freight growth. In recent years growth has been driven by globalisation of the world economy, as manufacturing capacity shifts towards the Far East and, in particular, China. For this reason the Far East-Europe and trans-Pacific trade routes have become the most important in the world in terms of volumes.

The overall growth in container shipping was not matched by a significant increase in the size of the largest ships until the late 1980's because owners were unwilling to order ships that could not pass through the Panama Canal. However, that threshold was passed 15 years ago. There are now some 300 ships trading of above 4000 TEU capacity, the typical maximum for a panamax vessel. Post-panamax vessels now dominate the major world trade routes and there is a general view in the industry that ships of around 12,000 TEU capacity could be ordered soon. Currently, the largest ships trading can load around 8,000 TEU, and there are ships on order of up to 10,000 TEU capacity. On the basis of ships currently on order, we have calculated that the mean capacity of the world's largest 200 container ships in 2008 will be some 8,300 TEU, as compared with just 5,000 TEU as recently as 2000.

The direct impact on shipping of trade growth with the Far East is that the deep sea shipping lines have placed orders for a large number of vessels over 8000 TEU. The profile of newbuildings by TEU capacity in July 2004 is shown below.

Table 2.8 Container ships on order for delivery 2004-09, by TEU capacity

TEU capacity	No. of ships	% Ships on order	Thousand TEU	% Capacity on order
0-1199	74	10%	69	2%
1200-1999	59	8%	92	4%
2000-2999	124	18%	329	11%
3000-3999	45	7%	148	5%
4000-4999	109	16%	467	16%
5000-5999	75	11%	397	13%
6000-6999	37	5%	236	8%
7000-7999	25	4%	191	6%
8000-8999	108	16%	882	29%
9000+	21	3%	196	7%
Total	677	100%	3008	100%

Source: MDS Transmodal Containership Databank

This shows that in July 2004 deep sea lines had 129 vessels over 8000 TEU on order and 95% of these vessels are due for delivery by the end of 2007. The arrival of these very large

containerships puts very considerable pressure on the infrastructure capability of European ports in terms of depth of water, crane outreach and container stacking areas.

The Europe-North America route, which is of significance to the Port of Liverpool, has been shielded from the need to cater for very large containerships because of the importance of the US east coast market and the limited draft available in East Coast North American ports. New York, the leading such port, can only accommodate ships of around 12.5m draft as compared with the 14.5m required by the world's largest ships. As a consequence, North Atlantic services tend to be 'self-contained', unlike those on most other world routes. This has served to protect Liverpool in its niche trans-Atlantic trades, given that it offers only 12.8 metres of water.

Major dredging programmes at East Coast North American ports may eliminate this 'isolationism'. A programme to increase depth in New York and other ports to accommodate 14.5m draft vessels over wide tidal windows will open the opportunity for the world's largest ships to trade between the Far East and the East Coast of North America via the Mediterranean and N.W. Europe. Low trade growth alone may not be sufficient to discourage lines from operating larger post-panamax vessels within the North Atlantic. Owners may not wish to build smaller ships because of their trading inflexibility (few ships remain on the same route throughout their lives). There may also be an opportunity on the GB west coast for some operators to deploy post-panamax vessels to trade between the Far East, Mediterranean, Irish Sea and East Coast North America ports without otherwise making a direct call in NW Europe, as ship sizes increase, major US east coast ports are dredged and particularly if the Panama Canal is widened to allow post-panamax round the world services.

Table 2.8 describes container traffics through GB ports. The mean growth rate for net domestic UK Lolo containers over the 11 year period covered was around 5.2% p.a. Taken together with containers carried on RoRo ships, the compound annual growth rate appears to be approximately 5.7% between 1992 and 2003. However, this growth has only been accommodated over recent years by a halving in third country transshipment traffic at South-east UK ports and an increase in the volume of containers handled outside of the UK south-east. There has been more or less no growth of throughput in the four south-east ports between 2000 and 2003 (+1%) while estimated total domestic GB LoLo traffic (i.e. cargo with a GB trip end) has grown by 11%. Short sea LoLo traffic has also stalled, reflecting to some extent a transfer of cargo to RoRo containers and to trailers. By contrast, overall, LoLo terminals beyond the south-east have recorded a growth of 17%, traffic growing from 930K containers (4,184K-3,254K in 2000) to 1,084K in 2003. Growth at the Port of Liverpool has been of the order of 4.1% over the same period, and has grown to become the UK's fourth largest container port, handling 365,000 units (approx. 4.2 million tonnes of goods) in 2003.

Table 2.9 GB port container traffic 1992-2003

Thousand units

	1992	1995	1997	1999	2000	2001	2002	2003	% compound annual growth rate 1992-2003
<i>Major South East Ports:</i>									
Felixstowe	1,057	1,345	1,600	1,826	1,857	1,855	1,715	1,585	3.75
Southampton	322	471	591	603	684	734	791	846	9.18
Thamesport	129	210	257	320	324	308	325	314	8.42
London	329	296	344	464	389	468	528	544	4.68
Sub-total	1,837	2,322	2,792	3,213	3,254	3,365	3,359	3,289	5.44
<i>Other Ports:</i>									
Liverpool	229	262	303	325	334	331	309	356	4.09
Forth	51	58	64	66	79	90	103	111	7.33
Hull	175	174	146	142	163	128	88	153	-1.21
Goole	20	41	69	69	70	70	51	18	-0.95
Greenock	6	16	17	22	29	31	33	45	20.1
Tees	80	182	168	148	28	48	74	82	0.22
Bristol	16	52	19	27	32	48	55	58	12.42
Immingh'm & Grimsby	91	126	158	171	42	43	108	68	-2.61
Other	362	233	138	128	153	166	183	193	-5.56
Total	2,865	3,466	3,873	4,311	4,184	4,320	4,363	4,373	3.92
<i>Of which:</i>									
Coastwise**	163	132	137	132	153	218	205	189	1.35
Short Sea**	1,204	1,469	1,538	1,716	1,702	1,696	1,724	1,716	3.27
Deep Sea	1,498	1,865	2,198	2,463	2,220	2,284	2,319	2,368	4.25
Unspecified:		-		-	109	122	115	100	
Sub Total	2,865	3,466	3,873	4,311	4,184	4,320	4,363	4,373	3.92
of which lo-lo	2,671	3,227	3,486	3,898	4,184	4,320	4,363	4,373	4.58
Estimated transhipped****	(392)	(462)	(597)	(636)	(740)	(786)	(700)	(400)	0.18
Net domestic GB lo-lo containers	2,279	2,765	2,889	3,262	3,581	3,660	3,793	3,973	5.18
Slave trailers carrying ro-ro* containers	inc. above	inc. above	inc. above	inc. above	361	344	348	374	
Estimated domestic GB ro-ro + lo-lo containers***	2,473	3,004	3,276	3,675	4,122	4,176	4,315	4,534	5.67

Based on DfT Maritime Statistics

* note that a change in definitions has 'transferred' some containers from 2000 onwards into this category. Slave trailers: trailers designed to move between the quay and a ship, and in some circumstances to travel with the ship.

**Coastwise traffic is estimated by determining the proportion of NI port traffic which is with GB ports and deducting this from the UK coastwise total. A corresponding adjustment is made to short sea traffics to remove NI ports traffic recorded under a UK total. In this context, coastwise is taken to mean container movements between GB mainland ports or to small offshore islands

*** Based on 1.5 containers per slave trailer

**** Transhipped: in this context, containers lifted from one ship onto a quay and subsequently onto another ship, and not entering the domestic economy through the port in question (it follows that a transhipped container 'scores' twice in terms of port throughput while a domestic container scores only once, even though both take up storage space within the port).

For UK ports overall, the growth both in trade and ship sizes represents a major challenge, as port development has not kept pace, largely because of the strict planning conditions imposed by Government, especially in South East England. The UK's major existing deep sea container ports are located in the South East – principally Felixstowe and Southampton (36% and 19% of GB LoLo traffic respectively in 2003). These ports are capacity constrained and regional east coast and west coast ports, including Liverpool, have been benefiting from an increase in feeder activity to avoid this congestion.

ABP's application at Dibden Bay failed and, while Felixstowe South is likely to obtain planning permission, Bathside Bay may not on environmental grounds. It is not clear that the consent which the Secretary of State is 'minded' to grant for deep sea container berths at London Gateway will be supported in reality by the shipping industry. The Secretary of States 'provisional' consent for their construction was granted in July 2005, subject to P&O Ports (the potential developer) reaching an agreement with the Secretary of State on a contribution towards enhancing the local highway network to provide additional capacity. There may, therefore continue to be a shortfall in capacity in South East England in the medium to long term, despite the minded planning consent for London Gateway. The minded consent is likely to have been influenced, at least to some degree, by the need to regenerate the Thames Gateway and this could provide a positive precedent for any planning inquiry at Liverpool.

While transshipment on the Continent has been a traditional route for some GB import and export containers (particularly to and from Scotland), growth in traffic through northern British ports since 1999 is likely to have been due to this congestion in the south-east ports. The lack of deep sea container capacity in the South East of England is demonstrated by the increase in the number of feeder services to "regional" ports and the investments being made by feeder ports in new capacity.

It is within a context of rapid trade growth, tightening capacity in South East England plus the planned deepening of access to North American ports such as New York and the possible widening of the Panama Canal to accept the largest containerhips that Liverpool is considering whether it should develop new post-panamax container berths at Seaforth.

Another important trend is the increasing use by shipping lines of high cube (9 foot 6 inch high) containers. This has significant implications for the inland distribution of these containers by rail, given the GB rail network's restricted loading gauge. An increasing percentage of containers handled at Liverpool are likely to be high cube, but the Bootle Branch Line (with its W9 loading gauge) cannot carry these boxes on standard intermodal wagons. The West Coast Main Line and the route to Felixstowe via London are at a more generous loading gauge (W10).

2.6 Port Markets: Roll-on Roll-off

Market structure

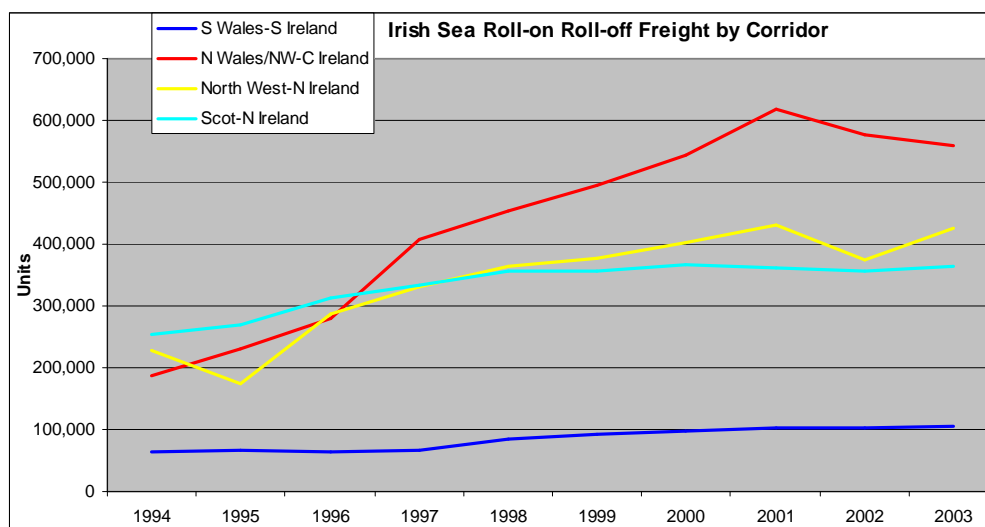
In terms of the North West ports, RoRo traffic is almost totally a function of the Irish Sea market. The market has traditionally been divided into three distinct geographic corridors:

- The Northern Corridor: routes between SW Scotland/NW England to Northern Ireland;
- The Central Corridor: routes from North Wales/NW England to all of Ireland;
- The Southern Corridor: routes between South Wales and the Republic of Ireland.

In the freight market in particular all of these services are, to a greater or lesser extent, in competition with each other. The Central Corridor routes via Liverpool, Birkenhead and Holyhead compete not only with each other, but also experience competition from the Scottish routes via Loch Ryan (i.e. via Stranraer and Cairnryan). The Loch Ryan routes have historically been the major routes between England and Ireland for accompanied freight. The Southern Corridor routes serve a niche freight and passenger market between the southern counties of the Republic and Southern Britain, with a high proportion of Ireland-Continent landbridge traffic.

Growth in the market was significant during the 1990s, driven particularly by strong economic growth in the Republic of Ireland, the “peace dividend” in Northern Ireland and greater integration of the EU economy.

Figure 2.4



In the freight market, the Central Corridor routes have won market share at the expense of the Northern Corridor, which has been the traditional route for accompanied freight as it was

the only route that allowed hauliers to make overnight deliveries in the Belfast and Dublin areas also avoiding (in the past) high labour costs for using the Port of Dublin. The Mersey routes (both Langton Dock and Twelve Quays) have taken market share from the Northern Corridor for the following reasons:

- New facilities: Twelve Quays has provided the Mersey with riverside berths that, coupled with faster modern conventional ferries, allows Liverpool to target overnight accompanied truck traffic.
- Improvement in industrial relations at both Liverpool and Dublin: until the late 1990s a significant proportion of traffic bound for the Republic of Ireland used services to Belfast and Larne in Northern Ireland to avoid Dublin and Liverpool.
- Diesel prices: the differential in diesel prices between the United Kingdom and the Republic has led to Northern Irish hauliers increasingly operating via Dublin to take advantage of cheaper fuel. This makes all the ROI routes more attractive at the expense of the routes from Belfast and Larne.
- Geographic advantages: the Central Corridor provides the most direct ferry links between the major UK centres of population and production and the largest Irish market (i.e. Dublin); the Ports of Dublin, Liverpool and Holyhead provide deep-water facilities and can accommodate the largest ferries; hinterland connections to these GB ports are superior to those to the Loch Ryan routes.

Essentially technical/operational improvements and the end of market distortions such as poor industrial relations have allowed freight traffic to return to the most direct routes to Ireland, via the Central Corridor.

The growth in freight traffic through the Central Corridor has encouraged investment by a number of operators in new port facilities and ships. At Holyhead, Irish Ferries and Stena Line have introduced new multi-purpose ferries that have increased freight capacity. The Port of Mostyn developed a competing RoRo facility on the Dee Estuary, although the service closed due to siltation of the berth, but the situation may alter if new dredging licences are awarded. However, major investments have been made on the Mersey, with the development of the Twelve Quays facility at Birkenhead.

These developments have allowed major distributors of cargo to change their routing arrangements between the UK and the Republic. A substantial proportion of the freight growth to Ireland has been a result of British retailers' expansion into Ireland, both north and south. Distribution to their retail outlets has traditionally been undertaken from Scottish Regional Distribution Centres (RDCs), utilising services from SW Scotland because only these services, with their more frequent and shorter crossings, could guarantee overnight despatch and early morning deliveries to supermarkets. With services from Liverpool and Holyhead increasing in quality and frequency, many retailers have started to service their Irish retail outlets from North West RDCs. RDC development may be attracted to NW ports to serve Ireland and NW England simultaneously.

During the period 2001-03 the ROI economy was more sluggish than in the 1990s and traffic growth on routes to the Republic slowed just as many of the operators were adding additional capacity at Holyhead, Mostyn and on the Mersey. This led to over-capacity in the market and intense competition on rates as operators sought to maximise capacity utilisation. Reports in the trade press have suggested that in 2003 rates were 30% lower than in 1993, without taking into account inflation. This resulted in Cenargo (owners of Norse Merchant Ferries - NMF) going into administration due to the Group's inability to service its debt; it also contributed to P&O Group's decision to rationalise its services on the Irish Sea and seek to sell both its Fleetwood-Larne and Liverpool-Dublin routes to Stena. NMF has now emerged from administration.

Table 2.10 Irish Sea RoRo services, January 2005

Corridor	Operator	Service	Number of ships	Annual capacity (million lane metres)
Central	Norse Merchant Ferries	Heysham-Dublin	2	0.8
	Norse Merchant Ferries	Liverpool-Dublin	2	1.3
	Irish Ferries	Holyhead-Dublin	2	3.5
	P&O	Liverpool-Dublin	2	1.4
	Stena Line	Holyhead-Dublin	1	2.5
	Stena Line	Holyhead-Dun Laoghaire	1	0.8
South	Stena Line	Fishguard-Rosslare	1	0.7
	Irish Ferries	Pembroke-Rosslare	1	1.5
	Swansea Cork Ferries	Swansea-Cork	1	0.1
North	Norse Merchant Ferries	Heysham-Belfast	3	1.0
	Norse Merchant Ferries	Liverpool-Belfast	2	1.5
	P&O	Cairnryan-Larne	3	5.1
	P&O	Troon-Larne	1	0.7
	Sea Truck	Heysham-Warrenpoint	2	0.6
	Stena Line	Fleetwood-Larne	3	1.5
	Stena Line	Stranraer-Belfast	2	2.0
Total			29	24.9

Source: MDS Transmodal Containership Databank

Table 2.9 provides an analysis of routes and capacity in the Irish Sea RoRo market in January 2005. The freight market now appears to be more stable, with four major operators (P&O Irish Sea, NMF, Irish Ferries and Stena Line) and a niche operator in Sea Truck between Heysham and Warrenpoint which is itself investing in new vessels for the first time. Reports from the market indicate strong traffic growth to both the ROI and Northern Ireland in 2004. Against this background the Port of Liverpool has secured a Harbour Revision Order to develop a riverside berth outside the lock gates at Langton to provide the same quality of service as now available at Twelve Quays.

*Market size and NW Ports market share***Table 2.11 GB-Ireland RoRo market (“major ports”) 2002 and 2003**

Thousand units

	2002			2003		
	Accomp	Unaccomp	Total	Accomp	Unaccomp	Total
Liverpool	119	296	415	113	279	392
Heysham	37	216	253	27	297	324
Cairnryan	115	64	179	126	67	193
Stranraer	103	19	122	99	18	117
Fleetwood	43	77	120	41	84	125
Holyhead	176	39	215	190	41	231
Fishguard	24	9	33	25	11	36
Milford Haven (Pembroke Dock)	33	25	58	34	27	61
Total	650	745	1,395	655	824	1,489

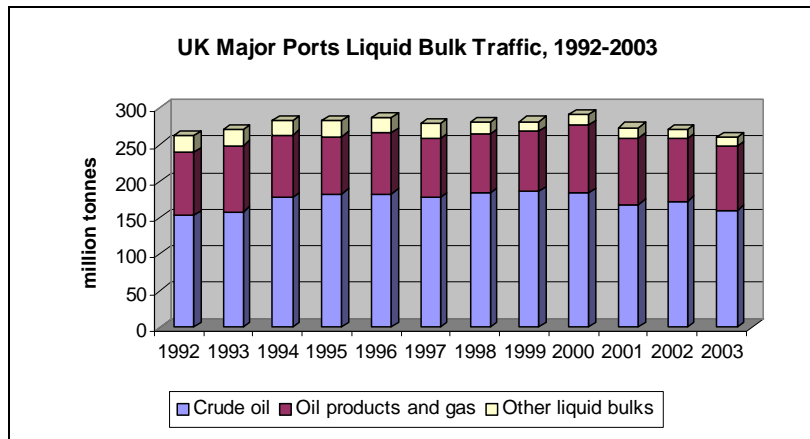
Source: DfT Maritime Statistics

Table 2.10 provides an analysis of the GB-Ireland RoRo market in 2003, which had a market size of about 1.49 million units, 45% of which was accompanied and 55% unaccompanied. Overall growth was 6.7% from 2002, with the unaccompanied growing much faster at 10.5%, reflecting an increasing preference for the longer crossings. The accompanied traffic tends to be concentrated on the shorter crossings from Loch Ryan and Holyhead (34% and 29% shares respectively).

Liverpool had a 26% overall market share and Heysham 22%. Their respective shares of the unaccompanied market was even greater at 34% and 36%, demonstrating the two Ports' relative strengths in the unaccompanied market with their longer sea routes between the major markets of NW England and the Dublin/Belfast areas. This minimises road distribution costs for slower-moving traffic. Fleetwood retained an 8% market share in 2003. Two-thirds of its traffic is unaccompanied, reflecting again the preference for slower moving traffic on this route. Liverpool's decline in traffic between 2002 and 2003 was largely due to the administration of Norse Merchant Ferries, which reduced its ferry capacity from the port.

2.7 Port Markets: Liquid bulks

The importation of crude oil and petroleum products, including coastal shipping of oil products, is one of the major port markets, albeit one with little growth. It is the single largest sector of trade for the ports of Liverpool and Manchester, Liverpool handling 11-12 million tonnes a year and Manchester 6-7 million tonnes. Workington also acts as a regional distribution centre for petroleum products through the Simon Storage tank farm. Other liquid bulks handled in the region include a range of chemicals (Manchester and Liverpool), vegetable and edible oils (Liverpool) and molasses (Liverpool and Sillioth).

Figure 2.5

The principal regional traffic flow is of crude oil brought into the Tranmere Terminal at Birkenhead. The oil is transported by pipeline the 15 miles to Shell's Stanlow refinery, where finished products such as jet fuel, petrol, diesel, fuel oil, bunkers and other products are made. Stanlow is the third largest of Shell's 53 refineries worldwide and has recently been the subject of investment totalling £75 million. This is to enable the refinery to produce low sulphur 'clean' fuel. Some of the refinery's products are taken out by sea, but a large proportion is transferred by pipeline direct to customers throughout the UK.

The bulk liquid business is heavily dependent on the provision of specialised facilities and investment in permanent structures, which cannot easily be moved. These are effectively "captive" traffics for the ports concerned.

Market prospects

As far as development of the main markets for crude oil and oil products is concerned, the overall market trend in the UK has been down in recent years, although volumes through Liverpool have remained steady. Prospects for Tranmere are expected to be in line with import volumes, i.e. steady but not spectacular. The considerable investment made by the Port of Liverpool at its Tranmere facilities and by Shell at Stanlow illustrates the long-term commitment that is required to this particular trade and considerable barriers to entry for any potential competitor or new entrant to the trade in the North West.

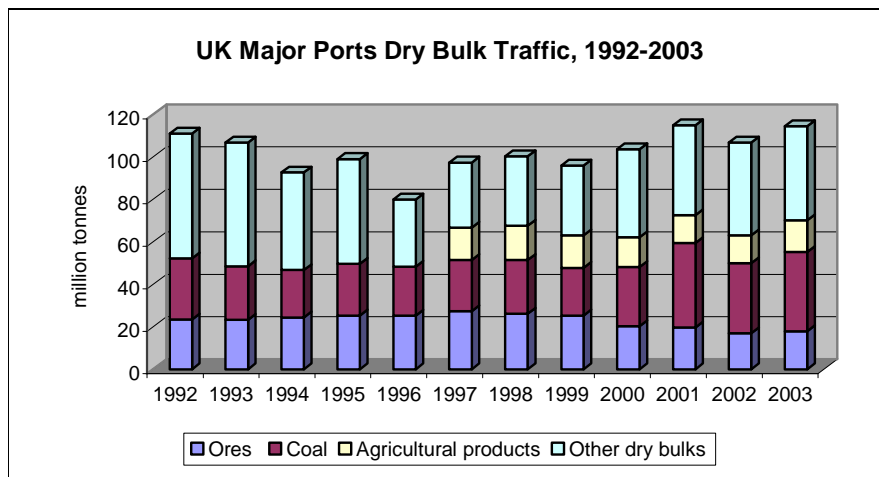
The development of other traffics also depends on specific investment such as that by SVG Intermol at Liverpool Gladstone/Huskisson Dock for the expansion of storage facilities for food grade phosphoric acid and by Caltech in its new bulk molasses plant at Silloth.

2.8 Port Markets: Dry bulks

The sector includes a diverse range of products. Coal, scrap metal, cereals and animal feedstuffs, ores and minerals and bulk chemicals are among the major commodities handled. Dry bulk materials tend to be high volume, slow moving products and ideally suited to longer sea transits which bring commodities closer to the point of consumption and lower inland distribution costs. Such products require large storage areas or facilities such as temperature-controlled sheds and warehousing.

The national growth trend in dry bulk traffic has been a modest 1% per annum in the last ten years.

Figure 2.6



Note: Agricultural products not separately identified pre 1997
 Source: DfT maritime statistics

Coal

Coal is one of the major components of this market sector and is associated mainly with imported coking coal used in steelmaking and steam coal used in power generation. In the North West it is the latter traffic that features as a major component of port traffic at Liverpool and is specifically related to Powergen’s Gladstone Dock coal terminal. This was built in the 1990s to provide an import facility for coal to its power stations and especially the Fiddlers Ferry facility near Widnes. Most coal is now sourced through Colombia and South Africa, although Russian coal volumes are increasing. The volume brought in through Liverpool reached 3 million tonnes in 2003, representing about 8% of UK coal imports.

Market prospects

Because of the large volumes and distances involved, the major sources of imported coal being located in Australia, South Africa and South America, the trade utilises the very largest

bulk carriers in seaborne trade. In the North West only Liverpool offers sufficient depth required by Panamax bulk carriers (50-80,000 dwt), but is unable to accommodate the largest Capesize bulkers (100-150,000 dwt). The port is therefore open to competition from rail linked deep water ports such the Humber International terminal (HIT) at Immingham and Portbury Dock at Bristol. At Ellesmere Port, MSC is developing a coal terminal to receive coal transhipped forward by coastal shipping from Hunterston as a substitute for long distance rail transport.

The Fiddlers Ferry power station will be decommissioned by 2015 unless new investments are made because of its non-compliance with 'Kyoto' conditions. Its continued demand on local ports will depend on such investment.

Agribulks

The agribulk market, including cereals animal feedstuffs (AFS) is important for several of the North West's ports with their agricultural hinterlands. The total market averages around 15 million tonnes a year, with a downturn in 2001-2 associated with the foot and mouth crisis.

For Liverpool, this sector is second in importance only to the container trades. The port handles around 2.5 million tonnes of agricultural products a year, giving the port a 16% market share. Other leading national ports in this sector are London and Belfast, and in some respects Belfast's strength is also complementary to Liverpool as several carriers multiport between Liverpool and Belfast. The port of Liverpool has made major investments at Seaforth for handling these products and again, such investments have been backed up by long-term contracts with customers like Cargill, which operates dockside crushing and refining plants and is investing in a plant to supply the snack food industry and Arkady Feed where MDHC has invested £5.5 million in a new 23,000 m² AFS warehouse.

Agribulks, including fertilisers, are also a significant feature of traffic at Garston which competes with Liverpool and Workington to an extent for this traffic, although Workington provides a satellite distribution point for AFS to Cumbrian animal feed producers. The most permanent feature of Silloth's traffic continues to be specially selected bulk grain (40,000 tonnes annually) discharged directly into Carr's Flour Mills Ltd, located within the port. Carr's Fertilisers creates another regular inward traffic of fertilisers in bulk and bags (60-70,000 tonnes per annum).

Market prospects

It is a straightforward matter to handle bulk grain and AFS and certainly for the smaller size of ship carrying these products all NW ports are competitors for this traffic in theory, but unless they have the storage available, the product will have to be transported to storage and thence to processing facilities adding to costs. Ports that have or are able to provide such facilities in the future will have a competitive advantage. However, long-term

contractual commitments between ports and their customers mean that these commodities are no longer as footloose as they once were.

In terms of seaborne trade and the sizes of ship involved, the nature of the trade favours the use of Panamax bulk carriers in order to achieve the relative economies of scale. Although Bristol can also handle Panamax bulk carriers, Liverpool has a strong geographic advantage on the west coast to serve the North West region.

Whereas overall growth in the total dry bulk market has been slow, the market prospects for growth in the AFS market sector are good and double-digit growth is expected in the next five years. This is aided by the fact that in terms of local demand for AFS, the 'national herd' is estimated to be moving into (i.e. expanding in) the North West region at a rate of approximately 2% per year.

2.9 Summary of conclusions

The ports industry plays two key roles for the regional economy. On the one hand, the regional ports business constitutes a means of wealth creation in its own right, creating revenue and employment from handling goods from both the North West region and elsewhere. On the other hand, the national ports industry provides a gateway for goods entering and leaving the region. In this context, regional ports are in competition with ports elsewhere, while the region itself is in some respects dependent upon the inland infrastructure used to reach each port.

In 2003 GB ports handled some 539 million tonnes of cargo and total tonnage has increased by an average of 1% per annum since 1990. However, most of the growth has been due to unitised cargo, which has grown by 5.2% per annum, while bulk traffics have grown by only 0.5% per annum.

North West ports handled 45 million tonnes of cargo in 2003, which represents 8.2% of total GB port traffic. However, of the total traffic distributed inland from GB ports, North West ports handled 21 out of 209 million tonnes (10.0%).

Of the 28.6 million tonnes of international freight generated in the North West region in 2003, about 30% of this freight was handled through NW ports. This is because, while NW ports handle a high proportion of the region's international bulk freight, South East ferry services carry the vast majority of the region's Continental imports and exports and its deep sea imports and exports are handled at South East deep sea container ports, as well as Liverpool.

With rapid growth in deep sea containerised freight due to import substitution with goods manufactured in the Far East and, in particular, China and increasingly tight deep sea

container port capacity in South East England there may be an opportunity to develop post-panamax container berths at the Port of Liverpool.

The other source of rapid traffic growth through North West ports has been Irish Sea RoRo traffic, with most growth focussed on Liverpool and Heysham.

3. POLICY ANALYSIS

3.1 Introduction

This chapter sets out the policy environment within which the North West ports operate and provides some pointers for future policy trends up to 2025. It provides an analysis of relevant policy issues at each spatial level – European, national, regional and sub-regional - and also makes a distinction between transport policy (which has an impact on modal split and on the development of inland infrastructure) and ports policy (which has a more direct impact on the ports themselves).

3.2 European Policy

European transport policy generally has little direct impact on NW ports, although it tends to define the policy environment within which national policy is determined. However, Merseyside's ERDF Objective 1 status presents the theoretical potential for the Port of Liverpool to receive Structural Funds to develop port infrastructure.

The European Commission's White Paper on transport, published in 2002 and entitled **European Transport Policy for 2010: Time to Decide** is not legally binding, but sets out the rationale for potential future policies and a list of policy initiatives. Environmental concerns are given considerable prominence, particularly given increasing demand for transport and concerns about environmental pollution and congestion in the road sector. Modal shift is to be achieved mainly through economic means rather than regulatory measures. This involves a range of measures from the pricing of transport to revitalising alternatives to road transport and investing in the Trans-European Network. Within this context, short sea shipping is seen as one of the potential solutions to the growing issues of environmental pollution and road congestion. The Commission suggests that "sea motorways" should be developed, which have now become part of the Trans-European Network. Short sea shipping was given greater emphasis than in previous Commission documents, which appears to reflect the Commission's increasing frustration with the inability of the European railways to provide an efficient and competitive alternative to long distance road haulage.

The EU **Green Paper on Sea Ports and Maritime Infrastructure** was published in 1997 and emphasised the importance of ports to the European Union's trade and the need for a "modern, efficient and competitive European port sector...which enables maritime transport to be integrated, together with other transport modes, into the transport chain". The Commission recognised in its Green Paper that "The completion of the internal market and the existence and further development of inland transport networks across Europe has intensified competition among ports significantly, particularly competition aimed at attracting unitised transshipment cargo". The Commission argued that this greater international competition between ports requires a more co-ordinated approach to port development at

EU level, which is likely to include greater transparency of public sector funding and a move towards a “user pays” approach. There is some policy support for the development of port infrastructure to support regional development in ERDF Objective 1 regions but even in these regions, “A balance will have to be struck between regional policy objectives and the need to avoid distortion of competition between ports”.

The main policy proposal that was put forward as a result of these observations on ports was the **EC Port Services Directive**, which is designed to liberalise the port services market by introducing a common solution to all European ports. UK ports have argued strongly that improved competition within ports was not necessary as there was such strong inter-port competition. There is an on-going study being carried out for the RDAs on the potential impacts of the Directive on the English regions and their ports.

The 2002 Transport White Paper reiterated the principles of a user pays system (taking into account wider costs, such as congestion and environmental pollution) for transport infrastructure, which was originally set out in the 1998 White Paper entitled **Fair Payment for Infrastructure Use: a phased approach to a common transport infrastructure charging framework in the EU**. In this Green Paper, the Commission argued there is a lack of consistency in the way users are charged for the different transport modes, with very little attention being paid to the environmental and other external costs of transport. A policy should be developed so that users of transport infrastructure pay for the full external costs. This is likely to mean that all road users should be paying higher charges for their use of the road network due to the environmental pollution and congestion they cause. If such a policy was ever introduced, it could radically improve the economics of coastal/shortsea shipping and have an impact on traffic levels through ports. Germany has already introduced such a system for its motorway network (although at present tariffs are modest) and the UK Government had intended to introduce a similar system for its whole road network in 2008. That plan has now been shelved in favour of a more comprehensive road pricing scheme for all vehicles which ‘may’ be introduced in around 10 years. The European Commission is therefore trying to introduce common standards for the technology throughout Europe so that a pan-European system can be introduced in due course. The precise impacts of this policy on shipping and ports in NW England is difficult to assess at this point. As a general rule, however, increasing the comparative cost of road transport should, at least at the margin, lead to de-concentration of cargo on the larger ports, with cargo being carried further by sea to ports located closer to its origins and destinations. It should also lead to modal shift of traffic through Liverpool from road to rail and the more extensive use of maritime feeder services.

European Regional Policy

The **European Regional Development Fund** provides funding to “promote harmonious development“ of the EU and to “narrow the gap between the development levels of the various regions”. 75% of the funds available from ERDF are targeted on Objective 1 areas

where GDP is below 75% of the Community average. Eligible areas for Objective 1 include Merseyside and Wirral and so ERDF funding is, in theory, relevant to port development in NW England, particularly as the 2000-06 Programme focuses on providing infrastructure (particularly transport infrastructure) as well as “softer” measures.

As North Wales is also an Objective 1 area, £3.5 million of ERDF funding, administered by the National Assembly for Wales, was provided to the Port of Holyhead in 2002 to part-fund the construction of a berth for a larger multi-purpose ferry it introduced on the Holyhead-Dublin route in 2003, with the wider economic aim of helping to regenerate Holyhead and Anglesey. On Merseyside, as far as we are aware, the Port of Liverpool has not received ERDF funding in recent years, principally because of the argument that it would lead to a distortion of competition between ports (following general UK ports policy).

The EU Wild Birds and Habitats Directive

The EU Wild Birds Directive (Council Directive of 2 April 1979 on the conservation of wild birds 79/409/EEC) and the EU Habitats Directive (Council Directive of 21 May 1992 on the conservation on natural habitats and of wild fauna and flora 92/43/EEC) were drawn up to maintain biodiversity within the European Union. They include measures to plan for the conservation of natural habitats, encouraging the management of these habitats and establishing a coherent network of Special Areas of Conservation (SAC). The EU Birds Directive introduced the designation of Special Protection Areas (SPA), which again provides particular planning protection to sites that might be affected by port development proposals although these are not aimed at singling out ports but any potentially damaging operations. There is likely to be a strong planning presumption against any port development, which is likely to damage a SAC or SPA, given its biodiversity significance at a European level. In particular, the Habitats Directive requires that any developer proposing a potentially damaging project must demonstrate that there are no less damaging alternatives and that the development is in the overriding public interest. Proposed SPAs and SACs have an even greater level of protection than actual SPAs and SACs and this may have an impact on Liverpool’s proposal to develop post-panamax deep sea container berths at Seaforth.

These Directives have had a major impact on port development in the UK in the recent past as the Inspector at the Dibden Bay inquiry felt forced to recommend rejection of the planning application on the grounds that under EU law he could not be sure there was no alternative to the development which would have resulted in a loss of habitat (even though habitat compensation had been offered by ABP and accepted by English Nature).

3.3 UK Policy

Transport

The present Government's overall transport policy, which underpins much policy related to ports, was first outlined in a White Paper in 1998 entitled **A New Deal for Transport: Better for Everyone**. The White Paper set out the UK Government's philosophy towards the future of transport in the United Kingdom. The objectives of transport policy were stated as being the reduction of environmental pollution and road congestion, while maintaining and improving national and regional competitiveness. There was therefore an emphasis on promoting sustainable and integrated transport for both passengers and freight, thereby balancing environmental sustainability with improved efficiency. Although the White Paper concentrates on issues relating to road and rail transport, it contains some important sections on shipping and ports that have set the agenda for subsequent UK policy. Ports were seen as vital links in the transport chain. UK policy objectives, reflecting the principles of sustainable development, therefore are [to]:

- Promote UK and regional competitiveness by encouraging reliable and efficient distribution and access to markets;
- Enhance environmental and operational performance by encouraging the provision of multi-modal access to markets;
- Make the best use of existing infrastructure, in preference to expansion wherever practicable;
- Promote best environmental standards in the design and operation of ports, including where new development is justified.

The White Paper stated that the diversity of UK ports provides benefits to their customers and the economy and re-iterated its policy decision not to enforce the privatisation of trust ports.

Sustainable Distribution: A Strategy (1999) set out the aim of the Government's freight policy as "to ensure that the future development of the distribution industry does not compromise the future needs of our society, economy and environment", linking the policy directly to the overall aim of sustainable development. The strategy focussed very largely on seeking to improve the efficiency of the road freight distribution industry, arguing that while the UK distribution industry is already highly efficient there is "still substantial scope for improvement" through reducing empty and light running (i.e. road vehicles returning empty following a delivery or not using their full payload) and therefore Government should help industry to identify and pursue further efficiency gains.

The UK Government re-iterated its intention to encourage the use of rail and waterborne freight through grant schemes and set out the proposal to establish the Strategic Rail Authority (SRA), which for the first time gave a public authority the statutory duty to promote

rail freight. Greater emphasis was placed on planning for freight distribution at both regional and local levels, with a commitment to revising planning policy guidance to encourage the shipment of more goods by rail and waterborne transport.

The Government's strategy for a sustainable system of distribution for the UK was summarised as:

- To promote a "Sustainable Market". The market must function effectively, openly and fairly – not only here in the UK but at a global scale.
- To promote integration of the freight transport infrastructure by means of "Strategic Planning".
- To ensure the freight transport industry achieves the Government's social and environmental objectives, by "Raising Standards".

The Government had intended to introduce a distance-based charging scheme for lorries in 2008, but the **Lorry Road User Charge** project, which would have introduced a distance-based system for the taxation of road haulage in the UK, was cancelled in July 2005. This was because the Government is considering introducing a system of congestion-charging for all vehicles (i.e. not just HGVs) at some point in the future.

Assuming the necessary technology is available in due course, the UK appears therefore to be moving slowly towards a system of **congestion charging** (or "road-pricing"), probably in line with the rest of Europe. In its *The Future of Transport White Paper* (July 2004), the Government states that it believes a "mature discussion" is required about congestion-charging and a Government-funded feasibility study concluded that road pricing is becoming technically feasible and certainly will be in the next 10-15 years. Full-scale congestion charging should increase the cost of road haulage so it is paying for all its costs (environmental pollution, cost of accidents, cost of congestion, damage to the road network etc.). This should lead to modal shift to other modes of transport, such as rail and waterborne transport. It would also mean that there was little or no justification for public sector investment in the rail freight network or rail freight operating subsidies on environmental grounds, as full-scale congestion charging would by definition create a level playing field between the modes.

The **SRA Freight Strategy** (2001) set out in more detail how the rail freight industry would deliver the 80% growth in rail freight over the period of the Government's 10 Year Plan. The strategy was based on the principle that growth in rail freight would be market-driven by private sector rail freight operators, but the SRA would facilitate this growth through investment in infrastructure to provide network capacity and improve the economics of rail freight after decades of under-investment in the rail network. A high level of importance was placed on non-bulk rail freight services in delivering the 80% growth target as the bulk market was regarded as being relatively mature. This implied that appropriate network

capacity was required to handle the additional services and the planning system had to assist the development of suitable terminal capacity in all regions.

The specific measures set out in the SRA Freight Strategy to secure the 80% growth included:

- Upgrading the loading gauge for the movement of the “high cube” deep sea containers that are increasingly used by shipping lines;
- Selective network capacity enhancements to allow more train paths for rail freight services;
- The development of an appropriate balance of terminal capacity in each region to service both intermodal and conventional wagon traffic;
- The development of a new operating subsidy scheme to incentivise the controllers of freight (principally shippers, 3PLs and shipping lines) to switch from road to rail.

The SRA Freight Strategy was the first document produced by a Government agency that provided both a target for freight (80% growth in rail freight by 2010) and an outline of the practical measures required to secure this modal shift.

For freight, the **West Coast Main Line Strategy** (2003) recognised that in the original upgrade plan for the WCML under Railtrack there was inadequate capacity work and consequently no viable timetable for freight traffics, both for existing services and for growth. No provision had been made by Railtrack for traffic to grow north of Crewe despite the heavy use of the WCML by freight trains and the important role it needs to play in delivering their 80% growth target. However the final strategy has managed to plan additional growth in freight capacity on the WCML, allocating significant numbers of new paths along the route to freight. The final document states that it will “provide capacity for up to 60-70% more trunk freight paths on the route with provision for longer trains (775m) and increased gauge clearance” (SRA WCML Strategy page 17). It is planned that capacity increases for freight will be achieved by the provision of further infrastructure enhancements, some coupled with renewals.

The other major relevant statement on freight policy concerns the development of new terminals, which could in the future be located on port estates:

“It is essential that new terminals are able to assist, through their siting and design, towards the most efficient utilisation of the WCML, and of connections with the rest of the rail network. It is for the promoter of any new terminal to satisfy himself that his detailed needs can be met from within the route capacity available” (SRA WCML Strategy page 42).

This statement essentially makes two fundamental policy points concerned with the development of new freight terminals. Firstly the location of new terminals to be served by the WCML and their size/design should make the most efficient use of the available

capacity. This includes new terminals being designed for the longest trains planned to operate on the WCML (775m), both in terms of physically accommodating such trains in one movement i.e. sufficient length and number of reception sidings, and of sufficient scale to make such trains viable and feasible, thereby making the most of available freight paths.

The **Railways Act 2005** received Royal Assent in April 2005 and gives effect to the proposals that required primary legislation in the “Future of Rail” White Paper (July 2004). The objective of the Act is to seek to tackle the long-standing structural problems of the railways and most significantly abolishes the SRA, with its strategic and funding responsibilities passing to the DfT. The other key body in the future will be the Office of Rail Regulation (ORR), which remains the economic regulator although there are constraints on the level of track access charges that the ORR can levy to ensure political control of public funds. As regards rail freight, the SRA’s sole power to make or modify financial assistance schemes to secure provision, improvement or development of rail freight is repealed.

Existing UK Ports Policy

Modern Ports: A UK Policy (2000) was published by the then DETR in November 2000 and was the first UK ports policy document for 20 years. It applied the principles of the Government’s integrated transport policy in the context of the ports industry and provided a generally market-focussed, non-interventionist approach. The UK Government saw itself essentially as a regulator of some of the activities of the UK ports rather than dictating whether, where and how investment should be made in the ports.

The Policy Paper stressed that, wherever possible, existing port capacity should be used more effectively, rather than constructing additional infrastructure. However, the Government accepted there may be a shortfall in port capacity in some unit load sectors (deep-sea containers and short sea ferry traffic, mainly in the South East of England) and some capacity expansion may be required. However, this is only likely to be necessary in a limited number of cases. The Policy Paper made it clear that, as a general rule, there should be no public sector investment in UK port infrastructure as this may distort competition between ports. The ports were seen as being an essential part of the wider transport network. The Government is committed to promoting the development of coastal and short sea shipping, including the potential for bulk and unit loads to shift to “coastal highways”. The Government reiterated its general desire to see more freight on rail and its belief that some ports could make more use of the mode. It suggested that any port planning a new development or regeneration scheme should consider the revival of port railheads, although this is only likely to be realistic in a few cases. “Gateway ports” (and those with large volumes of bulk traffic) would be most likely to achieve the necessary economies of scale.

The policy paper also stated that, “Some ports need to increase capacity to meet future demand. This may require substantial new port development in a relatively small number of

cases. Where there is a clear need, we will support sustainable port projects, but each case must be looked at in detail on its merits.”

Emerging Future UK Ports Policy

Planning permission for the **Dibden Bay** deep sea container development near Southampton was refused in April 2004. The Planning Inspector accepted there was demand for additional deep sea container capacity which had to be met, but the decision was based essentially on environmental issues and, specifically, a requirement under EU law to protect sites of international conservation importance and to consider alternatives at a strategic level. The Inspector stated that need should be met in the South East of England, but as there might be alternatives emerging elsewhere he could not say there was no alternative to Dibden Bay.

A policy-related implication of the Dibden Bay decision is that the argument for a more strategic approach to ports planning, rather than considering developments on a case-by-case basis, is likely to gain headway. This view is confirmed by references to ports policy in **The Future of Transport White Paper**, which states that after 2005, “we will take stock of how the ports industry is set to meet the country’s overall needs in the longer term. We will therefore review our policy framework...to take account of issues such as increases in global demand, pressures on port capacity and how to provide adequate inland capacity”. Such an approach is likely to be more consistent with that taken by the Government towards the development of airport capacity.

Inter-regional Policy

A relatively recent policy development has been the publication of the **Moving Forward: The Northern Way**, which was launched in September 2004. The Strategy represents a direct recognition from central government that unlocking the potential of the North is critical to the ongoing growth of the UK economy. The Northern Way aims to transform the North into "extra cylinders" of the UK's economic engine, and clearly states that if the Northern regions enjoyed the same productivity and participation rates as the current UK average then the UK has the potential to be £30bn better off.

The key principle underpinning the Northern Way approach is the reduction of the North's "GVA gap". A GVA (or output) gap is simply a measure of the additional GVA a region would need to generate to move up to the relevant benchmark figure (it assumes that there is no change in that figure). At present, in spite of the strong growth in the last few years the Northern Way regions have the lowest GVA per capita of all the English regions.

The Northern Way Growth Strategy identified 10 headline priorities. Thematic priorities cover skills, enterprise, support for the knowledge base, cluster development, improving transport infrastructure and sustainable communities.

The Northern Way is very clear about the role of transport and transport infrastructure in tackling the GVA gap. The Strategy includes a commitment to produce a Northern Ports Access Plan, which will set priorities for all road and rail infrastructure projects necessary to ensure the continuing growth of the northern ports. This approach is designed to:

- Improve road access to major ports - in Liverpool, the A5036 is an important urban road and links the port of Liverpool to the M57 and M58. The strategy clearly states that: *“A short-term traffic management solution would reduce the conflicts, but in the medium term it will be necessary to build a new road on a different route. This would provide a fast and reliable road link to the port, make a significant contribution to the regeneration of the local community and support the necessary development of a second container terminal at Royal Seaforth Docks”.*
- Improve rail access to major ports – with regards to the Mersey Ports the strategy notes that, *“Investments to enhance the gauge and route capacity of the Trans-Pennine rail route to the Mersey Ports are essential to accommodate the new 9’6” containers. This would allow much of this traffic to be accommodated by northern ports. These investments are essential if freight traffic through the northern ports is to grow (bringing reductions in congestion in the South) and more international container traffic”.*

The Ports Access Plan will inform the assessment of transport investment priorities contained in Regional Spatial Strategies. The strategy will also ensure that Regional Spatial Strategies provide the basis for appropriate development around the major northern ports.

City Regions

The City Regions have been asked to prepare City Region Development Programmes (CRDPs) in order to inform the overall development of the Northern Way strategy. The CRDPs for the three city regions in the North West were launched on the 20th June 2005. The documents provide an indication of the aspirations and priorities which will emerge in relation to the region’s ports and their related infrastructure:

Liverpool. One of the key aspirations is identified as a ‘a well connected city region – the sea and air gateway to the North West, connecting North America, Ireland and Northern Europe through the Liverpool to Hull Northern Way – and serving international, national and regional markets, investors and visitors’. Although there is currently little information on actual actions proposed, the draft CRDP highlights the desirability of expanding the city region’s ports, as well as improving surface access and infrastructure including freight terminals.

Central Lancashire. The report notes that the Port of Liverpool is easily accessible from all parts of Central Lancashire and that Lancashire has its own smaller ports at Fleetwood and

at Heysham (just outside the City Region boundary). Although the draft CDRP does not specifically highlight any actions focused specifically on the region's ports, there are a number of relevant priorities including seeking to enhance sea (and air) connectivity from within the City Region, but also improved north-south connectivity between the major urban centres of the Central Lancashire and Merseyside which will provide improved access to its ports.

Manchester. Although the region's ports are not a specific priority within this CRDP, it does highlight the importance to linkages between the city region and the region's major ports, as well as the trans-Pennine motorway and railway connectivity underpinning the North European Trade Axis running from the Mersey to the Humber ports.

3.4 Regional Policy

The following section sets out the North West policy framework for the development of port infrastructure or related wider supporting measures (i.e. sectoral business support and training).

Regional Economic Strategy

The Regional Economic Strategy 2003 (RES) provides the economic development framework for the North West. Five priorities have been identified:

- Business Development;
- Regeneration;
- Image;
- Skills and Employment;
- Infrastructure.

With regard to Business Development the Strategy seeks to exploit the growth potential of business sectors. The NWDA's cluster development programme covers around one third of the region's employees and includes the following sectors: aerospace, automotive, aviation, chemicals, construction, creative industries, digital industries, energy, environmental technology, financial and professional services, food and drink, healthcare (biotechnology), maritime, sport, textiles and tourism. The maritime cluster is of direct relevance to ports but others as well have implications for port traffic demand.

The region's regeneration priority areas as set out in the Regional Planning Guidance essentially comprise the Northwest Metropolitan Area, Furness and West Cumbria, East Lancashire and coastal resort towns. The key challenge is to deliver urban renaissance and support the regeneration of the most deprived areas.

The Infrastructure Priority emphasizes the need to invest in the region's strategic transport and communications infrastructure in order to enable businesses to effectively transfer people, goods and information, within the region, the UK and to overseas markets.

The main statement of relevance within the RES is to "*Develop the strategic transport, communication, and economic infrastructure*". The RES notes the existence of certain constraints to economic growth due to transport infrastructure and in order to overcome these barriers specific areas should be addressed:

- "*Access to areas that are key to economic regeneration and growth, especially the region's **strategic ports** and airports*";
- "*Strategic access to, and between, the region's urban centres network. The strategic road network includes some of the most heavily used routes in the country*".

Ports benefit the North West's economy by helping to attract investment and new employment opportunities, and improving accessibility to ports is essential. Improving the road network is associated with the transfer of freight movements from road to water. The NWDA will work towards identifying and implementing key schemes that are necessary to support economic development and regeneration.

The Draft RES was first issued for consultation between June and September 2005. It refers specifically to the need to secure the necessary land use and surface access infrastructure for the Northwest's deep sea and Ro Ro sea services. It also identifies Access to the Port of Liverpool as a particular activity crucial to deliver the transformation in the economy, which is required to achieve the overall vision of the RES.

Regional Planning Guidance

Regional Planning Guidance for the North West (RPG13, March 2003) formally became Regional Spatial Strategy (RSS) in late 2004 when the provisions of the Planning and Compulsory Purchase Act came into effect. RSS is a statutory document which forms part of the development plan for an area. RSS also provides a framework to inform the preparation of local transport plans. The existing RSS is currently undergoing a full review which is anticipated to be formally submitted to the Secretary of State in January 2006. In the meantime the Assembly have recently undertaken an options consultation, which included sub regional advice from relevant groupings of local planning authorities. These consultations emphasized the role of the Port of Liverpool, which has been recognized as the most important UK port for freight transfers between the UK and Ireland and which, together with the trans Pennine road/rail corridor, forms a key European transport route. It also proposes a package of interventions, which includes:

- Enhanced access to ports (M6 - Heysham link) and protection of sites and routes of sub regional importance for rail freight e.g. Heysham Port.

- Will also need to take account of future upgrades/increased capacity requirements of key corridors e.g. M6/West Coast Mainline, Midlands to Manchester, Trans-Pennine etc.

The RPG notes that a high-quality transport network is essential to support the competitiveness of the North West's industry and commerce. It is also important for attracting new investment and creating new job opportunities. The transport element of RPG is called the Regional Transport Strategy (RTS). The key relevant components are:

- Enhancement of Trans – European Networks;
- Effective multi-modal solutions to the conveyance of goods, people and services;
- Efficient Transport Interchanges.

Policy T6 refers to the Region's Ports and its Strategic Inland Waterways. The policy recognizes Liverpool Port as the centre of maritime commerce and activity for the region. In order to further enhance its role: *"Environmental and capacity improvements to the strategic and local freight transport networks will be needed in order to secure the economic and regeneration benefits of the anticipated growth at the Port"*. The Manchester Ship Canal is also identified as a port with potential in increasing freight movements.

The policy recommends that development plans should capitalise on the economic activity that will be generated by the region's ports in accordance with the sustainable development principles set out in the Core Development Principles, the Spatial Development Framework and the economic Policies EC1–10. RPG notes that where significant port activity is taking place it is most likely that it will have an impact on the highway network (i.e. congestion, environmental quality on approach routes to ports), and a multi-modal transfer system should be investigated.

Regional Freight Strategy

The Regional Freight Strategy was produced in November 2003 by the North West Freight Advisory Group following the recognition in the 1999 RES of the importance of freight movements to the economic development of the region. The strategy has been used in the policy development process for RPG (this will be included in the next review of the RPG).

The Regional Freight Strategy was developed within the national policy framework as set out in documents such as the 1998 Transport White Paper, Transport 2010 – The Government's Ten Year Plan for Transport, Government Planning Policy Guidance, in particular, PPG11 (Regional Planning), PPG12 (Development Plans) and PPG13 (Transport). The Freight Strategy will also provide the strategic framework within which the next round of Local Transport Plans, covering the period from 2006/07 to 2010/11, can be developed.

The strategy identified the following opportunities for North West ports:

- Coastal/short-sea shipping and inland waterways – there are growing opportunities to transfer freight from land to water transport. This approach can have a significant impact in removing freight from the region's road and rail networks offering great opportunities for Mersey ports.
- Port Estates. There is the potential for industries to locate in port estates, in order to reduce freight movements and congestion from road and rail networks. The Manchester Ship Canal and the Weaver navigation are highlighted as examples that have the potential to accommodate industries prepared to locate adjacent to inland waterways (although the greatest potential is at the Port of Liverpool).

The strategy includes a 'Ports and Waterways Action Plan', which sets out the objectives and the timeframe within which these need to be achieved. The following lists the objectives relevant to the region's ports as stated in the Action Plan.

- *"To support proposals for the completion of the M6 link road to the Port of Heysham, by 2009"*
- *"To support proposals for improved access by road to the Port of Fleetwood, by 2004"*
- *"To support the reinstatement of the Olive Mount Chord and other improvements to the route linking to the Port of Liverpool, by 2005"*
- *"To support the principle of reconnecting the docks in Birkenhead with the national rail network, by 2010"*
- *"To support proposals for developing the use of rail to serve the Port of Heysham, by 2010"*
- *"To instigate an assessment of sites where significant opportunities exist for multi-modal freight facilities within or adjacent to ports and inland waterways, by 2005"*
- *"To instigate an investigation of the opportunities across the region for modal shift to coastal (short sea) shipping and inland waterways, including the Manchester Ship Canal, for selected cargoes (e.g. containers, bulks and wastes), by 2005"*

North West Maritime Strategy

NWDA commissioned in 2003 an independent study of the North West maritime sector. The strategy (which has not been adopted as NWDA policy) sets out the national maritime policy

framework, presents an overview of the maritime sector in the North West, and identifies key port developments in the region and proposals for the implementation of the strategy for the sector.

The NW maritime sector serves a number of sector activities such as:

- Freight handling;
- Passenger transportation;
- Port based industries;
- Naval shipbuilding;
- Cruise sector;
- Logistics and Distribution.

In order to sustain these activities the mission proposed in the strategy is to “*Maximise the contribution of maritime sector to the competitive advantage of the North West*”.

The key developments noted in the strategy are:

- “*Improvements in the role of small ports in sustainable distribution*”;
- “*Growth in maritime commerce*”;
- “*Development of a new cruise market*”.

The strategy recognizes the key role of the ports in terms of freight movements and its contribution to the regional economy and also describes the significance and the role of each sub-regional port. The following lists a number of key potential developments in the region:

Seaforth Container Terminal – “there are plans for development of further river berths for ro-ro ships, cruise ships, and possibly large deep sea container ships”.

Port of Garston – “capitalise on the re-emerging emphasis of short sea shipping, and its relatively uncongested road and rail links to the national network”.

Manchester Ship Canal – “realise the longer term potential of the Canal in contributing towards sustainable distribution through development of inland multi-modal sites connected by road, rail and sea.”

Fleetwood Marina with Trawler – “good development opportunities in the marine leisure and associated residential and retail development”.

Barrow Port – opportunities to capitalise in the marine engineering sector.

The action points as recommended by the report are to:

- Set-up Maritime North West as a brand;
- Develop a Maritime North West business plan;
- NWDA in partnership with Maritime NW need to lead to implement the strategy.

3.5 Sub-regional Policy Framework

Merseyside: Action Plan for the City Region 2002-2005

North West Regional Development Agency (NWDA) called for sub-regions to develop action plans to identify priorities which would inform its Corporate Plan for 2002 – 2005. The Mersey Partnership has produced this Action Plan with contributions from a wide range of partners; it has compiled herein a set of priorities and actions that are designed to promote the regional and sub-regional economies.

Ports and related maritime industries are noted in the Action Plan as one of Merseyside's strong economic features. Projected growth in port volumes is strong, supported by investment in two new river berths aimed at enhancing the Port's competitiveness in the Irish Sea roll-on/roll-off (RoRo) ferry business. The importance of this activity is recognised in proposed additional strategic sites such as:

- Birkenhead 12 Quays – target use as a RoRo ferry terminal (now operational);
- Parkside – offers the potential for inter modal freight terminal;
- Ditton, Widnes - offers the potential for inter modal freight terminal.

Merseyside is identified as having a key role in the North West economy in particular in the movement of goods to and from the Ports. The Action Plan recommends that *“developing a balanced, sustainable economy, it is imperative that ways are sought, for example, to move more goods on rail rather than on road, to upgrade public transport to reduce car use and to enhance and maintain the rich and diverse natural heritage that those who live, visit and work in this maritime region are offered”*.

In terms of managing freight on Merseyside's roads, the Action Plan highlights the need to improve the sub-region's road connections to the South. Also the Action Plan states that the *“sub-region is vitally interested in the M62/M60 multi-modal studies underway, given its importance for commercial traffic connecting Mersey and Humber Ports and the major conurbations of Manchester and Leeds with Merseyside”*. The plan then continues further by identifying the progress made to *“include the improvement of M62 Junction 6 to provide adequate capacity to serve the Airport and the Port and improve access from M62 to the City Centre”*.

Greater Manchester Economic Development Plan 2004/05 – 2006/07

The plan identifies the priorities and the framework that will contribute to the further economic development of Greater Manchester. Economic development is driven by 6 key themes:

- Building Competitive Businesses;

-
- Attracting and Retaining Investment, Visitors and Talent;
 - Creating World Class Skills;
 - Achieving Economic Inclusion;
 - Ensuring the Best Transition to Working Life for all our Young People;
 - Securing a Modern, Integrated and Efficient Transport Network.

One of the key assets of the Greater Manchester economy is its connectivity. The county sits on the West Coast Main Line for national (and international) freight and passenger connections. It is also well placed in the Trans Pennine motorway and railway linkages running from the Mersey to the Humber ports.

Under driver 6 the plan states the significance of an integrated transport network *“integrated inter-regional strategy for transport and connectivity will be the key to unlocking not only the potential of the wider city-region but also the capacity of parts of the North to access international markets and world class business, financial and professional services”*. Effective linkages with the North West’s city-regions will generate significant added capacity and potential for growth for these regions.

Sustainable Cumbria, 2004

The strategy (at a draft stage) sets out a sustainable approach to securing economic growth, social progress and environmental protection and enhancement in Cumbria over the next 20 years.

The strategy sets priorities for action for Barrow, given its significance as a commercial port (see Cumbria LTP). Specifically the objectives (indirect relevance to port development and maritime sector) set are:

- *“Support retention and development of existing employment base”*
- *“Diversify the economy and drive forward opportunities presented by the tourism industry”*.

In achieving these objectives the strategy notes that there is a significant role for the more efficient use of the sub-region’s ports. This also includes the potential for developing new types of traffic, with the proposed development of a cruise liner terminal(s) being an example.

Lancashire West Matters

Lancashire West Matters provides the strategic framework to support development in Lancashire West. The strategy was published by Lancashire West Partnership in October 2001 and is built around 4 themes:

- Business and Ideas
- People and Communities

- Infrastructure
- Image and Environment

The document recognizes that “*Lancashire West is well placed to attract investment*” – it has a coastal rim with two significant ports and excellent road and rail infrastructure. It also identifies the following opportunities:

- The strategy notes that the area’s ports and waterways “*hold exciting potential for active leisure opportunities*”
- Improved transport into/out of sub-region, “*especially better integrated public transport to link major business, residential and leisure districts. Much improved road and rail from the ports & business centres to the east coast and Europe, and to the south.*”

Local Transport Plans

Local Transport Plans (LTPs) are complementary to the government’s 10 year Transport Plan which sets out the longer term national programme for transport to the year 2010. The aim of the plan is to offer a more stable climate for investment in transport for both public and private sectors. The objectives within the LTPs fit well with the objectives set at a national and regional level. All local authorities are currently reviewing and updating their LTPs for the period 2005-2011.

Merseyside LTP

The Merseyside LTP is consistent with RPG13, the emerging North West RSS, and the North West RES. It is also influenced by local policies such as:

- Unitary development plans;
- Local Development Documents;
- Liverpool Vision Strategic Regeneration Framework Document;
- Liverpool First Community Strategy (2002 – 2005);
- the employment policies of the Merseyside partner Authorities, etc.

Merseyside Ports are central to the regeneration of the area. The LTP recommends a development strategy to meet the anticipated growth in demand for port-related distribution warehouses, with rail-connected sites located close to the proposed new roll-on/roll-off ferry terminals in Twelve Quays and Seaforth. Measures also propose:

- “*Road and rail access to maximise the shift of freight from road to rail, to minimise the environmental impact of existing Port traffic and to accommodate growth*”.
- “*The reconnection of Birkenhead dock railway*”
- “*Improving the loading gauge on the network to match the planned standards on the West Coast mainline*”.

A draft version of the Provisional Second Local Transport Plan for Merseyside was produced in June 2005, to cover the period 2006 — 2011. In terms of the wider policy context substantial changes have taken place at a regional level. The City Region Development Plan that was issued in May has become increasingly important and the new LTP will need to be consistent with a number of emerging linked strategies.

The LTP will support the economic development of Merseyside through managing to provide “an efficient transport network and support a healthier community by ensuring transport does not impair quality of life”. In terms of port development it continues to support the economic growth of Mersey Ports, which aims to ensure that Merseyside is well connected. Of particular note are the following:

- *“Increased freight traffic through the Mersey Ports via the new container berth”*
- Improve Access to Mersey Ports
- *“The need to undertake improvements in terms of increasing train paths available and to increase the size of containers which can use the line”*
- The need to pursue the reconnection of the Birkenhead Dock to the rail network.

Lancashire LTP

The following information is based from the second (draft) LTP for 2006-2011. A provisional document will be submitted to Government at the end of July 2005 and the final version by the end of March 2006. This is a great opportunity for Lancashire to refine objectives and re-focus opportunities in accordance to the needs of transport stakeholders. This working document recognizes the essential role of the transport sector in the economic and social development of the sub region. The paper identifies the following actions that need to be taken, with regards to port development:

- Improve motorway links to Lancashire’s ports – this is critical in terms of improving the sub-region’s economic performance.
- *“Promote Lancashire’s role in a West East Eurocorridor extending from Ireland the Irish Sea to the Trans-Pennine Corridor of Northern England and thence via the Humber ports and North Sea to the Netherlands, North Germany, Poland and beyond”* – increasing trade with Europe will strengthen Lancashire’s economy.

Greater Manchester LTP

Greater Manchester (GM) has produced a full LTP which covers the ten GM district councils. The aims are to develop an integrated transport system, improve safety and accessibility and protect the environment. The LTP is designed in such way that ensures the continuing revitalisation of Greater Manchester.

The key policies identified are as follows:

- The Manchester Ship Canal as noted in the LTP is currently “*under-utilised*”. The LTP encourages additional investment in the Canal and increasing usage of the Canal for freight shipping.
- Greater Manchester must benefit from its geographic placement within the Trans European Network and “*facilitate and support the development of freight – critical routes*”.
- Establish efficient road and rail links to facilitate freight movements to/from ports.

Cumbria LTP

Cumbria has produced a second (draft) LTP, which covers the period 2007-2012. The LTP sets out the vision for transport and the approach to deliver the plan. The plan fits in well with the Council’s corporate strategy and the regional economic and spatial strategies.

The overarching aim is to improve the transport network so that “*developments become more sustainable and transport does not constrain economic growth*”. The plan identifies the commercial ports of Barrow, Workington, and Silloth as having a significant role in boosting the local economy. Maritime activities such as short sea shipping, ferry operations and cruise ship calls are great opportunities for the development of these ports. Better road and rail accessibility to the ports of Barrow and Workington will be supported. The plan highlights the need to review existing transport networks to ensure that they are used efficiently. The establishment of an improved transport network will warrant the economic regeneration of local towns and offer new employment opportunities.

Cheshire LTP

The first Cheshire LTP sits well with transport and economic development policies, but it also takes forward the aims of the Sustainable Tourism Strategy and Health and Environment programmes.

In terms of port development the LTP highlights the significance of its only two waterways Manchester Ship Canal (with docks at Stanlow and Ellesmere Port) and the Weaver Navigation. The plan will support opportunities (in partnership with other organisations) to encourage manufacturing, distribution, and storage firms to locate adjacent these waterways and increase freight movements as well as the usage of the Ship Canal. The usage of Weaver Navigation is seen as a great opportunity to encourage tourism and leisure based economy in the surrounding local areas.

Other proposed interventions of direct relevance to ports include:

- The County Council will work with the Manchester Ship Canal Company and other local authorities along the Ship Canal to develop waterborne freight;
- Traffic management will be necessary to minimise the impact of freight traffic on the Primary Route Network, therefore the County Council will support the upgrading of the West Coast Main Line and the inclusion within it of increased capacity for freight.

3.6 Conclusion

Both European and UK transport policy strongly supports the development of sustainable distribution, with European policy in particular seeking to foster the development of short sea shipping as an alternative to long distance road haulage. In the longer term (i.e. by 2025) there is likely to be some form of pan-European system of charging for all types of transport that takes into account the full cost of each mode including external costs and this is likely to lead to some modal switch from long distance road haulage to greater use of rail, short sea and coastal shipping.

In the medium to long term, this policy trend may help to sustain the commercial viability of smaller ports as shippers seek to take cargoes closer to inland origins and destinations of cargo, to counter the loss of traffic following the abolition of the National Dock Labour Scheme and as average ship sizes have increased.

At the same time, policy trends should lead to the greater development of rail services and coastal feeder services to and from Liverpool, as the major North West port with sufficient volumes to provide the necessary critical mass of traffic required for rail and waterborne transport. European environmental policies are likely to continue to provide very strong protection to sites of European environmental significance and this could have a major influence over the development of deep sea container port capacity in GB.

In the short term, national ports policy is in a state of flux, but we believe it is likely to be more strategic in its approach in the future with published demand forecasts and some degree of policy direction on where further port development would be justified to cater for expected traffic growth in the deep sea container and RoRo sectors. It may therefore follow the approach taken by the Government towards the development of airports.

In the medium term, there is likely to be greater clarity from the European Commission as to when and how the public sector can invest in port infrastructure and the UK is likely to adopt a consistent policy in line with the rest of Europe. This may allow public sector investment in port infrastructure under certain circumstances such as to secure significant economic or environmental benefits where there is no significant distortion of the market.

Existing regional policies recognise the importance, in particular, of the Port of Liverpool to the region's economy and support the development of sustainable distribution. The Northern Way document regards ports in the North West, the North East and Yorkshire and the Humber as having considerable potential to act as growth poles and to reduce the volume of

traffic passing through the more congested South of England. It proposes the implementation of a Port Access Plan to improve rail and road access to the regions' principal ports. The North West Regional Freight Strategy supports a number of schemes that would enhance access by road and rail to the region's largest ports.

Local Transport Plans strongly support the development of a policy of sustainable distribution and a continuing role for all the region's ports within this overall policy. Ports are seen as potential growth poles and as sites for the development of distribution activity. Enhanced road and, in particular, rail access to the regions' ports is supported.

4. ANALYSIS OF PORT SUPPLY & DEMAND

4.1 Introduction

The GB Port Supply and Demand Model has been used by MDS Transmodal to carry out studies for the Royal Society for the Protection of Birds (RSPB) in 1997 and both the RSPB and English Nature in 2002. These studies have been the only attempt we are aware of to model GB port supply and demand since the demise of the National Ports Council in 1980.

This chapter sets out the methodology used and the analysis of port supply and demand in NW England up to 2025. More detail on the methodology is provided in the Technical Annex at the end of this report.

4.2 Methodology for analysis of port infrastructure supply and demand

Calculating port supply

The starting point for calculating port supply is an up-to-date inventory of existing port facilities in the North West. This has been compiled from a number of different reference sources supplemented by MDS Transmodal's own knowledge and experience of various ports. It provides details of individual berths within a port or port area and classifies each berth according to six cargo handling categories:

- LoLo
- RoRo
- Trade cars
- Specialist dry bulk
- Specialist liquid bulk
- General cargo/semi bulk/multipurpose

Other recorded details include:

- Quay length
- Area (hectares)
- Maximum ship size dimensions (i.e. maximum length, draft and beam of vessels able to be accommodated at the port)

Table 4.1: North West Berth Supply, by Quay Length and Draft

Max. vessel draft (metres)	LoLo	Dry bulk	Liquid bulk	General cargo/ multi-purpose/ semi bulk	RoRo++	Total	RoRo++
	Quay metres						Hectares
0.1-5.0	-	-	320	1,133	-	1,453	-
5.1-6.0	-	200	-	1,425	545	2,170	13.3
6.1-7.0	-	183	695	1,415	517	2,810	11.0
7.1-8.0	183	884	1,275	410	-	2,569	-
8.1-9.0	-	949	1,979	6,150	233	9,311	2.0
9.1-10.0	-	945	1,359	945	400	3,649	2.0
10.1-11.0	-	-	-	-	-	-	-
11.1-12.0	-	-	2,511	-	703	3,214	4.6
12.1-13.0	1,097	5,174	-	3,464	-	9,735	-
13.1-14.0	-	-	-	-	-	-	-
14.1-15.0	-	-	360	-	-	360	-
15.1+	-	-	-	-	-	-	-
Total	1,280	8,335	8,499	14,942	2,398	35,454	32.9
% total quay metres	4%	24%	24%	42%	7%	100%	

Source: MDS Transmodal Ltd

++'roro' can accommodate trucks, trailers or trade cars.

Table 4.1 presents a summary of port supply (not capacity) based on existing physical facilities included in the inventory. The inventory includes 68 records for port facilities in the North West region.

The analysis indicates the availability of about 35,000 quay metres in 2005, with 89% of berths being for bulk and multipurpose general cargo berths. 4% of quay length relates to dedicated LoLo berths - at Seaforth Container Terminal and Irlam on the Manchester Ship Canal.

While RoRo berths represent some 7% of quay length in the region, the key factor in RoRo berth supply is landside storage. The supply of RoRo terminals is usually therefore measured in terms of hectares. Approximately 33 hectares are available, with the majority of this located at the region's four RoRo terminals in Liverpool, Birkenhead (Twelve Quays), Heysham and Fleetwood.

Forecast Demand

Future demand for unit load cargoes is calculated using forecasts generated by MDST's trade forecasting model⁴. The model uses as inputs historical quarterly data (from first quarter 1988 to date) by commodity and by country and automatically seeks an explanation for historical changes in tonnage with time by examining changes in the countries' main economic indicators and the trends for the country-commodity relationships. The derived regression coefficients are used to predict cargo over the next five years based upon OECD predictions of GNP and other variables including exchange rates and consumer price indices. Projections to 2025 for all unitised commodity types are generally based on an extrapolation of a linear trend from the period 1988-2010. An alternative approach to long-term trade forecasting, also used by MDS Transmodal, would generate an exponential trend in trade rather than a straight-line progression and scenarios on this basis have also been provided for LoLo.

Projections for the period 2003-2025 for all non-unitised commodity types are based on an extrapolation of a linear trend from the period 1988-2003 through to 2025, with a weighting in favour of more recent years. However, MDS Transmodal is carrying out a major research exercise for the Department for Transport, which will develop national port forecasts for GB up to 2030. This also involves developing simple specific models to explain the economic drivers behind trade growth for each broad non-unitised commodity (e.g. coal and other energy sources, trade cars etc.). The results included in this report will therefore be refined during the next few months.

Ship sizes by trade route

The world areas are used to introduce assumptions relating to the maximum size of ship involved in different trades. This determines the minimum size of berth that will be required by ships trading on different trading routes over time. The assumptions on ship size differ according to type of traffic: LoLo, RoRo, dry bulk, liquid bulk and conventional.

Supply-Demand Balance

In order to be able to forecast the future supply of and demand for GB port infrastructure a model has been developed which attempts to 'explain' the observed market situation in 2003. For 2003 it should be able to 'fit' all traffic into the existing infrastructure, as this is what happened in reality. In the model we can only attempt to recreate the actual situation, by using 'across the board' productivity formulae as explained in more detail in the Technical Annex. In practice productivity will vary from port to port because of different equipment employed or differences in the ships served.

⁴ MDST econometric trade forecasting model (FORK)

The model works by:

- Sorting demand (trade) into world areas and cargo category.
- Applying vessel size assumptions and increasing these over time according to the different cargo handling modes and trade route.
- Estimating the productivity of each port terminal on the basis of cargo mode of appearance, market vessel size and the parameters of the berth. Again the productivity formulae are increased with time.
- Starting with 'big ships' first, by an iterative process calculating how much the capacity of a particular port is used up by ships employed on different trade routes. Bigger ships are fitted first in order to make the most economical use of infrastructure.
- Redistribution of traffic from ports where there are capacity shortfalls to adjacent ports if available capacity exists. The general assumptions in the model are that dry bulk, liquid bulk and semi-bulk traffic can be re-distributed up to five ports along the coast. Trade car traffic can be re-distributed to any appropriate port around the coast of GB. RoRo traffic can shift up to 13 ports, while LoLo traffic can be redistributed up to 13 ports along the coast or to any appropriate port around the coast, depending on the scenario.

The model therefore creates a 'cascade' effect, whereby as ships increase in size, they require deeper water. If the current port becomes capacity constrained, or the ship is too large, then the model attempts to fit traffic to neighbouring ports by shifting cargo along the coast in either direction before it is classified as unsatisfied demand. A capacity shortfall for that traffic in that port region is then deemed to exist.

As the traffic carried in deeper drafted vessels switches ports, so the original infrastructure is freed up and used by shorter distance traffic arriving in smaller vessels. Using this model approach, as the process repeats itself, so the smallest, shallowest port infrastructure eventually becomes obsolete.

Port productivity

The productivity formula used by the model to predict future port demand is not static, but is increased by 1.5% per annum up to 2010 according to assumptions on productivity increases relating to the use of larger vessels and improved technology and working practices at the ports. After 2010 these productivity gains through existing facilities have been assumed to be maximised and no further efficiency gains are possible.

The productivity formulae that are used are based on long run sustainability. If the ports industry is to retain internal competitiveness then some short-term spare capacity must exist to allow operators to switch ports from time to time. Such switching has been observed recently in container traffic between the ports of Southampton and Felixstowe for example, as a result of congestion at these ports at different times. Consequently our definition of capacity represents around 90% of the maximum capacity that could be achieved by an individual port over a short period.

4.3 Balance of Supply & Demand for Port Infrastructure

The following tables provide the results for each mode of appearance up to 2025 and are expressed in terms of traffic that is not accommodated at both GB and North West ports. This inability to accommodate can be addressed in two ways, by:

- i) Building or enhancing berths;
- ii) 'Allowing' cargo to switch beyond local ports to national ports, which could include deep-sea container traffic currently based in South East ports switching to the Tees, Mersey or Clyde.

LoLo Demand-Supply Balance to 2025

LoLo Scenario 1 assumes that containerised trade follows an exponential growth pattern up to 2025, leading to a 175% growth during this period. It also assumes that only the Felixstowe South scheme would receive planning permission, so little additional capacity would have been provided in this sector. However, the scenario also assumes that traffic can switch to any GB port in order to secure a berth with sufficient depth of water. Under this high growth scenario, the region would have a shortfall of capacity sufficient to accommodate some 6.1 million tonnes of LoLo traffic by 2025.

LoLo Scenario 1: supply & demand in North West ports*Assumptions:*

- Exponential trade growth 2005-2025
- Limited new port capacity in South East England (only Felixstowe South)
- ‘Super-regional’ redistribution of traffic allowed to up to 13 ports along GB coastline (e.g. between Southampton and Felixstowe but not Southampton and Liverpool of the total of 72 Customs ports on the GB mainland).

Million tonnes		Accommodated	Not accommodated	Total	% Not Accommodated
GB	2003	44.9	-	44.9	-
	2015	63.1	1.4	64.5	2.2%
	2025	76.3	16.1	92.4	17.4%
North West	2003	4.4	-	4.4	-
	2015	5.4	1.2	6.4	18.8%
	2025	6.0	6.1	12.1	50.4%

Source: MDS Transmodal GB Port Supply & Demand Model

LoLo Scenario 2 is similar to Scenario1 except that traffic can switch to any container port throughout GB where it can find a suitable berth. This has little impact in North West England, but allows more traffic to be accommodated on GB-wide basis.

LoLo Scenario 2*Assumptions:*

- Exponential trade growth 2005-2025
- Limited new port capacity in South East England (only Felixstowe South)
- Maximum redistribution of traffic allowed (to any GB container port)

Million tonnes		Accommodated at existing berths	Not accommodated	Total	% Not Accommodated at existing berths
GB	2003	44.9	-	44.9	-
	2015	64.2	0.2	64.6	0.3%
	2025	80.1	12.3	92.4	13.3%
North West	2003	4.4	-	4.4	-
	2015	5.4	-	5.4	-
	2025	6.0	6.1	12.3	49.6%

Source: MDS Transmodal GB Port Supply & Demand Model

LoLo Scenario 3 is the same as Scenario 2 except that trade growth is assumed to be linear rather than exponential. We believe that a linear trend is more likely over the next 20 years.

LoLo Scenario 3*Assumptions:*

- Linear trade growth 2005-2025
- Limited new port capacity in South East England (only Felixstowe South)
- Maximum redistribution of traffic allowed (to any GB container port)

Million tonnes		Accommodated at existing berths	Not accommodated	Total	% Not Accommodated at existing berths
GB	2003	44.9	-	44.9	-
	2015	64.4	0.2	64.6	0.3%
	2025	78.6	6.1	84.7	7.2%
North West	2003	4.4	-	4.4	-
	2015	5.4	-	5.4	-
	2025	5.9	2.8	8.7	32.2%

Source: MDS Transmodal GB Port Supply & Demand Model

Under this scenario, Liverpool requires additional capacity by 2025.

LoLo Scenario 4 provides the modelled demand-supply balance assuming exponential trade growth and more significant development of capacity in both South East England and at Liverpool. Under this scenario, even with the additional post-panamax berths at Seaforth, the Port of Liverpool would be unable to accommodate an estimated 2.1 million tonnes of containerised traffic by 2025.

LoLo Scenario 4*Assumptions:*

- Exponential trade growth 2005-2025
- New port capacity in South East England (at Felixstowe South and London Gateway) and at Liverpool
- Redistribution of traffic allowed to up to 13 ports along GB coastline

Million tonnes		Accommodated	Not accommodated	Total	% Not Accommodated
GB	2003	44.9	-	44.9	-
	2015	64.4	0.2	64.6	0.3%
	2025	90.1	2.3	92.4	2.5%
North West	2003	4.4	-	4.4	-
	2015	7.7	-	7.7	-
	2025	10.0	2.1	12.1	17%

Source: MDS Transmodal GB Port Supply & Demand Model

LoLo Scenario 5 provides the modelled demand-supply balance assuming linear trade growth and more significant development of capacity in both South East England and at

Liverpool. Under this scenario, with the additional post-panamax berths at Seaforth, the Port of Liverpool would (just) have sufficient capacity to accommodate demand in 2025.

LoLo Scenario 5

Assumptions:

- *Linear trade growth 2005-2025*
- *New port capacity in South East England (at Felixstowe South and London Gateway) and at Liverpool*
- *Redistribution of traffic allowed to up to 13 ports along GB coastline*

Million tonnes		Accommodated	Not accommodated	Total	% Not Accommodated
GB	2003	44.9	-	44.9	-
	2015	64.4	0.2	64.6	0.3%
	2025	84.5	0.2	84.7	0.2%
North West	2003	4.4	-	4.4	-
	2015	7.7	-	7.7	-
	2025	9.4	-	9.4	-

Source: MDS Transmodal GB Port Supply & Demand Model

The results demonstrate the phenomenon of the declining capacity of the existing physical assets as a result of the increase in ship sizes, such that by 2025 an undersupply situation has developed as the largest ships operating in the container trades struggle to find any suitable ports in Great Britain at which they can be accommodated. Existing facilities are therefore 'filled' by smaller ships with lower levels of productivity, which effectively reduces the overall operating capacity of port infrastructure while some of the largest ships cannot be accommodated at all, leading to diversion to Continental ports.

The North West is one of the two key areas in the country where the long-term shortfall in LoLo berth supply is indicated, the other being the South East, although the region's current limited involvement in deep sea trade means that ship sizes do not yet go over capacity thresholds to the extent they do in the South East. The shortfall for the North West is located at the Port of Liverpool, as this is the region's only dedicated deep sea container port.

*RoRo Demand-Supply Balance to 2025***RoRo Scenario***Assumptions:*

- *Straight line growth 2005-2025*
- *No new capacity*
- *Redistribution of traffic allowed to up to 13 ports along GB coastline*

Million "quasi-tonnes"		Accommodated	Not accommodated	Total	% Not Accommodated
GB	2003	163.1	-	163.1	-
	2015	240.5	8.6	248.6	3.5%
	2025	280.7	28.4	309.1	9.2%
North West	2003	21.6	-	21.6	-
	2015	29.4	5.6	35.0	16.0%
	2025	30.8	12.4	43.2	28.7%

Source: MDS Transmodal GB Port Supply & Demand Model

The forecasts of port traffic demand in the North West in the RoRo sector are for a doubling of traffic over the next 20 years or so. By 2025 the modelling suggest that some 29% of forecast RoRo traffic could not be accommodated at North West RoRo ports in their present state.

*Trade Car Demand-Supply Balance to 2025***Trade Car Scenario***Assumptions:*

- *Straight line growth 2005-2025*
- *No new capacity*
- *Redistribution of traffic allowed to up to 13 ports along GB coastline*

Million "quasi-tonnes"		Accommodated	Not accommodated	Total	% Not Accommodated
GB	2003	310.9	-	310.9	-
	2015	433.5	29.8	463.3	6.4%
	2025	433.4	168.2	601.6	28.0%
North West	2003	4.9	-	4.9	-
	2015	5.9	Negligible	5.9	-
	2025	5.9	8.5	14.4	144%

Source: MDS Transmodal GB Port Supply & Demand Model

The Trade Car Scenario forecasts growth in trade car traffic up to 2025 and shortfalls in capacity at Liverpool and Heysham by 2025.

Dry Bulk Demand-Supply Balance to 2025

Dry Bulk Scenario

Assumptions:

- Straight line growth 2005-2025
- No new capacity
- Redistribution of traffic allowed to up to 5 ports along GB coastline

Million tonnes		Accommodated	Not accommodated	Total	% Not Accommodated
GB	2003	108.5	-	108.5	-
	2015	102.1	13.8	115.9	11.9%
	2025	110.9	14.9	125.8	11.8%
North West	2003	10.5	-	10.5	-
	2015	8.5	2.7	11.2	24.1%
	2025	9.3	2.9	12.2	23.7%

Source: MDS Transmodal GB Port Supply & Demand Model

The Dry Bulk Scenario forecasts 16% growth in dry bulk traffics between 2003 and 2025 for GB ports (based on extrapolation of historic trends) and a shortfall in capacity at Liverpool from 2015. This analysis does not take into account the anticipated reduction in coal imports in the context of Government energy policy and the Kyoto agreement. It may, however, be that a significant proportion of any fall is replaced by biomass/renewable crops, largely in the form of wood chips or palm kernels etc.

Semi-Bulk Demand-Supply Balance to 2025

Semi-Bulk Scenario

Assumptions:

- Straight line growth 2005-2025
- No new capacity
- Redistribution of traffic allowed to up to 5 ports along GB coastline

Million tonnes		Accommodated	Not accommodated	Total	% Not Accommodated
GB	2003	25.0	-	25.0	-
	2015	26.7	0.9	27.6	3.3%
	2025	28.8	1.0	29.8	3.4%
North West	2003	1.2	-	1.2	-
	2015	1.2	0.2	1.4	14%
	2025	1.3	0.2	1.5	13%

Source: MDS Transmodal GB Port Supply & Demand Model

The Semi-Bulk Scenario forecasts 19% growth in semi-bulk traffics for GB ports between 2003 and 2025 (based on extrapolation of historic trends) and a shortfall in capacity at Liverpool from 2015.

Liquid Bulk Demand-Supply Balance to 2025

Liquid Bulk Scenario

Assumptions:

- Straight line growth 2005-2025
- No new capacity
- Redistribution of traffic allowed to up to 5 ports along GB coastline

Million tonnes		Accommodated	Not accommodated	Total	% Not Accommodated
GB	2003	216.3	-	216.3	-
	2015	258.6	-	258.6	-
	2025	296.6	-	296.6	-
North West	2003	16.8	-	16.8	-
	2015	20.7	-	20.7	-
	2025	25.3	-	25.3	-

Source: MDS Transmodal GB Port Supply & Demand Model

The Liquid Bulk Scenario forecasts 37% growth in these traffics for GB ports between 2003 and 2025 (based on extrapolation of historic trends), but existing modelled berth capacity is adequate.

4.4 Conclusion

The MDS Transmodal GB Port Supply and Demand Model has been used to model scenarios of the port supply-demand balance up to 2025. The analysis indicates the availability of about 35,000 quay metres of berths in the North West region in 2005, with 89% of berths being for bulk and multipurpose general cargo berths. 4% of quay length relates to dedicated LoLo berths and RoRo berths represent some 7% of quay length and occupy about 33 hectares of land.

The model scenarios suggest that, given forecast trade growth up to 2025 (based on analysis of historic trends on a commodity-by-commodity basis), the North West is likely to require additional port capacity in the unit load trades over the next 20 years. This is most likely to be required at Liverpool (LoLo and RoRo) and at Heysham (RoRo). The model scenarios for dry bulk and semi-bulk traffics also suggest that additional capacity will be required by 2025. However, all these forecasts are based on the assumption that historic trends in trade growth will continue for the next 20 years. Research that MDS Transmodal is carrying out for the Department for Transport is analysing the key economic drivers behind growth in major commodity groups and this is likely to have an impact on, in particular, the trade forecasts for bulks.

5. IMPACT ASSESSMENT

5.1 Introduction

This chapter sets out the key constraints and opportunities for each of the commercial ports handling freight traffic in 2005 in North West England (i.e. excluding Whitehaven and Maryport) and concludes with an assessment of the economic contribution of the ports to the North West economy.

The analysis of constraints and opportunities has been informed by the stakeholder consultation exercise, as well as secondary sources available for the study.

5.2 Constraints & Opportunities for North West Ports

This section sets out the key constraints and opportunities for each port up to 2025. As they are separate facilities, Birkenhead Docks and the Twelve Quays ferry terminal have been treated separately from the Port of Liverpool, even though they are in common ownership.

Barrow

Barrow is involved in offshore supply services, having been involved in the 1990s with the development of the Morecambe Fields for British Gas and Hamilton Oil's Liverpool Bay project. The port also has experience as a base for laying offshore pipelines and the import of heavy machinery for the onshore terminals. Barrow is home to a rail-connected marine terminal for BNFL from which nuclear fuel is shipped, as well as the BAE Systems facility for shipbuilding and the construction of submarines. Apart from these specialised trades, commodities handled include dry bulks such as sand, granite and aggregates for the local hinterland.

Access to the port is via a long dredged channel and lock system and so there is no direct access to the sea, but vessels up to a draft of 8.5m can be handled. The port has the deepest water of any port between the Clyde and the Mersey, but has only a sub-regional hinterland and is remote from major markets. These factors are likely to make it difficult to attract significant volumes of additional cargo. One possibility may be biomass for a regional power station.

Road access to the M6 is relatively poor on the single carriageway A590. Although the Highways Agency has developed a by-pass scheme for some settlements on the A590, this is unlikely to have a significant impact on the port. ABP believes that a bridge across Morecambe Bay could assist the port to develop traffic to some extent, but this ambitious scheme is not being supported by the Highways Agency. There is an active rail link, but this is used only for BNFL traffic.

The port has significant amounts of development land available and some of this land is most likely to be used for regeneration and marine tourism (i.e. waterfront development as part of the regeneration of the town, marina development and possible cruise terminal) rather than for the development of additional freight traffic.

CONSTRAINTS

- Relatively remote from major markets, largely serving a local industrial and agricultural hinterland;
- Road access is moderate, via single carriageway A590 to the M6;
- Dredging of the access channel is currently funded by the MOD/BAE Systems, rather than by commercial shipping;
- Significant regional competition, particularly from Workington, Heysham and Lancaster.

OPPORTUNITIES

- Providing specialised port-based services to the offshore industry and BNFL;
- Maintaining its role as a local port for shippers of dry bulk cargoes;
- Sustainable distribution role, taking cargo as close as possible to its inland origin/destination, including the possible further development of the port as a railhead for southern Cumbria.

Conclusion

Barrow enjoys deep water and has some effectively tied traffics related to the offshore sector and the nuclear industry. However, the port otherwise has a relatively poor hinterland and is remote from major markets. Land availability for the development of commercial cargoes is unlikely to be an issue at Barrow. There may be some limited scope for the development of additional rail traffics over the next 20 years, perhaps serving the local area rather than handling port-based cargo. Given current market and policy trends, its future roles are likely to be:

- A base for the offshore and nuclear industries;
- A sustainable distribution hub (waterborne, rail and road freight transport), principally serving a sub-regional hinterland for bulk goods.

Birkenhead – Twelve Quays

This purpose-built ferry terminal was opened in 2001 and is now owned by Peel Ports. Norse Merchant Ferries operates two sailings a day to Belfast and three sailings a day to Dublin from RoRo berths on the river, providing 24 hour access to the berths without the need to negotiate locks. The facility enjoys good access to the M53 and this route has reasonable capacity, although there may be a capacity issue on the two-lane section near Ellesmere Port during peak periods.

CONSTRAINTS

- Strong competition for RoRo freight volumes from Holyhead, which has increased freight capacity (although less strong in unaccompanied market, as the port has little space available for parking);
- Further financial difficulties for NMF (although situation now appears more stable and the company is to be taken over by Norfolk Line);
- In the medium-term, lack of trailer parking space to fully exploit likely trade growth?

OPPORTUNITIES

- Policy/legislative changes relevant to the RoRo market which should increase Twelve Quay's market share;
- Continuing growth in the Irish Sea RoRo freight market, both to the ROI and Northern Ireland;
- Development of Regional Distribution Centres adjacent to the terminal (based on the RoRo traffic), which could serve both the North West and the Irish market.

Conclusion.

Twelve Quays, with its 24-hour unrestricted access direct to the sea and proximity to major markets, is the best-appointed RoRo facility in the North West. The lack of land for the storage of trailers may become a constraint in the future. It should benefit from expected trade growth in a more stable market environment. Given current market and policy trends, its future roles are likely to be:

- A major RoRo facility serving the GB-Ireland market (i.e. a national role);
- Given sufficient land availability adjacent to the terminal, the facility could help to support the development of distribution activity serving both the North West and the Irish markets.

Birkenhead Docks

The port is configured as an enclosed multi-berth dock system and handles a wide variety of dry and liquid and semi-bulk cargoes. The port enjoys reasonably rapid access to the M53.

Mersey Docks would like to re-connect the Docks to the rail network, based on the existing track bed, but this would only be for less-than-trainload traffics.

CONSTRAINTS:

- Significant competition from Port of Liverpool, with deeper water facilities, serving a similar hinterland;
- Current lack of an active rail link to Birkenhead Docks.

OPPORTUNITIES:

- Land available for development (perhaps for distribution)
- Maintaining role as regional port for shippers of dry and liquid bulk and semi-bulk cargoes, serving a rich hinterland;
- Sustainable distribution role, taking cargo as close as possible to its inland origin/destination;
- Development of (probably limited) rail traffic.

Conclusion

Birkenhead Docks enjoys quite deep water, but are dominated by the Port of Liverpool, which has an almost identical hinterland for the range of cargoes Birkenhead Docks can handle and which enjoys considerable economies of scale. The lack of an active rail link to the port may restrict its development potential as a site for distribution activity, but land availability is very unlikely to be a constraint on development. The availability of land could provide an opportunity for the development of non-port or port-based distribution activity. Given current market and policy trends, the Docks' future roles are likely to be:

- A sustainable distribution hub (waterborne, rail and road freight transport), principally serving a regional hinterland as long as a rail link is available.
- Potential development of distribution activity serving both the North West and Irish markets.

The northern part of the Cammell Laird site is currently occupied by A&P Birkenhead, which operates a ship repair and conversion facility, while the southern part of the site has been purchased by a prospective developer. If we assume that the site would not be retained for any other maritime industrial use, the site could be developed as a RoRo facility and/or distribution site with its deep water and the potential to develop a new private roadway (along the track bed of a former railway) from the site to Birkenhead Docks and the M53.

Bromborough (Mersey Wharf): Owned by Victoria Group, Mersey Wharf handles a number of minor bulk flows on a riverside berth, competing in the local “small ports” market. Its future role is likely to be as a small sustainable distribution hub for bulk and semi-bulk goods (waterborne and onward road distribution), principally serving a regional hinterland.

Fleetwood

Fleetwood offers a single RoRo berth located on the banks of the River Wyre outside the enclosed dock system for a thrice-daily Stena Line ferry service to Larne in Northern Ireland. Fleetwood’s capacity is constrained by draft restriction and it has difficulty providing for a fixed schedule, even though the route is served by shallow draft vessels specifically chosen for the route. The port handles no other commercial cargo, although it is an important fishing port.

Within the local economic context, Fleetwood is relatively deprived and the development of the port is an economic priority for the local authority (Wyre Borough Council). Land available for development at the port is adjacent to the existing marina and fish docks and would not be developed for commercial port activities due to the lack of adjacent deep water.

The A585 was planned to be de-trunked but has now been retained within the trunk road network. The route between Fleetwood and the M55 suffers from congestion at peak hours and the Highways Agency has developed a Route Management Strategy, which will lead to the development of small-scale measures to improve traffic flows over the next ten years. There is no prospect of a rail connection for Fleetwood and there is unlikely to be demand for a rail service, given the nature of the traffic (fast-moving accompanied RoRo traffic).

CONSTRAINTS:

- Maritime access restrictions: 4.2 metres draft at all states of the tide and 24 metre beam restrictions limit the size of RoRo vessel that can be accommodated, while average vessel size is increasing which will make it difficult to operate a fixed RoRo schedule;
- Access to M55: Some sections of the 13 mile single carriageway A585 are congested at peak times, leading to unreliable journey times for ferry traffic and immediate access is via the Fleetwood town centre.
- One major customer (Stena Line), deploying relatively old vessels;
- Strong competition from Heysham and Liverpool in the RoRo market and potential increased competition from development of new in-river facility at Liverpool or an additional in-river facility at Birkenhead.

OPPORTUNITIES:

- Continuing growth in the Irish Sea RoRo freight market;
- Small scale measures to the A585 may increase reliability of journey times;
- Further development as leisure port.

Conclusion

Restricted maritime access to port plus strong regional competition from facilities with geographic advantages may lead to the existing service's eventual transfer to a deeper water port when new and larger ships are acquired, although the ferry line has recently renewed its contractual agreement with ABP. This could effectively imply the closure of the port to commercial traffic in the medium to long term and a future focus on leisure activities. Although ABP would actively seek a new ferry operator operating smaller vessels, there is a risk that Fleetwood could close to commercial traffic in the medium to long term. If the port remains open to commercial traffic, its future role at least in the short to medium term is likely to be as a RoRo facility serving the GB-Ireland market.

Garston

Garston is located 10km from the city of Liverpool on the River Mersey. The range of commodities handled is varied and includes steel products and agri-bulks. The port has concentrated on developing long-term relationships with specialist operators and provides added value services (e.g. bagging, blending and stock control). The main terminal operator is Frank Armit and Son Ltd.

The port is configured as an enclosed multi-berth dock system and can service ships of 10,000 dwt and up to a maximum of 150m length, 19m beam and drafts up to 8.3m.

ABP believes its remaining development land at the port is likely to be used up in the next 2-3 years for residential development (although Liverpool City Council is likely to resist this) and some further development of facilities for port traffics.

The port enjoys good access to the core trunk road network and is well-located to serve the M62 Corridor and Midlands markets. Although the port is located adjacent to a Freightliner terminal, it is not currently rail-connected; although the formation is still in place. Much of the track has been removed and Network Rail is not aware of any intention to re-connect the port to the network. A rail connection would appear to be possible, although it would require access through the Freightliner terminal.

CONSTRAINTS:

- Significant competition from Port of Liverpool, which has deeper water facilities, serving an almost identical hinterland;
- Development land likely to be used up within 2-3 years?

OPPORTUNITIES:

- Maintaining role as regional port for shippers of dry bulk and semi-bulk cargoes, serving a rich hinterland;

- Sustainable distribution role, taking cargo as close as possible to its inland origin/destination.

Conclusion

Garston enjoys quite deep water and is well-located to serve the M62 Corridor market. It is, however, dominated by the Port of Liverpool, which has an almost identical hinterland for the range of cargoes Garston can handle and which enjoys considerable economies of scale. Given current market and policy trends, its future role is likely to be as a small sustainable distribution hub for bulk and semi-bulk goods (waterborne and onward road distribution), principally serving a regional hinterland.

Heysham

The key traffic at Heysham is unaccompanied RoRo traffic to Ireland (Norse Merchant and Seatruck Ferries) and RoRo freight to the Isle of Man (Isle of Man Steam Packet Company). The port has recently been acquired by Peel Ports through the latter's purchase of Mersey Docks and Harbour Company. Its previous owner Mersey Docks and Harbour Company had invested in enhanced facilities at Heysham. The port also handles significant volumes of trade cars for export to Ireland and smaller volume of bulk cargoes.

A key issue for the Port of Heysham is the development of a new access road for Heysham and Morecambe to the M6, which is being taken forward by Lancashire County Council. This link would help to provide faster access to Morecambe and assist in regeneration of the area, while also removing strategic traffic, such as port traffic, from a single crossing of the River Lune and Lancaster en route to the M6. The favoured route by the local authorities and the Highways Agency seems to be the "northern route" to Junction 34 of the M6.

There is an existing rail link to the port, but no traffic at present. To access the port a reversal is required at Morecambe Station.

The port is intending to pursue two developments at the port to cater for expected growth in RoRo traffic (at a total cost of £6.7 million) to replace a linkspan and to extend the area for the storage of trailers.

According to the local authority, additional land for expansion would be available, if required, outside the port estate on a neighbouring brownfield site.

CONSTRAINTS:

- Maritime access restrictions: minimum of 5.1 metres of water at all states of the tide, which limits the size of RoRo vessel that can be accommodated;
- More remote from major unaccompanied RoRo freight market than Liverpool;
- 8 mile section of A683 to M6 is single carriageway, via Lancaster city centre;

- Strong competition from Fleetwood and Liverpool in the RoRo market and potential increased competition from development of new in-river facility at Liverpool.

OPPORTUNITIES:

- Further growth in (more stable) Irish Sea RoRo market;
- Investment by existing and well-established RoRo customers: Sea Truck is investing in new larger vessels that are “Heysham-max” and the Norse Merchant vessels are relatively modern;
- Development of traffic to Isle of Man;
- Further development as regional port for bulk and semi-bulk cargoes;
- Heysham to M6 Link Road: Development of fast road link from Port to M6 to reduce journey times and increase journey time reliability;
- Policy trends may favour development of unaccompanied RoRo traffic.

Conclusion

Heysham has three well-established ferry operators mainly handling unaccompanied trailers, which policy trends may favour, and the Irish Sea RoRo market should be entering a more stable period of steady growth. The major constraints relate to maritime access and relatively poor road access. The port is rail-connected, but we believe it is unlikely that a commercial case could now be made for developing piggyback rail services for unaccompanied trailers (as was once envisaged), however there could be a business case for handling trade cars by rail. Given current market and policy trends, its future role is likely to be as a significant RoRo facility serving the GB-Ireland market (i.e. a national role).

Lancaster

A trust port owned by Lancaster Port Commission and located at the mouth of the River Lune. The port has a dock (Glasson Dock) and river berths, which can accommodate small coastal and short sea vessels. A variety of general cargo and bulk cargoes are handled, although there are severe restrictions on the size of vessels that can be handled.

The port has a single key customer in Glasson Grain, which makes it vulnerable if that customer chose to leave the port. The port has reasonable road access, given the volume and nature of the traffic handled. The port performs a useful role in providing facilities for exporting bulk materials to the Isle of Man, providing some competition to the Isle of Man Steam Packet Company which otherwise enjoys a monopoly on freight movements to the island.

CONSTRAINTS:

- Maritime access restrictions: Maximum draft (4.5 metres) restriction limits the size of vessel that can be accommodated, while average short sea and coastal vessel size is increasing.

- Access to M6: Road access via Lancaster city centre.
- Significant regional competition, particularly from Heysham.

OPPORTUNITIES:

- Maintaining role as local port for a few key shippers of dry bulk cargoes, using low cost facilities.
- Sustainable distribution role, taking cargo as close as possible to its inland origin/destination.

Conclusion

Restricted maritime access to port and poor road access, plus strong regional competition from facilities with geographic advantages, may lead to a reduction in traffic volumes over the next 20 years. This could undermine the economics of the port, despite its likely low operating costs, leading to its closure. However, it appears to have an established relationship with a key customer. Given current market and policy trends, its future role is likely to be as a small sustainable distribution hub (waterborne and onward road distribution), principally serving a sub-regional hinterland.

Liverpool

As by far the largest port in North West England, the Port of Liverpool has a number of key developments and proposals including:

- The development of the Langton River berth to provide additional deep water RoRo berth for services to Ireland. A Harbour Revision Order has been obtained, although no customer appears to be in place. The Port hopes to have an operational facility by 2010.
- The development of a post-Panamax berth outside the lock gates at Seaforth and reorganisation of the container yard to provide additional space for the storage of containers;
- Rearrangement of the Seaforth facilities, involving the relocation of the present scrap metal operation and dredging the enclosed dock to 11.5 metres to accommodate panamax bulk carriers.

The Port is therefore seeking to reorganise its layout to maximise its existing deep sea container port capacity and then seeking to expand its facilities to cater for larger ships.

With expansion in traffic volumes through the port, inland congestion is becoming an issue. There is congestion on the A5036 at peak times and in about ten years time the Highways Agency is concerned that the route would have serviceability problems that might have an impact of the economic prospects of the port and the local area.

Similarly, the lack of the Olive Mount Chord limits the number of trains that can operate in any particular day into and out of Seaforth Docks and the port is in discussion with Network Rail about increasing the loading gauge to W10.

CONSTRAINTS

- Potential capacity increases in LoLo market in SE England, although demand is likely to outstrip supply. The development of deep sea LoLo capacity at Teesport would threaten Liverpool's northern Britain market and proposals to develop deep sea container port facilities at Bristol and Hunterston could also pose some threat, if only in providing a west coast alternative (in planning terms) to Liverpool;
- Lack of Olive Mount Chord to allow efficient operation of rail freight services into and out of the Port of Liverpool, likely to lead to network capacity issues by c. 2010;
- Bootle Branch Line to port only cleared to W9 loading gauge, while standard clearance on WCML is W10; this means that high cube deep sea containers, increasingly used by shipping lines cannot be accommodated on the branch line except on lowliner or megafret wagons;
- Any significant environmental issues related to the site for the post-panamax berths;
- Strong competition for RoRo freight volumes from Holyhead, which has increased freight capacity (although less strong in unaccompanied market, with little space);
- Lack of riverside RoRo berths (although Peel Ports have necessary permissions in place to develop such berths, if a suitable customer is available);
- Local opposition to expansion of port and new access road if negative impacts on residents;
- Congestion on port access road (A5036) in medium to long term.

OPPORTUNITIES

- Possible failure of SE GB ports to significantly increase LoLo capacity, leading to requirement for capacity elsewhere in GB; development of two post-panamax berths outside lock gates at Seaforth to accommodate latest generation of deep sea ships and/or development of additional lo-lo capacity to cater for organic growth in existing traffic within docks;
- Opportunity for west coast port to serve deep sea services using post-panamax vessels on direct Mediterranean-East Coast North America services (and Liverpool is best located port on West Coast to serve whole of GB);
- New port access road, perhaps by 2014;
- Enhanced rail access to port, with loading gauge clearance to W10 (at an estimated cost of about £1 million) and re-instatement of the Olive Mount Chord (estimated cost of £7-9 million);
- Policy/legislative changes relevant to RoRo market which should increase Liverpool's market share for longer accompanied routes and lead to modal switch to unaccompanied routes;
- Continuing growth in the Irish Sea RoRo freight market, both to the ROI and Northern Ireland;
- Development of Langton riverside RoRo terminal;
- Deep water facilities and economies of scale available to shippers should allow Liverpool to continue to dominate many semi-bulk and bulk trades in the North West region;
- Development of a major multi-modal distribution hub at the port, based on port estate (freight village concept with expansion of LIFT) with good road, rail and maritime links and warehousing to serve both the North West and Irish markets.

Conclusion

Liverpool's LoLo traffic should continue to grow and the port can expand its capacity within the docks by moving some existing customers with minimal capital expenditure. However, the lock gates cannot accommodate post-panamax vessels, the world's container fleet is increasing in size and these post-panamax vessels are now generally deployed by the major lines between the Far East and Europe and between the Far East and the west coast of the United States. Trade growth between Europe and East Coast North America may not, at present, justify the use of post-panamax vessels up to 2009, but a number of factors may create an opportunity for a west coast port to serve post-panamax vessels on round the world services that are not calling at the same range of deep sea container ports in the North Sea. In this event Liverpool is likely to be the west coast port in the best position to develop post-panamax berths in that it is well-located to serve the whole of the UK market from a central point, with good road and rail links to all GB regions and through its feeder links to Ireland.

In the RoRo freight market Liverpool is in a strong competitive position, with its location, deep water and good road links providing the port with "natural" competitive advantages, particularly if the port is able to develop the Langton River berth on the back of an agreement with a customer. The market appears to have stabilised as excess capacity has been removed following the financial difficulties of Norse Merchant Ferries (to be purchased by Norfolk Line) and P&O's partial withdrawal from the market and this should allow Liverpool to take advantage of likely market growth. Liverpool's market share should be enhanced by changes in the cost of road haulage, due to changes in working time legislation and road haulage taxation.

Tranmere Oil Terminal (owned by Peel Ports) is solely concerned with the import of crude oil for Stanlow oil refinery, forwarding the oil by pipeline.

Given current market and policy trends, Liverpool's future roles are likely to be as:

- A major deep sea "gateway" port for the region and Great Britain, handling the full range of deep sea traffics;
- The only west coast deep sea container port, able to accommodate post-panamax vessels handling both direct calls by deep sea vessels, transshipment traffic to Ireland and traffic fed from other UK and Continental deep sea container ports;
- The major Irish Sea RoRo port in the North West region, following the development of a riverside terminal;
- A major sustainable distribution hub (waterborne, rail and road freight transport), serving a national hinterland, with associated warehousing.

By 2025, land availability would be a constraint to the port's development and enhancements are likely to be required to both road and rail access to cater for the increased volumes of traffic.

Manchester Ship Canal

The 35 mile long Manchester Ship Canal is a linear port, stretching from Eastham locks, where the canal joins the Mersey estuary, inland to Manchester (Salford and Trafford). The Port also offers the QEII Dock, which has a separate entrance off the estuary outside the Eastham lock gates. The Canal has a long established business in petroleum and chemicals partly based around the location of Shell's biggest refinery in the UK at Stanlow. There are various facilities along the length of the Canal ranging from dedicated berths serving tank storage and or plant to port complexes at Runcorn, Irlam and Ellesmere Port. The major traffic is crude oil and refined petroleum products via Shell's refinery at Stanlow, but the Canal's wharves also handle a wide variety of other bulk cargoes such as chemicals, fertilisers, potash, salt and maize. Traffics handed across many wharves, such as Cerestar Wharf and Irwell Park Wharf are stable and are expected by the port to grow in the future. Since April 2004 there has been a weekly container service to Irlam Wharf, although this traffic is likely to switch to Port Salford if this development is given planning permission.

Although traffic across most of the wharves is reasonably stable, there appears to have been a shift of traffic towards the deeper water facilities on the Canal, such as at Ellesmere Port.

There are a number of potential developments on the Canal:

- Potential development of site at Ince as a facility for handling dry bulk cargoes ("Port Ince"), which is the subject of a planning application; Peel also has plans to develop 100 hectare site as a Sustainable Resource Recovery Park, which would take advantage of the availability of rail, road and waterborne transport;
- Barton/Port Salford is a potential development on an inland, rail-linked distribution park, with an intermodal terminal and maritime access via the Canal; a planning application has been made for this scheme; the Highways Agency commented that the interface with the M60 was likely to be an issue because the route is already congested;
- There are a number of other potential developments along the Canal, principally for waste treatment and recycling.
- The further development of a new coal receiving terminal at Ellesmere Port linked by coastal shipping to the deep-water coal import facility at Hunterston on the Clyde.

CONSTRAINTS

- Competition from Liverpool and Garston for many trades, given the additional shipping costs involved in using the Canal and reasonably cheap road haulage;
- Limited maximum ship size compared to Liverpool.

OPPORTUNITIES

- Development of distribution park at “Port Salford”, with rail and road connected distribution sheds and a short sea/coastal shipping berths on the Canal;
- Sustainable distribution role, taking cargo as close as possible to its inland origin/destination, by both waterborne transport and rail.

Conclusion

The Manchester Ship Canal has considerable potential for sustainable distribution, taking cargo inland closer to its origin or destination. In part to address this policy need, Peel Holdings is seeking to develop a major distribution park at Port Salford to serve the general distribution market.

Land availability seems unlikely to be a constraint on the development of the port. Given current market and policy trends, its future role is likely to be as the location for sustainable distribution hubs (waterborne, rail and road freight transport), principally serving a regional hinterland. It would also provide a suitable location for the development of industrial activities requiring access to maritime transport.

Silloth

The port of Silloth handles a variety of bulk cargoes (principally grain, molasses and fertilisers) and competes principally with Workington for traffic with origins and destinations in the North/West Cumbrian sub-region. However the mainstay cargo of the port continues to be specially selected bulk grain discharged directly into Carr’s Flour Mills, located on the north side of New Dock. The port has recently constructed a storage and distribution facility for molasses. Fertilisers are another inward traffic.

The facilities at Silloth are within an enclosed dock system, with seven berths offering a total quay length of 590m. Depth is limited to 5.5m and the port is restricted to handling vessels of about 3-4,000 dwt. Road access is adequate, given the volume and nature of traffics handled, and there does not appear to be any demand for improved access.

CONSTRAINTS

- Maritime access restrictions: maximum draft (5.5 metres) restriction limits the size of vessel that can be accommodated, while average short sea and coastal vessel size is increasing;
- Relatively remote from major markets, largely serving a sub-regional hinterland, which makes it difficult to attract new cargoes;
- Dependent on a single key customer;
- Significant regional competition, particularly from Workington.

OPPORTUNITIES

- Maintaining role as local port for a few key shippers of dry bulk cargoes, using low cost facilities;
- Sustainable distribution role, taking cargo as close as possible to its inland origin/destination.

Conclusion

Restricted maritime access to port and poor road access, plus strong regional competition from facilities with geographic advantages, may lead to a reduction in traffic volumes over the next 20 years. However, its ownership by a major ports group should help to ensure its commercial survival due to the economies of scale that ABP can provide (e.g. in terms of spreading management overheads across a number of ports). In addition, the port has a few customers, operating in niche markets, which have long-term relationships with the port. Land availability is limited, although this should not be a significant constraint as the port is unlikely to develop to any significant extent over the next 20 years. Given current market and policy trends, its future role is likely to be as a small sustainable distribution hub (waterborne and road freight transport), principally serving a sub-regional hinterland.

Workington

The Port of Workington, which is owned by Cumbria County Council, handles a range of mainly bulk traffics for its sub-regional hinterland. Some traffic is related to industrial plants in West Cumbria, while others are related to the agricultural hinterland of the port. In 2002 the port lost its major liquid bulk traffic (phosphoric acid) due to the closure of a local manufacturing facility and this damaged its financial position. A tank farm located at the port serves local petrol stations. Traffics have fluctuated in recent years and continue to do so – steel rail exports from the Corus plant are set to disappear, for example.

A key constraint for the port has traditionally been that the port's finances have not been ring-fenced and so the port has been unable to invest in additional facilities and in maintenance of its core infrastructure. The major preoccupation of the Port therefore has been the implementation of the recommendations of a Master Plan produced by consultants in 2004. This will involve a greater degree of financial independence for the port, with a structure closer to a trust port. An investment strategy is being pursued that would involve the development of a tidal harbour marina and residential area as well further consideration of the development of cruise activity at Workington.

Road access via the A66 to the M6 is good and the Highways Agency has a major trunk road proposal for the A595 from Workington towards Carlisle, which may assist the port to some extent. The port is rail-connected and has developed rail traffics that are not necessarily handled over the quay. It is therefore acting as a rail freight terminal for the sub-region. However, the line from Carlisle has only limited access due to anticipated signalling

and the difficulty in finding suitable paths due to passenger traffic. Network Rail state that, in due course, they would be renewing the signalling on the line and this would provide a significant number of additional freight paths at a relatively low cost.

CONSTRAINTS

- Relatively remote from major markets, largely serving a local industrial and agricultural hinterland;
- Significant regional competition, particularly from Silloth and Barrow;
- Ownership by local authority which has historically taken any surplus but is unable to make any significant investments in infrastructure; this has led to the port being in a weak financial position.
- Investment is required to rehabilitate essential port infrastructure.

OPPORTUNITIES

- Implementation of recommendations of Master Plan, particularly in relation to future structure providing greater commercial independence;
- Maintaining role as local port for shippers of dry bulk cargoes;
- Sustainable distribution role, taking cargo as close as possible to its inland origin/destination, including the further development of the port as a railhead and sub-regional distribution centre.

Conclusion

Workington has been in a poor financial position in recent years, due to the loss of a major traffic and a historic lack of investment in the port's facilities. The local authority is seeking to develop a free-standing legal entity that would have ring-fenced finances and operational independence. Given a sustainable financial future, the port should be able to perform a role in developing sustainable distribution with its local industrial hinterland and its reasonable road and rail links. Land availability is unlikely to be a constraint on the development of the port. Given current market and policy trends, its future role is likely to be as a sustainable distribution hub (waterborne, rail and road freight transport), principally serving a sub-regional hinterland. There may be opportunities, for example, for the port to develop as a base for an offshore wind farm in the Solway Firth and to handle additional rail-borne container traffic.

5.3 Economic Significance of North West Ports

Introduction

This section explores the economic significance of the ports sector in the North West and the wider UK economy. Subject to the limitations of the data, we have attempted to highlight the range of benefits and disbenefits of port activity. The analysis has been restricted to

secondary data sources and has not included any primary research. However, the analysis has been informed by the consultations which have been undertaken as part of the study.

Nature of the Ports Sector

Chapter 2 of report examined in detail the nature of the region's ports and their market environment. However, in terms of the economic importance of the region's ports, it is helpful to bear in mind that the core activities of the ports support a wide range of related sea and shore side activities. In addition, the importance of many ports typically extends well beyond the region within which they are located. For example, the Port of Liverpool serves businesses across the North of England and beyond.

NWDA's prioritisation of the maritime industry as a cluster recognises the fact that ports (especially large ports) serve as a catalyst for other industries, forming the core of a maritime "cluster." It is difficult to pin down exactly which activities may be said to be in such a cluster. However, as Langen (2004) put it: "The port cluster consists of all economic activities related to the arrival of goods and ships."⁵

The main strands of activity that take place in and around ports therefore relate to:

- **Core Port Activities.** The primary activity of ports is the handling and processing of bulks, freight and passengers for local, regional and international markets. This includes the operation of core facilities and equipment, including locks, docks, quays warehousing and quay cranes, which are supported by value added facilities, such as tanking, weighbridges, and mobile equipment. The activities need not be undertaken directly by the port operator, but they are typically located in the port.
- **Logistics, Storage and Distribution.** The ports support a range of logistics, storage and distribution activities, ranging from general logistics (i.e. loading and unloading of ships, storage and warehousing of goods, and basic distribution activity) to higher value added activity (i.e. quality control, breaking down, repacking, assembly, testing etc). These tend to cluster in close proximity to the ports, often being intensive users of land in and around the port. For example, regional distribution centres tend to favour locating in relatively close proximity to the port to secure the benefit of this proximity, otherwise they might as well locate well beyond.
- **Other supporting activities** such as maritime commerce and engineering – these activities are related to the core activity in the ports but not wholly dependent on them. Education, training and skills provision related to the ports also come into this category. The related support services are now less likely to need to be based in proximity to the ports, but they often tend to be located closely for historical reasons.
- **Manufacture.** A range of manufacturing activities locate in close proximity to the region's ports, with the degree of proximity typically being determined by the

bulkiness of the materials and the costs of transport. Examples include food manufacture and petrochemicals.

In addition, the region's ports play an important role in importing raw materials and exporting finished goods for a wide range of manufacturing and production sectors. Whilst there is very limited data on this relationship in the North West, a US study (Langen, 2004 – see Table 5.1) found that the value of GVA accounted for by port services ranged widely. Those sectors for which water transport accounted for between 1-2% of GVA generated had a significant use of port services for import and/or export, including petrochemicals, agricultural chemicals, iron and steel and food manufacture. In addition, there will be other sectors for which water transport has a minor significance, including some service sector industries (and hence they do not appear in the summary table).

Table 5.1: The Importance of Water Transport as an input for Manufacturing Activities, 1999

Industry (SIC)	Water Transport as % of Sectoral GVA
Petroleum refining and related products	2.6%
Crude petroleum and natural gas	1.9%
Agricultural fertilisers and chemicals	1.7%
Primary iron and steel manufacturing	1.6%
Plastics and synthetic materials	1.2%
Food and kindred products	1.0%
Gas production and distribution	1.0%
Coal mining	0.7%
Stone and clay products	0.5%
Electric services	0.5%
Industrial and other chemicals	0.3%
Metallic ores mining	0.3%
General industrial machinery	0.1%
Tobacco products	0.01%

Source: US Department of Commerce, Bureau of Economic Analysis, cited in Langen (2004)

⁵ Langen (2004) "The Performance of Seaport Clusters: A Framework to Analyse Cluster Performance and an Application to the Seaport Clusters of Durban, Rotterdam and the Lower Mississippi" PhD Thesis, Erasmus University

The region's ports have a range of economic benefits, as well as various disbenefits – these are summarised briefly below in the summary table.

Benefits	Disbenefits
Support of businesses and employment in a range of activities which are directly related to the operation of the port. In addition, a wider range of business activities (and hence employment) which support the operation of the ports (e.g. logistics, maritime commerce, etc) and which form part of the wider maritime cluster.	Range of environmental disbenefits from the operation of ports, including discharges and emissions from cargo handling, noise pollution, etc – ports are often in close proximity to residential communities
The efficient import and export of raw materials and finished goods by firms located within and outwith the region. In some instances firms engaged in added value activity, typically manufacturing, may choose to locate in close proximity to the port.	Congestion and pollution on road access routes (although the use of ports can reduce total overall mileage)
Provision of national and international connectivity and hence support of trading links between countries – this provides the basis for the import and export of bulks and other inputs and finished goods and is an important aspect of the UK and the region's competitiveness. Some ports play a particularly important role in the activities of some sectors (e.g. Barrow in Cumbria and its role in the transport of nuclear materials from Sellafield)	
Multimodal access to markets, which supports the supply chain between industries. This can play an important role in reducing the use of road transport, congestion and the associated costs.	
Connectivity for the movement of people between parts of the UK and internationally; this is an important aspect of the region's tourism industry. Although travelling by ship is typically less time efficient than travelling by car or air, it has a lesser environmental impact.	
Attraction of inward investment – the availability of ports can have an impact on foreign firms' investment decision	
Support for leisure cruising and related tourism activity	

The role of ports in the North West region as economic drivers has changed over the past 2-3 decades. Whilst ports continue to be a hub of port related activities and services, they have become less important locations for the clustering of manufacturing activity. In the past, towns and cities in the North West with ports grew on the back of the attraction of industries which imported raw materials through the port, who undertook their value added activity close to the port. Liverpool is a good example of this, with for example the food processing industry growing strongly both in close proximity to the port estate and on industrial estates (such as Aintree) elsewhere across the city. Other sectors in the North

West grew in part due to the availability of good port access including the chemicals sector, paper manufacture, and iron and steel production. In all these cases, close proximity to a port was desirable due to the significant costs of transporting bulky input or outputs to and from the manufacturing facility.

Today, the tendency for manufacturers to locate in immediate proximity to the port is far less apparent than in the past. The reasons for this vary from sector to sector but include:

- The decline within the region of those manufacturing sectors for which close proximity, to the port and hence good access were important (such as food manufacturer). Linked to this, there has been strong growth within the region of knowledge based sectors for which proximity to the port is not a consideration (although good port access may still be a consideration for some of these);
- The growth in containerisation, with containers passing through the port with the minimum of handling costs to their destinations in the hinterland;
- The introduction of IT technologies and related changes in the manufacturing and distribution practices of sectors. Many manufacturers have located their manufacturing activities closer to markets (rather than to sources of inputs).

The growth of new distribution practices has, however, led to the development of significant centres of logistics activities with port operators seeking to benefit from this growth. The LIFT zone in Liverpool is a good example of the development of a centre for logistics activity.

In contrast to ports, airports have become much more important drivers of economic development activity, in particular for the knowledge economy. Many firms in these sectors, including high value manufacturers and a broad range of service sectors, value the proximity to international airports due to the access they provide to international passengers and freight services and hence access to suppliers, markets and partners.

Economic Significance of the North West Ports

Unfortunately, there is limited data for most of the economic and business benefits which the region's ports generate. Consequently, there is relatively little detailed understanding of the nature and scale of these benefits and disbenefits. However, NWDA commissioned a mapping exercise for the region's maritime cluster which provided useful findings on the nature and scale of the sector or cluster within the region. The findings of this study are included in the analysis below.

Volume of Trade

Section 2.4 discussed in detail the importance of the region's ports in terms of the volume of cargo and the change over time. The key points are:

- In 2003, the region's ports handled 44.7 million tonnes, which represents 8.2% of total GB port traffic throughput. Of the total traffic distributed inland by road or rail to or from GB ports, NW ports handled 21 out of 209 million tonnes (10.0%).
- Total tonnage handled by the region's ports has increased from 43.3 million tonnes in 1993 (+3.2%, compared to +10% for GB as a whole).
- Much of the region's growth in tonnage, like for the country as a whole, is explained by the rapid increase in unitised cargoes. This has grown from 8.5 million tonnes in 1993 to 14.8 million in 2003 (an increase of 7% compared to 5% nationally).
- The Port of Liverpool dominates the total tonnage and unitised cargoes handled. In 2003, it accounted for 31.7 million tonnes of the 44.7 million handled within the region (71%), and 9.5 of the 14.8 million tonnes of unitised loads.
- The other source of rapid traffic growth through North West ports has been Irish Sea Ro-Ro traffic, with most growth focussed on Liverpool and Heysham.
- Of the 28.6 million tonnes of international freight generated in the NW region in 2003, only about 30% of this freight was handled through NW ports. This is because, while NW ports handle a high proportion of the region's international bulk freight, South East ferry services carry the vast majority of the region's Continental imports and exports and its deep sea imports and exports are handled at South East deep sea container ports, as well as Liverpool.

Business and Employment

The cluster mapping study undertook detailed analysis of the port and port related businesses⁶. The study covered the following port related activities: port company/operations; short and deep sea shipping; Logistics, distribution and haulage; marine and offshore engineering; cruising and passenger ferries; fishing; and education and training.

The study identified for the cluster, for 2003, the following:

- 753 companies;
- Total turnover of £3.3billion (3.3% of NW GVA);
- Employment of approximately 18,000 employees (0.5% of NW total).

Table 5.2 gives a breakdown of these headline figures for the maritime cluster into broad categories. The key point is that whilst the principal activities associated with the operation of the port generate significant turnover and employment, related logistics and distribution activity is the single sector which generates the greatest turnover and associated

⁶ The study maps out the cluster by searching the commercial database FAME.⁶ This was done by applying three filters: sourcing of postcode data, using keywords relating to the maritime sector to search the trade description entries of companies on the FAME database, and interrogating the database using Standard Industrial Classification (SIC) codes that describe company activity. The data generated was then cross-checked against a number of information sources, including: the Mersey Maritime database, Association Membership Lists, Websites, and Port Directories. The mapping study also examined the trends in the main components of the cluster. This is done by looking at the change in turnover experienced by companies in these components between 2001 and 2002.

employment. The significance of “other supporting activities”, which encompasses a wide range of activities related, to varying degrees, to the operation of the port, illustrates the magnitude of the catalytic effect North West ports have. Some of these, such as maritime commerce and training, which serve a much larger market than that generated through the region’s ports and are not necessarily dependent of these ports (although in practice this will vary between sectors).

Table 5.2: Economic Activity in North West Ports by Broad Category

Activity	Number of Companies	Adjusted Turnover (£000s)	Adjusted Employees
Shipping and related port infrastructure and operations	80	£283,504	2,173
Logistics, distribution and haulage	304	£510,035	4,621
Fishing	11	£71,966	546
Leisure	4	£1,098	40
Other supporting activities	354	£2,388,955	10,031
Total	753	£3,255,558	17,411

Source: Ci Research (2003) Maritime NW Cluster Study

Table 5.3 provides a more detailed sectoral breakdown. The two largest activity groups, in terms of turnover and employment, are maritime commerce and maritime engineering. Both of these are not wholly dependent upon the North West’s ports.

Table 5.3: Detailed Breakdown of North West Ports Cluster

Activity	Number of Companies	Adjusted Turnover	Adjusted Employees
Haulage	244	£334.9m	3,187
Maritime Commerce	233	£1,409.3m	3,764
Marine Engineering	115	£841.6m	6,066
Logistics and Distribution	60	£175.1m	1,434
Port Company/Operations	54	£122.3m	1,527
Short Sea Shipping	23	£159.9m	554
Fisheries	11	£71.9m	546
Yachting	4	£1.1m	40
Deep Sea Shipping	3	£1.2m	92
Education, training and skills	3	£3.0m	58
Port Industry	3	£135.1m	143
Total	753	£3,255.6m	17,411

Source: Ci Research (2003) Maritime NW Cluster Study

In terms of trends over time, the mapping study provided some information on the change in the cluster between 2001 and 2002. It found that all but two of the activity groups have grown, although this is based on the numbers of firms experiencing a change in turnover

rather than the overall absolute change. Haulage firms were particularly likely to have experienced an increase in turnover.

Table 5.4: Trend in Ports Cluster Components (2001-2002)

Component	Companies with a rise in turnover	Companies with a fall in turnover	Component appears to be...
Short Sea Shipping	19	4	Growing
Deep Sea Shipping	2	1	Steady
Logistics and Distribution	36	15	Growing
Haulage	164	45	Growing
Maritime Commerce	137	63	Growing
Marine and Offshore Engineering	76	26	Growing
Education, training and skills	3	0	Growing
Port Industry	2	1	Steady
Fisheries	7	1	Growing
Port Company/operations	40	9	Growing

Source: Ci Research (2003) Maritime NW Cluster Study

Local Perspectives

It is helpful to get a more local perspective of the ports sector – this is presented below, with the key ports grouped by sub-region.

Merseyside

By far the greatest amount of port activity takes place in Merseyside. The sub-region dominates the cluster, with 495 companies, which have a turnover of £1.9bn. Besides having the largest port in the region, it also has a large maritime commerce sector which is demonstrated by the large number of maritime businesses (37% of the cluster)⁷.

Seaforth: Also known as the Port of Liverpool, Seaforth is the largest port in both Merseyside and the North West. Liverpool is the major northern port for unitised cargoes and the main UK port for container traffic between the UK and America and Ireland. It is one of Northern Europe's top 10 container handling ports, handling around 5% of the total freight of UK ports. It is also the largest Freeport Zone in the UK. Indeed, in 2003 the port handled over 31 million tonnes of traffic, or 71% of the North West total. In tonnage terms, its single most important function is as an oil terminal for Stanlow refinery, representing over a third of total cargo weight handled.

⁷ The Liverpool City Regional Development Plan, supported by Mersey Maritime's own study, provides additional information on the size of the cluster in Merseyside. It identifies 920 companies in the cluster (the NW Cluster study identified 495), 14,000 employees (the NW cluster study does not provide a figure) and £1.5bn combined annual turnover (the NW Cluster study states £1.9bn).

Garston: The Port of Garston is the most inland of the Mersey ports and comprises a 200-acre dock estate. The majority of its traffic originates from the short sea market and its handles around 0.6 million tonnes per annum. Its markets have changed over the past decade, away from coal and industrial bulks which has brought new investment. Its cargoes consist mainly of dry bulk including special automotive steels, grains, animal feedstuffs, minerals, steel and timber. Garston deals primarily in short sea shipping, and handled 433,000 tonnes of traffic, 1% of the total for the North West.

Twelve Quays (Birkenhead): This port is a major facility for RoRo in the North West with services serving the Irish market.

Lancashire

There are 90 companies in the Lancashire cluster, which turn over £258m. The most significant strand of activity is haulage (47% of businesses in the cluster):

- Heysham: Located in Lancaster, Heysham is the largest port in the sub-region in terms of traffic. It handled over 4 million tonnes of freight in 2003, which was 9% of the total for the North West. It hosts an important ro-ro service to Ireland.
- Lancaster. This port handled 156,000 tonnes of traffic in 2003, 0.3% of the North West total.
- Fleetwood: Fleetwood is located in Wyre, and in 2003 handled 1.6 million tonnes of traffic, or 3.6% of the regional total.

Cumbria

80 companies are in Cumbrian maritime cluster, turning over £680m. The major activity is haulage (33% of businesses in the cluster).

- Workington: The biggest port in Cumbria, Workington handled 258,000 tonnes of traffic in 2003, 0.6% of the North West total. The port has struggled financially in recent years.
- Silloth: The main goods handled by the port of Silloth are grain, fertiliser and cement. In 2003 it handled 155,000 tonnes of traffic, just 0.3% of the North West total.
- Barrow: Located in Barrow in Furness this port is strongly connected with the nuclear sector and facilitates tourism in the Lake District. The port handled 241,000 tonnes in 2003, 0.5% of the North West total. It has developed a strong relationship with the nuclear sector, although this accounts for relatively modest tonnage and ship movements, and is also proving successful in developing its offshore services activity (supporting oil and gas and wind farm developments in the Irish Sea).

Cheshire

The sub-region contains 70 companies, which have a turnover of £303m. Haulage is the major activity, accounting for 41% of all activity.

Manchester Ship Canal: Formerly a major port in the UK, the canal has declined massively with the decline of the city's textile industry and the introduction of container systems. However, it handled over 6 million tonnes of traffic in 2003, 13% of the regional total.

Regional Economic Developments Impacts of Growth Scenarios

As noted above, the scenarios suggest that, given forecast trade growth up to 2025 (based on analysis of historic trends on a commodity-by-commodity basis and the assumption that historic trends in trade growth will continue for the next 20 years), the North West is likely to require additional port capacity in a number of respects:

- The unit load trades over the next 20 years, in particular at Liverpool (LoLo and RoRo) and at Heysham (RoRo);
- Dry bulk and semi-bulk traffics will also require additional capacity by 2025.

If the North West does require additional capacity over the next 20 years, there is regional economic development rationale for encouraging the necessary investment, in terms of the loss of business competitiveness and additional environmental disbenefits. These benefits include:

- Providing firms in the region with access to efficient port services and hence the efficient movement of goods and materials in and out of the region (the consequences of not being able to achieve this are outlined briefly below);
- The ability to retain and attract port related businesses in and in proximity to the port, and hence the wealth and employment this supports;
- The potential to encourage the location of additional economic activities in proximity to the ports. Whilst the scope to achieve this amongst value added activity is limited given the types of sectoral trends and their locational implications highlighted earlier above, there is scope to attract added value logistics services to the major ports).

Needless to say, the ability to achieve these benefits in the future is not solely dependent upon addressing port capacity issues, but also issues of adequate surface access and wider support needs.

However, the regional economic development implications of demand for port capacity exceeding supply in the future does differ by type of activity, in particular deep sea and ro-ro services:

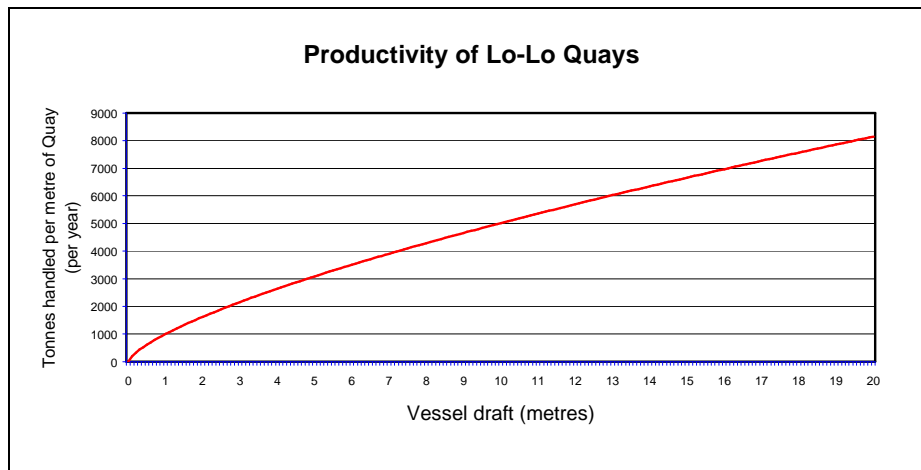
-
- The region's RoRo services primarily serve Irish Sea trade, with services between Liverpool, Heysham and Fleetwood. Given the nature of the trade flows, much of the RoRo cargoes tend to pass through the North West rather than originating in or being destined for it. For example, much of the traffic simply passes through the north on its way into mainland Europe. Consequently the impact of under capacity in RoRo services in the future in the region's ports will not necessarily be concentrated upon the region's businesses, although those within the region which do trade with Ireland will be affected and this will have some impact upon the region's competitiveness (as a consequence of higher prices at local ports or having to access RoRo services at ports with free capacity in other regions).
 - In terms of the potential impact of under capacity in the region's deep sea facilities, the consequences for the region's competitiveness are likely to be more significant. The main reason for this is that the customers of the region's deep sea services are more likely to be based in the region (but also the wider north of England). The lack of capacity could impact upon regional competitiveness in a number of ways, including the potential to push up the costs of firms (especially for imports) as they source capacity at ports further afield (possibly North East and South East ports). A related impact could be extra traffic entering the region by road (e.g. the M6 and M62) and possibly by rail, using up scarce capacity.

TECHNICAL ANNEX: CALCULATING PORT CAPACITY

1 Calculating port capacity

The critical measures of port capacity for planning purposes are available quay length, available draft and acreage. To translate the port inventory of facilities into a measure of port capacity, different formulae are applied according to the different cargo categories. The calculations also take into consideration measures of port productivity, which are different for each cargo category.

Figure 1



Source: MDS Transmodal Ltd

2 LoLo Terminal Capacity

This report uses a model that calculates the current capacity of a LoLo terminal as a function of:

- The available length of quay;
- The available depth of water;
- The area available for storing containers;
- The sizes of vessels operating in given trades.

Quay length determines how many ships can be berthed, and the number of cranes that can be operated.

Depth of water determines the size of ship that can be handled. The larger the ship, the more rapid container handling will be as less time is used in ships manoeuvring on and off the berth and more cranes are likely to be employed per metre of ship.

The area available for storing containers is critical. A port may be able to physically accommodate large ships, but sufficient storage area is required to enable containers to dwell in port while awaiting a ship for export, or collection by importers. Insufficient area will act as a constraint on volume of containers that can be stockpiled and therefore the number and size of ships the port is able to handle.

A port's capacity is not only defined by its physical characteristics, but is also a function of the sizes of ships calling at the port. In this report assumptions are made about the minimum draft of vessel expected to operate in a given trade.

Assumption: ship productivity

Assumptions regarding berth productivity are based on an exponential relationship between draft and handling speed, expressed in the chart in Figure 1.

Assumption: quay length or area

Deep water berths will be able to achieve greater productivity on the berth, but it does not necessarily follow that faster ship handling increases the effective capacity of a port or terminal. The area available for container stacking and the average dwell time for a container in the port, must also be taken into account.

The key assumption used in this report defines capacity by *either* quay area *or* length of quay whichever is the less of:

- | |
|---|
| <p>a) Port area @ 150,000 tonnes per hectare per year, or
 b) Quay length @ (vessel draft^{0.7}) * 1,000 tonnes per metre of quay⁸</p> |
|---|

The capacity of a LoLo terminal or berth would be taken as the lower of these two calculations.

Assumption: Vessel draft

The vessel draft used in the calculation above is a weighted average reflecting the sizes of ships trading on different routes that call at a particular port, rather than the depth alongside the berth. Optimum ship size in a given trade is based upon the volume of cargo available; the frequency demanded by the market, port handling speeds and the economies of scale of the vessel and its fuel consumption. The longer the route and the faster the port handling, the larger the optimum ship size and the greater the port's effective capacity. In a competitive market, shipping lines strive to achieve the optimum ship size and characteristics, therefore some ports will be able to accommodate short sea and feeder

⁸ This is the observed relationship for ship productivity based on sample of GB ports

vessels that operate on European routes, but will not be suitable for large ships on round the world deep sea services.

It is not possible to define the precise capacity of a port system without reference to the demand placed upon it and since demand will change over time, generally as ships increase in size, so a port's capacity will also change with time, even if the physical characteristics of a port stay exactly the same. For example, a given container quay may have greater capacity if larger vessels from more distant markets serve it. However, if those deep sea ships become too large to enter the port in future, then it follows that port's capacity will actually fall, as it will only be accessible to smaller ships that are handled at lower levels of productivity.

MDS Transmodal calculates capacity in such a way as to reflect the changes in ship call profile for a given route over a period of time. This calculation is directly influenced by outputs of the MDS Transmodal trade forecast model (see next section).

3 RoRo Terminal Capacity

The principal determinant of capacity at a RoRo terminal is the available parking area. An individual linkspan can offer huge capacity, particularly if handling accompanied trucks, and is less important a constraint. The great difficulty in assessing capacity at a RoRo berth is that the same berth can handle tourist cars, accompanied or unaccompanied trucks or trade cars.

Assumption: The quasi tonne

Our approach is to 'normalise' these different trades through defining a 'quasi' tonne, which corresponds to an actual tonne of cargo carried in accompanied trailers. The quasi tonne is used as the base unit for RoRo capacity calculations.

- The mean weight of cargo in a trailer (imports plus exports) is approximately 11.5 tonnes and each hectare will park around 100 trailers.
- An unaccompanied trailer can be expected to dwell in a port for around a day. Taking fluctuations throughout the week and seasons, one would expect each trailer space to be used five times a week or 260 times per year. Therefore each hectare would be expected to handle 300,000 tonnes per year:

$100 \text{ trailers} \times 260 \text{ turnover} \times 11.5 \text{ tonnes} = 300,000 \text{ tonnes}$
--

- Accompanied trucks move more rapidly through a port, but will still require the space to accumulate before each sailing. The assumption is that the same hectare can accommodate twice the volume of unaccompanied traffic, i.e. 600,000 tonnes per hectare per annum.

- The area required for tourist cars is related to the frequency of service and the size of ship to be loaded. The assumption is that the peak day of the year will handle around 1% of annual traffic, so that a daily service will require one hectare of ‘export’ parking area for each 40,000 cars (i.e. 400 cars/hectare/0.01). 30% is added to this figure to allow for space for import checking and a further 30% for manoeuvring areas, resulting in overall throughput of 25,000 cars per hectare.
- We assume that the area required for tourist cars decreases in relation to increasing service frequency. For a port like Dover, at which services might offer frequencies of under an hour, we assume the space required per car handled falls by almost 90%, so that 250,000 cars are handled per hectare.
- Summary of ro-ro port capacity formulae:

Accompanied trailer	Port area * 600,000 tonnes/hectare/year
Unaccompanied trailer	Port area * 300,000 tonnes/hectare/year
Tourist cars	(Daily freq ^{0.7}) * 25,000 cars (tonnes)/hectare/year

1 Accompanied HGV	1 Quasi tonne
1 Unaccompanied HGV	2 Quasi tonnes

4 Other berths

In all other trades, quay length is assumed to be the predominant determinant of port capacity. A summary of berth productivity formulae used for other cargo types is summarised below. More detail of the method of calculation can be provided if required.

NB: the following productivity factors are provisional and may change in the final report.

Cargo type	Berth productivity
Semi bulk	(vessel draft ^{0.4}) x 900 tonnes per quay metre ⁽¹⁾
Dry bulk	(vessel draft ^{1.2}) x 700 tonnes per quay metre ⁽²⁾
Liquid bulk	(vessel draft ^{2.5}) x 70 tonnes per quay metre ⁽³⁾

Notes:

This is subject to a maximum throughput of 100,000 tonnes per hectare per annum.

This is subject to a minimum requirement of 1 hectare per 500,000 tonnes of annual cargo throughput.

This is subject to an annual requirement of 1 hectare per 1 million tonnes of annual cargo throughput to accommodate tankage.

GLOSSARY OF TERMS

CAGR	Compound Annual Growth Rate
Coastal shipping	The movement of cargo by sea between two ports of the same country; this means that traffic between the North West and Northern Ireland (part of the UK, but not included within GB) is treated as coastal shipping.
Container	Standard units made of steel, usually with end doors. standard sizes are used so that they are easily stackable on land and easily stowed on a vessel; can also be carried on trucks and on intermodal railway wagons.
Conventional cargo	Remainder of cargo not covered by unitised, dry, liquid and semi-bulk; usually the most intensive in terms of labour requirements; includes semi-bulk cargo in all countries except the UK.
Deadweight (dwt)	The standard measure of capacity for a dry bulk vessel, which is an approximate measure of the maximum cargo weight that can be carried.
Deep sea shipping	The movement of cargo by sea between European ports and ports situated outside Europe and the Mediterranean.
Draft	The standard measure of a vessel's depth below the water line, usually stated in metres.
Freeport zone	A zone where goods can be stored without incurring duty.
LIFT	Liverpool Intermodal Freeport Terminal
Linkspan	A bridge between a hard quay and a RoRo ferry, to allow the loading and unloading of wheeled traffic.
LoLo	Container ship services
Megafret wagons	Intermodal rail wagons which are lower than the standard wagons used by Freightliner and allow large maritime containers to be carried within a more restricted rail loading gauge.
Municipal port	A port that is owned by a local authority.
NMF	Norse Merchant Ferries
Private port	A port which is owned by a private company.
RoRo	Commercial vehicles and assembled cars on wheels shipped as roll-on roll-off freight on ferries.
RoRo	Commercial vehicles and assembled cars on wheels shipped as roll-on roll-off freight on ferries.
Semi-bulk cargo	Cargo which is presented in such a way and in sufficient quantity as to significantly reduce handling costs, but which is not fully unitised; examples include rolled newsprint, packaged timber and steel coil; only used for statistical purposes in the UK.
Short sea shipping	The movement of cargo and passengers by sea between ports situated in geographical Europe or between those ports and ports situated in non-European countries with a coastline on the enclosed seas bordering Europe.
Slave trailer	Special low height trailer for carrying two containers one on top of the other ("double-stacked") on a RoRo vessel, which allows RoRo services to be competitive with short sea and coastal LoLo services.
TEU	Twenty feet equivalent unit; standard measure of the volume of containers handled at a port and by a shipping line; a forty feet long container is therefore two TEU.
Trailers (accompanied and unaccompanied)	Standard road trailers; accompanied trailers are where there is a tractor unit and driver with the trailer on the sea crossing; unaccompanied trailers are where the trailer is not accompanied by tractor unit and driver on the sea crossing.
Trust port	A port which is owned and operated by a trust; the board of the trust has a duty to manage the port in the interests of its stakeholders.
3PL	Third party logistics operators: companies that carry out transport and warehousing operations on an integrated basis for their customers