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CAMIS Maritime Transport and Intermodality

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Stage 2

TRANSPORT
TRAFFIC
DEVELOPMENT
PLANNING
URBAN DESIGN
ECONOMICS
MARKET RESEARCH

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CAMIS Maritime Transport and Intermodality

Stage 2

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Executive Summary

This study focuses on the ports of the 'Channel Arc Manche' region, an extremely productive stretch of channel between the UK and France. Initial focus is on the detailed stakeholder consultation, allowing accurate and up to date baseline conditions to be established for 18 (South coast) UK ports and 15 (North coast) French ports.

The ports of Southampton, Medway, Le Havre, Rouen, Dunkerque and Calais currently handle the largest volumes of trade. Passenger travel is dominated by the ports of Dover and Calais, although important supporting roles are played by Southampton, Portsmouth, Saint-Malo, Dunkerque and Caen.

The importance of niche ports is also highlighted, as although total tonnage volumes are less, they are often closely linked to local industry and are thus essential for maintaining regional trade patterns.

Colin Buchanan (CB) developed 2 growth scenarios for UK ports, the first examining growth on a port by port basis and suggesting that dry bulk and container trade would increase in both 2020 and 2030, accompanied by declines in liquid bulk freight. This suggests that several smaller ports such as Fowey, Littlehampton, Newhaven, Poole, Ramsgate and Newhaven will experience substantial growth due to the large proportion of dry bulk handled. The same methodology also suggested a continued decline in passenger numbers at all UK passenger ports included within the study area.

A second, more optimistic growth scenario showed growth at all UK ports by 2030, although some are predicted to experience short term decline up to 2020. These figures are however based on research carried out prior to the recent economic downturn.

The French analysis showed large increases in container trade at Dunkerque and Le Havre, and high levels of growth at Le Tréport, Dieppe and Boulogne. Passenger growth was also predicted to increase steadily at most French passenger ports.

Colin Buchanan have outlined various road/traffic hotspots in need of improvement within the UK. These are essential if the port hinterlands are to match potential future freight requirements. Improvements at Dover (A2, A20) and Southampton (A33, A36, A3025) should take priority due to the strategic importance of these ports, with improvements for the A36 enhancing access to all ports in the South West.

In France several key issues are identified to focus on the rail network.

Differences are expected in the UK where port development will be driven by market forces, due to the private nature of their ownership. Surrounding infrastructural development will fall under the remit of local authorities/wider government, and therefore investment may be harder to obtain.

We would like to thank all respondents for their time, including the UK and French ports and the various associations contacted during the study period. The responses received have helped to shape and more fully inform this report.

This report was completed with the assistance of the French sub contractor 'Manche Atlantique Stratégie'.

1 Introduction

1.1 Background

1.1.1 Colin Buchanan (CB) (with French sub-consultants MAS) were commissioned by the South East England Development Agency (SEEDA) in January 2011 to conduct a study into the capacity of the infrastructure of major ports on both sides of the English Channel. This involved an assessment of the transport networks serving the ports in terms of the efficient and sustainable distribution of traffic and goods. This project is a continuation of a baseline study carried out by CB in 2010 and focuses on maritime freight and passenger movements and the identification of existing infrastructure and planned port investments.

1.1.2 We would like to thank all respondents for their time and assistance, including the UK and French ports and the various associations contacted during the study period.

1.1.3 This study began with a consultation exercise involving key local stakeholders including port operators and shipping/haulage companies, allowing an understanding of baseline conditions to be developed.

1.1.4 This process also estimated freight and passenger flows from each port and provided information on more local factors including spare capacity, limitations on future growth and future development plans.

1.1.5 Economic growth scenarios were developed for 2020 and 2030 based on an assessment of recent trends in port activity in relation to overall economic indicators such as GDP. These scenarios were then applied to the baseline figures to generate future forecasts for freight and passenger movements.

1.1.6 The ability of ports to accommodate forecast growth was then considered in relation to relevant infrastructure. Investment priorities were then identified.

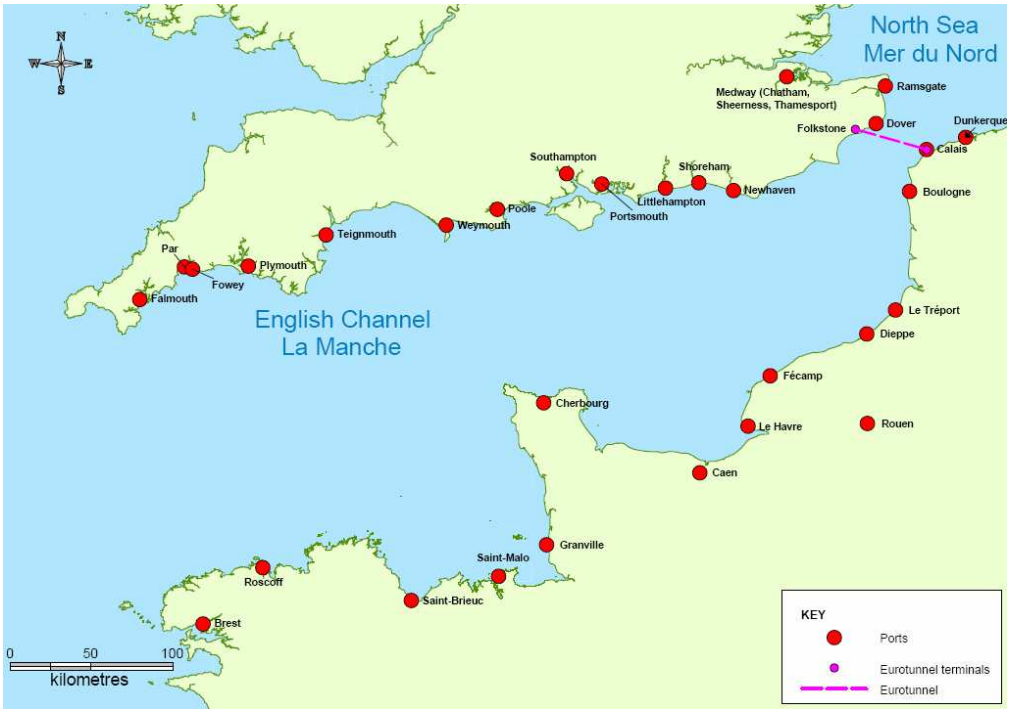
1.1.7 The future ability of ports to function effectively is essential in enhancing national economic performance, as ‘‘more than 95% of UK imports and exports pass through British ports. Our economy is therefore heavily dependant on their vitality and viability” (‘Gateways for Growth’, British Ports Association, 2009).

1.1.8 In addition to stakeholder consultation, MAS also reviewed relevant background European transport schemes (FERRMED, EUROCAREX, SNE, etc) and leading French government decisions (Greater Paris; Seine Axis; France's maritime policy, Paris-Le Havre LGV, RET-T, etc) that affect the movement of passengers and freight through the Channel Arc Manche ports.

1.2 Study area

1.2.1 The map shown in Figure 1.1 displays all the ports in the study area on both the UK and French sides of the Channel.

Figure 1.1: Ports included within 'CAMIS' study area



1.2.2 On the UK side, the study area stretches from Falmouth in Cornwall to the Medway ports (including Thamesport, Rochester, Chatham, Gillingham, Ridham Dock, Queenborough, and Sheerness). On the French side, the study area encompasses Brest in the west and Dunkerque in the east, and includes the port at Rouen, accessible via the Seine river from Le Havre.

1.3 Data and sources

1.3.1 The data used to develop this study was based in the first instance on the information presented by CB as part of the Stage 1 report, issued to SEEDA in November 2010.

1.3.2 Stakeholder consultation has been a major element of the study, allowing updates to the data used in Stage 1. Direct contact was made with UK and French ports and a questionnaire was used in order to request the following information:

- Annual tonnage of freight movements by category, both imported and exported.
- Annual number of passengers arriving and departing.
- Information on the origin and destination of freight and passengers.
- Details on port facilities and capacity for freight/passengers.
- Details of constraints on port activity, both within each port and on the transport networks serving each port.
- Views on future growth in passenger numbers and freight over the next 20 years.

- Views on likely changes in the composition of freight and passengers over the next 20 years.
- Views on the aspirations and expectations of the market.

1.3.3 An additional questionnaire was prepared for road haulage operators, allowing comparable data to be collected.

1.3.4 Ports and other stakeholders were contacted with the intention of completing the questionnaire over the phone. In some instances information was provided by email, and in a few cases face to face meetings were arranged to enhance the data collection process.

1.3.5 Where UK data was not forthcoming, the following secondary data sources were used:

- Department for Transport Maritime Statistics (2009).
- Port Masterplan documents (UK and France) and government statistics (France) – please see Appendix A for web links and documents.

1.4 This report

1.4.1 The reports is structured as follows:

- **Chapter 2** – provides a summary of the stakeholder consultation process.
- **Chapter 3** – estimates baseline freight and passenger conditions by port.
- **Chapter 4** – provides an in-depth analysis of recent trends in the ability of UK and French railway infrastructure to serve ports.
- **Chapter 5** – presents analysis of future freight and passenger growth scenarios.
- **Chapter 6** – looks at the key investment priorities needed to manage future growth in port activity.
- **Chapter 7 -** presents the report conclusions.

2 Consultation

2.1 Introduction

2.1.1 Stakeholder consultation formed a key part of the project, allowing the most up to date information to be used when detailing 'baseline' port conditions, and allowing the local constraints, issues and future expansion plans faced by each port to be understood.

2.1.2 The consultation was carried out by CB directly contacting ports, haulage companies and key associations within the UK. The same process was conducted by MAS Consulting in France.

2.2 UK

Ports

2.2.2 Following the Stage 1 report, 18 UK ports were initially included in the study. All were contacted by telephone, and encouraged to complete a questionnaire (Appendix B) over the phone. This was followed up by email. with the level of detail provided varying by port, as is summarised in Table 2.1.

Table 2.1: UK port questionnaire responses

Port	Questionnaire Returned	Freight Movements	Passenger Movements	Complete O/D's	Expansion Plans
Dover	Yes (2010)	Yes	Yes	No	No
Falmouth	Yes (2010)	Yes	Yes	No	Yes
Folkestone	Not applicable due to small size				
Fowey	No	Yes	N/A	No	No
Littlehampton	Yes (2010)	Yes	N/A	Yes	Yes
Medway Chatham	Not applicable*				
Medway Thamesport	No	Yes	N/A	No	No
Medway- Sheerness	Yes (2010)	Yes	N/A	No	Yes
Newhaven	Yes (2010)	Yes	Yes	No	Yes
Par	Not applicable due to small size				
Plymouth	No	Yes	Yes	No	No
Poole	Yes (2010)	Yes	Yes	No	Yes
Portsmouth	No	Yes	Yes	No	No
Ramsgate	Yes (2010)	Yes	Yes	No	Yes
Shoreham	Yes (2010)	Yes	N/A	Yes	Yes
Southampton	Yes (2010)	Yes	Yes	No	Yes
Teignmouth	Yes (2010)	Yes	N/A	No	Yes
Weymouth	Yes (2010)	N/A	Yes	No	Yes

* Medway Chatham was not included as the port is leased to several different private companies, all unwilling to share commercial information. After consultation with CAMIS, it was decided to exclude this port.

2.2.3 When information was not provided by ports via the questionnaire (Fowey, Thamesport, Plymouth and Portsmouth), DfT Maritime Statistics (2009) were used as a 'next best' estimate.

Operators

2.2.4 Several road haulage companies were contacted to obtain their views on the issues faced when using/accessing UK ports.

2.2.5 Telephone and email were used to maximise questionnaire returns, a copy of which can be found in Appendix C. Responses were received from Norbert Dentressangle and Maritime Transport.

Others

2.2.6 Further information was obtained in face-to-face meetings with the British Ports Association and the Road Haulage Association, and a detailed telephone conversation with the Freight Transport Association.

2.3 France

2.3.1 The French data collection had 5 main themes, namely:

- The retrieval of traffic statistics and data detailing future medium term investment proposals.
- Telephone contact with all ports.
- Collection of additional quantitative and qualitative data from ports, trade organisations and institutional actors.
- Producing an estimate of activity for each port.
- Consolidation of all data collected.

2.3.2 The study period was disrupted by ongoing industrial disputes in some French ports (focussing on ownership status of cranes and the pension system). Many ports were also unresponsive due to their perception that the study has distant objectives and outcomes (i.e. 2020, 2030).

2.3.3 The 15 French ports were issued with the same questionnaire as the UK ports. The response to this exercise is shown in Table 2.2.

Table 2.2: French port questionnaire responses

Port	Questionnaire Returned	Freight Movements	Passenger Movements	Complete O/D's	Expansion Plans
Boulogne	Yes (2010)	Yes	Yes	No	Yes
Brest*	No	Yes	Yes****	No	Yes
Caen	Yes (2010)	Yes	Yes	Yes	Yes
Calais	Yes (2010)	Yes	Yes	No	Yes
Cherbourg	Yes (2010)	Yes	Yes	No	Yes
Dieppe	Yes (2010)	Yes	Yes	Yes	Yes
Dunkerque**	No	Yes	Yes****	No	Yes
Fécamp	Yes (2010)	Yes	N/A	Yes	Yes
Granville*	No	Yes	Yes****	No	No
Le Havre***	No	Yes	Yes	Yes	No
Le Tréport	Yes (2010)	Yes	N/A	No	Yes
Roscoff	Yes (2010)	Yes	Yes	Yes	Yes
Rouen	Yes (2010)	Yes	Yes****	No	Yes
Saint-Brieuc	Yes (2010)	Yes	N/A	Yes	Yes
Saint-Malo	Yes (2010)	Yes	Yes	Yes	Yes

* Alternative information for Brest and Granville collected from Trafics par NST/R enregistrés en 2009 (Direction des services de transport, June, 2010)

** Alternative information for Dunkerque collected from Dossier de Presse, 2011 (Activité 2010, Dunkerque Port)

*** Alternative information for Le Havre collected from 'Provisoires a fin de Décembre 2010', Le Havre Port

**** Alternative 2010 passenger information for Brest, Dunkerque, Granville and Rouen collected from 'Le Marin; Ports et logistique, N° hors série de mars 2011'

Operators

2.3.4 The other French stakeholders contacted during the course of the study are shown in Table 2.3, Table 2.4 and Table 2.5. The tables also indicate the nature of any response received.

Table 2.3: French logistics associations contacted

Logistics Associations	Haulage Operator	Logistic Operator	Type of Contact	Questionnaire/Response
CRITT – Le Havre	No	No	Phone and email	Data and information provided
Club Logistique de Rouen	Yes	Yes	Phone and email followed up with face to face meeting	No
Club Logistique et gestion du Havre	Yes	Yes	Phone and email followed up with face to face meeting	The President of this organisation is very positive and receptive to the study. He suggests a collaboration of recommendations (see 2.3.5)
Fédération des clubs logistiques de Basse-Normandie	Yes	Yes	Phone and email	No
Club Logistique de Bretagne	Yes	Yes	Phone and email	Provided study called "Les ports de commerce en Bretagne, activité 2009"
Club logistique de Picardie	Yes	Yes	Phone and email	No
Club Logistique du Nord pas de Calais	Yes	Yes	Phone and email	No
Union Maritime de Saint Malo	Yes	Yes	Phone and email	The President of this association is very positive and receptive to this study

Table 2.4: French shipping companies contacted

Company	Type of Contact	Questionnaire/Response
Brittany Ferries	Group Director of Strategy - Phone and emails	No
LD Lines	Phone and emails	No

Table 2.5: French institutions contacted

Institution	Type of Contact	Comments
CR-Nord pas de Calais	Email	-
CR- Picardie	Phone	-
CR-Haute Normandie	Phone and email	The CAMIS Regional Council provided a presentation of the history and progress of the project
CR-Basse Normandie	Phone and email	Correspondent in charge of ports of the entity PNA
Conseil Général des Côtes d'Armor	Phone and email	Correspondent in charge of APLM
CR-Bretagne	Phone	-

Others

2.3.5 The president of the 'Club Logistique et Gestion du Havre' had the following specific suggestion:

- To gather all English and French transporters and logistical specialists together to optimise truck loads leaving Le Havre. This will reduce the amount of freight awaiting collection from storage in Le Havre.

2.3.6 The French consultation process highlighted several projects as having major impacts on future patterns of passenger and cargo shipping:

- The modification of the river link between Dunkerque and Lille - "The Grand River Template" (GGF).
- The development of a European Distribution Centre and a Regional Distribution Centre, allowing the faster movement of goods through Europe (EDC).
- The construction of the canal Seine Nord Europe (SNE).
- Introduction of the FERRMED European Railway Project (FER).
- Building the High Performance line between Paris and Le Havre which is compatible with the European CAREX line (LGV).
- The concentration of maritime policy of France in Le Havre (LH), also promoting multimodal transport projects (rail and river) .
- Developing the Seine Axis of development (AS).
- The proposed "Western Link" in the 8 Regions of the Paris basin, whose basic objective is to connect the Atlantic-Channel coasts (RET).

2.3.7 The impacts that each of these projects has on the individual ports within the Channel Arc Manche are summarised in Table 2.6.

Table 2.6: Impacts of future projects on French ports

Port	GGF	EDC	SNE	FER	LGV	LH	AS	RTE
Boulogne	N/A	N/A	N/A	-*	N/A	N/A	N/A	N/A
Brest	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Caen	N/A	N/A	N/A	+*	+***	+***	+***	+**
Calais	+*	+*	+**	+**	N/A	N/A	N/A	N/A
Cherbourg	N/A	N/A	N/A	N/A	N/A	N/A	+*	N/A
Dieppe	N/A	N/A	-*	N/A	+*	+*	+*	+*
Dunkerque	+***	+**	+***	+**	N/A	N/A	N/A	N/A
Fécamp	N/A	N/A	-*	N/A	+**	+**	+**	+**
Granville	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Le Havre	N/A	-**	-**	+**	+***	+***	+***	+***
Le Tréport	N/A	N/A	N/A	N/A	+*	N/A	N/A	N/A
Roscoff	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rouen	N/A	-*	-**	+*	+***	+***	+***	+***
Saint Brieuc	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Saint Malo	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

+ or - ***: significant likely impact, positive (+), negative (-)
+ or - **: medium likely impact, positive (+), negative (-)
+ or - *: minimal likely impact, positive (+), negative (-)

2.4 Summary of consultation

General

2.4.2 The consultation process highlighted a key difference in the structure of French and UK ports, with the former being largely state run. Their plans are therefore more closely tied to government policy rather than market forces.

2.4.3 In the UK, port development is driven by profit making companies, creating a lot more competition between ports. Ports directly compete with one another to attract new routes, and their expansion depends upon the ability to be able to do so.

2.4.4 The location of ports can also seen to differ between the two countries for much the same reason. In the UK most ports are located within close proximity to large settlements, making use of the local labour force and being close to domestic markets. In France however they are often found within hinterland areas, used as a tool by the government to encourage growth away from urban areas.

UK

2.4.5 The port consultation proved a productive process, in many cases providing current figures for freight and passenger volumes that were not available from other published sources. Several ports also provided a more detailed breakdown of freight by type.

2.4.6 Detail on future expansion plans was also provided, giving a point of comparison for the growth values assumed in subsequent sections.

2.4.7 Detailed origin-destination matrices were rarely available, often limited to either land-side or sea-side.

2.4.8 Trends identified include the increased containerisation of fresh produce leading to the expansion of container ports and the fact that future changes in passenger and freight movements are primarily dependent on shipping companies rather than ports. Ports often stated that they were overly reliant on one operator, and diversification was evident in a few cases (for example, towards wind farming).

2.4.9 Responses from the haulage companies were useful in highlighting the local issues in accessing several ports. Interestingly, the UK weather was mentioned as a constraint, preventing cross channel crossings and delaying the movement of freight.

2.4.10 A face to face meeting with the British Ports Association provided an overview of some of the main issues facing the ports. These are summarised below:

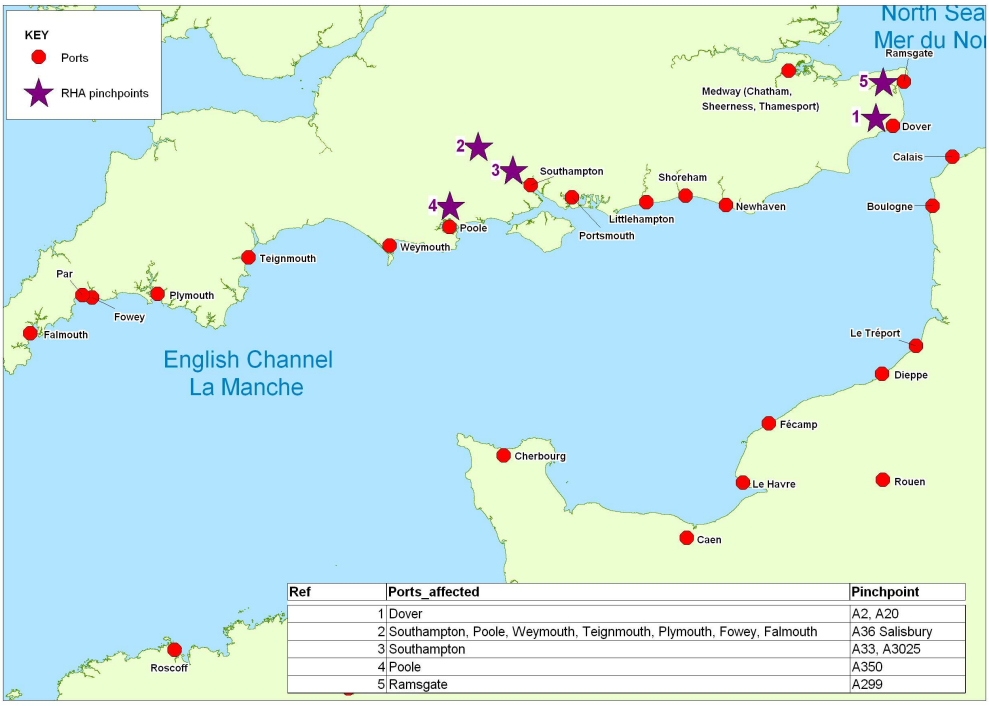
- The key UK cross channel ports are Dover, Portsmouth, Poole, Newhaven and Ramsgate.
- Dover and Southampton are the most significant South Coast UK ports in terms of total freight handled. Dover faces internal (available land) and external (surrounding road network) issues which are in need of urgent attention if the port is going to grow further.
- Southampton is well placed to expand further, assisted by relatively good road and rail links, and with spare capacity for future expansion.
- Portsmouth struggles due to freight arriving in concentrated peaks, putting short-term strain on Customs and surrounding infrastructure.
- Falmouth is restricted by local environmental restrictions.
- Medway port is particularly reliant on Ro-Ro trade and the import of fruit.
- As a whole, Ro-Ro and container trade is expected to increase, with minimal declines expected in the import/export of liquid bulks (oil). Other bulks are also likely to decline.
- Although several ports predict increases in passenger numbers, the economic benefit to ports compared to freight is minimal. Advantages are likely to be experienced in surrounding areas (rather than at the ports), and as such freight will always remain a priority.
- The ports industry is relatively static, and market share between ports remains approximately the same. Economic upturns and downturns are thus likely to be experienced uniformly amongst the ports in the study area.
- A major new revenue stream is being provided by off-shore renewables, namely at Newhaven and Ramsgate, and in the future Poole.
- Trade will continue to grow in the South East (Medway to Portsmouth), whilst remaining approximately the same in the South West where maritime activity is strongly linked to local markets.
- The London Gateway Port development should be largely ignored at this time, only being at the dredging stage and unlikely to have a significant impact by 2030. Additional issues are still to be resolved, including access for large ships, funding, and the displacement of existing and established trade routes.
- The difference in ownership between UK and French ports was again highlighted, with French ports often characterised by high levels of government intervention.

2.4.11 The meeting with the Road Haulage Association (RHA) highlighted the following points:

- Drivers are increasingly flexible in reacting to real-time information in deciding which crossing to use.
- Rail is not always a viable alternative to road in many instances due to cost, convenience and the understated issue of rail congestion.

- Increased use of just-in-time delivery service is reliant on efficient transport systems.
- There is a huge advantage in driving extra distances to use the Dover-Calais crossing due to highest number of scheduled crossings.
- Southampton is identified as one of the few ports with efficient rail links.
- Recent changes include a move towards the white van (<3.5 tonnes) carrying high value loads and not subject to strict driving regulations. Increased competition from other European countries benefitting from lower staff and fuel costs was also highlighted.
- Future changes are envisaged as including the continued consolidation of haulage operators and an increasing concentration of activity at Dover, Southampton and Portsmouth.
- The Localism bill is also considered a threat, as transport is unlikely to be favoured and could lead to HGV bans on certain days.
- The RHA highlighted 14 pinch points that are damaging to UK port hinterland areas, several being in the study area as demonstrated in Figure 2.1. A copy of the accompanying report is provided in Appendix D.

Figure 2.1: RHA pinchpoints*



Ref	Ports_affected	Pinchpoint
1	Dover	A2, A20
2	Southampton, Poole, Weymouth, Teignmouth, Plymouth, Fowey, Falmouth	A36 Salisbury
3	Southampton	A33, A3025
4	Poole	A350
5	Ramsgate	A299

* Source: Memorandum from the Road Haulage Association Ltd (December 2006)

2.4.12 The Freight Transport Association also highlighted the following points:

- Despite Operation Stack generally working well at Dover, the need remains for a new lorry park in Kent (for general use).
- There are negative impacts on traffic using Eurotunnel when Operation Stack is in effect.
- Medway has a shortage of lorry parking causing drivers to park a long way away from the port and face increasing threat of theft.
- Increasing road delays are experienced at Portsmouth due to increased flows and the introduction of more stringent vehicle checks.

France

2.4.13 Consultation with the French ports was successful, with a large number of ports completing the questionnaire or at least verifying the information collected by MAS. Data gaps were filled in by centrally availably data.

2.4.14 Contacting other stakeholders was less effective, with many reluctant to become involved with the study. We were able however to highlight key projects that are going to impact French ports and to provide an overall view of the organisation of French ports.

2.4.15 Several of the French ports contacted identified the same problem, namely how to develop new trade activities when they are intrinsically linked to the dominant industries of their hinterlands.

2.4.16 Additional recurring themes included:

- Limited available land as a key constraint.
- Traffic waiting times at ports for road transport are high, with urban traffic often disrupted by heavy vehicles.
- The rail network is in need of modernisation at many locations.
- Freight and passenger flows often arrive in waves, placing additional stress on local infrastructure.

2.4.17 The road transport professionals contacted highlighted the following improvements which would allow French ports to operate more efficiently:

- Waiting times be reduced, or flows better managed.
- Secure parking areas.
- Living spaces for drivers.

2.4.18 To improve maritime activities, the French authorities have decided to implement:

- Revival of combined rail transport schemes (e.g. CombiWest project).
- Development of high speed rail freight networks (e.g. Eurocarex; FERRMED).
- Support for the initiatives of "Opérateurs Ferroviaires de Proximité" (OFP)short distance rail operators (e.g. Le Havre).
- Support for the development of multimodal platforms (e.g. platform at Le Havre port to handle railway, river and road traffic).
- Development of river traffic flows (Axis Seine and Channel SNE).
- Improved connections between French ports and Continental Europe via the railway network.
- Promotion of transport solutions that bypass cities and towns.
- Development of 'freight villages'.

2.4.19 An increased perception of competition between Channel Arc Manche ports was also highlighted. This was often evident in a reluctance to share sensitive information.

3 Port baseline conditions

3.1 Baseline analysis

3.1.1 The data presented in the following sections was collected during the consultation process with the ports. Where data was not available alternative sources were used, such as the DfT Maritime Statistics (2009). Full details of the alternative sources used for each port (where applicable) are highlighted in Table 2.1 and Table 2.2, and are further summarised in Appendix E.

3.1.2 Data collected directly from ports refers to 2010, whilst secondary data sources normally refer to 2009. It is however felt that making use of the 2010 data where available provides the best picture of baseline conditions.

3.1.3 Data returned for the Medway ports (Thamesport and Sheerness) has been combined as both share the same immediate transport infrastructure and a combined impact will be experienced in the hinterland.

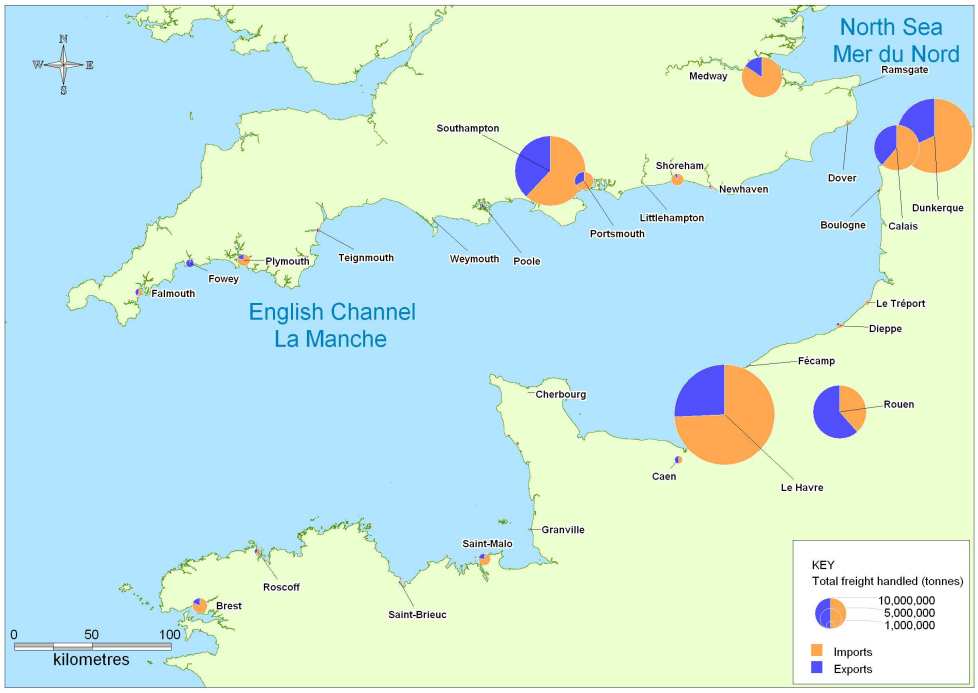
Freight volume analysis

3.1.4 Commercial sensitivity has meant that very few ports provided detailed origin and destination breakdown of freight movements.

3.1.5 Total freight movements were however provided, and these are detailed by total annual import and export volumes in Figure 3.1. In terms of freight volumes, the largest ports on the UK side are Southampton and Medway, whilst on the French side the largest ports are Le Havre, Dunkerque, Rouen and Calais.

3.1.6 With the exception of Rouen, the major ports are all net importers. This is especially the case at Medway and Le Havre.

Figure 3.1: Freight imports and exports (2010 data where available, 2009 in all other instances)*



* For sources/dates please see Table 2.1, Table 2.2 and Appendix E

3.1.7 As demonstrated above, several large ports dominate the total freight volumes handled within the study area.

3.1.8 In the case of France, this is further highlighted in Table 3.1, showing the greater value of exports in the Nord-Pas-de-Calais region (the ports of Calais, Dunkerque and Boulogne) and the Haute Normandie region (ports of Le Tréport, Dieppe, Rouen, Fécamp and Le Havre).

Table 3.1: French maritime exports by region*

Region	French Exports (€M)	% of Total French Exports
Nord-Pas-de-Calais	29,887	7.7
Picardie	12,881	3.2
Haute Normandie	26,374	6.8
Basse Normandie	3,782	1
Bretagne	8,708	2.3

* Source - Le Marin; Ports et logistique, N° hors série de mars 2011

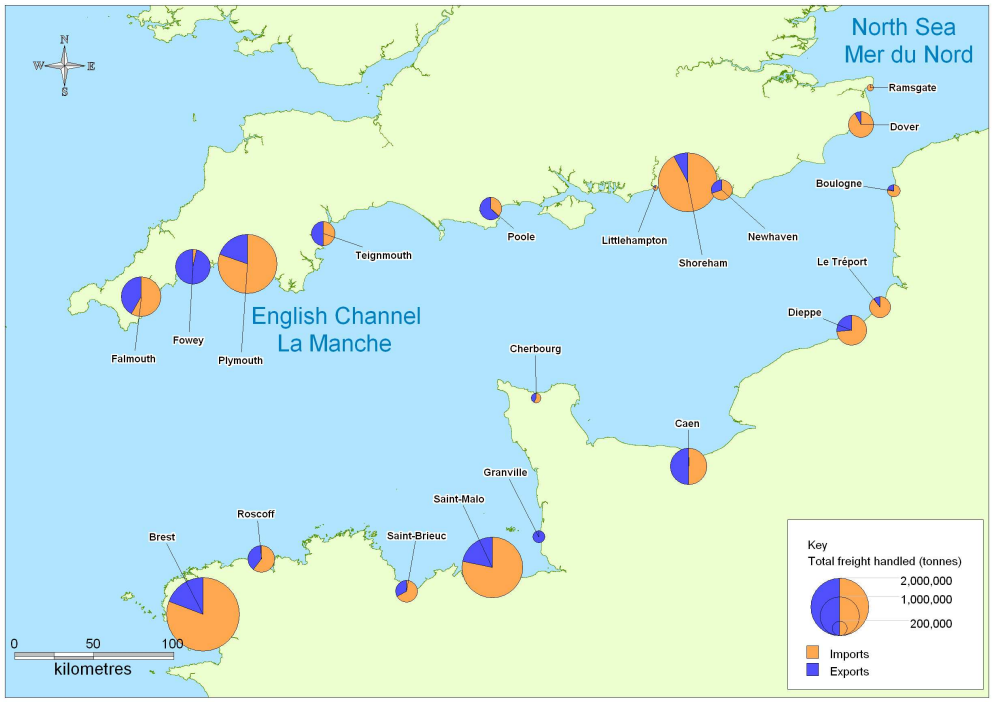
3.1.9 The dominance of the larger ports means the role the smaller supporting ports play is often lost (as in Figure 3.1). To address this issue, an additional map (Figure 3.2) has the largest ports of Southampton, Medway, Portsmouth, Le Havre, Dunkerque, Rouen and Calais excluded. The smaller ports of Fécamp and Weymouth were also removed from the maps as they have no freight flows attributed with them.

3.1.10 This process highlights significant maritime activity in the west of the study area, led by Plymouth, Fowey and Falmouth in the UK and Brest, Roscoff and Saint Malo in France. Further to the east, the port of Shoreham also handles large freight volumes.

3.1.11 The smaller ports are also dominated by imports. Notable exceptions are Fowey and Granville, almost exclusively dealing with exports.

3.1.12 Several of these ports are 'niche' ports and play important roles in supporting their local economies. An example is provided by Fowey, dealing predominantly with the export of locally sourced china clay whilst Shoreham imports a lot of wood and timber to support development of the local housing market. As will be discussed later, the role of such ports is not expected to diminish in the future.

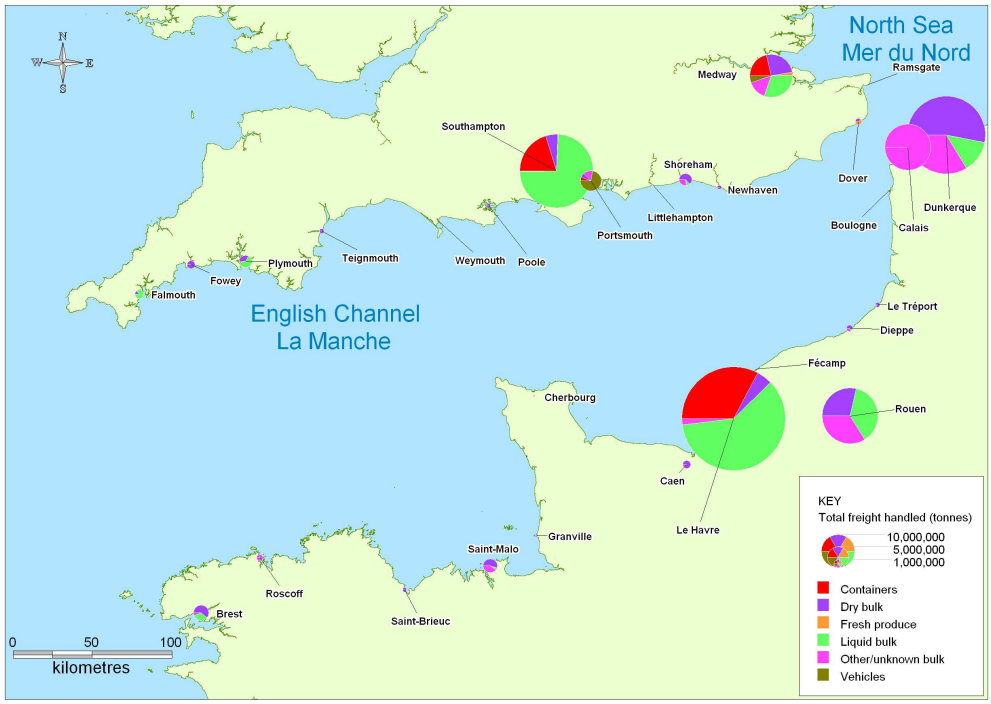
Figure 3.2: Freight imports and exports – selected ports (2010 data where available, 2009 in all other instances)*



* For sources/dates please see Table 2.1, Table 2.2 and Appendix E

3.1.13 Figure 3.3 summarises the total volume freight by type handled by each port.

Figure 3.3: Freight volumes by type (2010 data where available, 2009 in all other instances)*



* For sources/dates please see Table 2.1, Table 2.2 and Appendix E

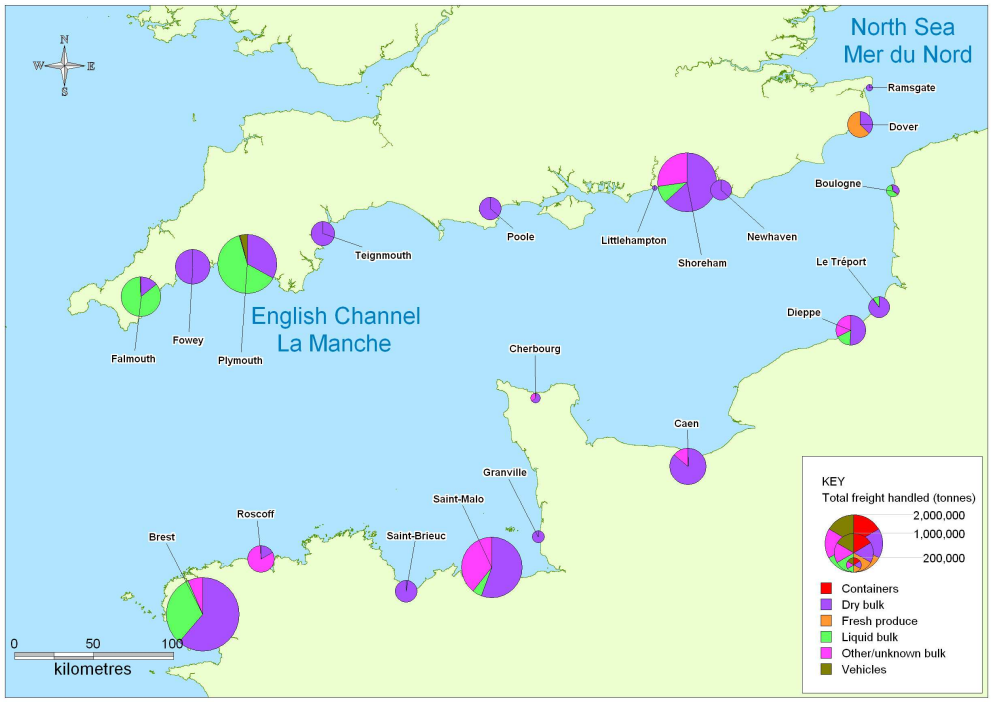
3.1.14 Rouen and Medway have a diverse mix of freight, whilst the larger ports of Le Havre and Southampton are dominated by the movement of liquid bulk.

3.1.15 Due to the methods of data collection some ports have specified vehicle movements/freight in tonnes and others by number, with no indication of whether these were passenger vehicles or the import and export of new vehicles. This is reflected in Figure 3.3 and later in Figure 3.8, effectively underplaying the importance of Dover.

3.1.16 As before the same data has been displayed excluding the larger ports, as shown in Figure 3.4.

3.1.17 For the smaller ports, the main type of cargo handled tends to be dry bulk and liquid bulk. A large proportion of all freight handled at Saint Malo and Shoreham is defined as other/unknown bulk, whilst Dover can be seen to be specialising in the movement of fresh produce.

Figure 3.4: Freight volumes by type – selected ports (2010 data where available, 2009 in all other instances)*



* For sources/dates please see Table 2.1, Table 2.2 and Appendix E

3.1.18 Several ports gave an estimate of the maximum volume of freight they could currently handle. The output of this is summarised in Table 3.2 and Figure 3.5.

3.1.19 It should be noted that this is based upon a subjective response provided during the consultation period, intended to provide an estimate of additional capacity a port could handle in its current state.

3.1.20 Caution is therefore advised when using these figures as they are wholly dependant on individual opinion rather than a detailed itinerary of port capability.

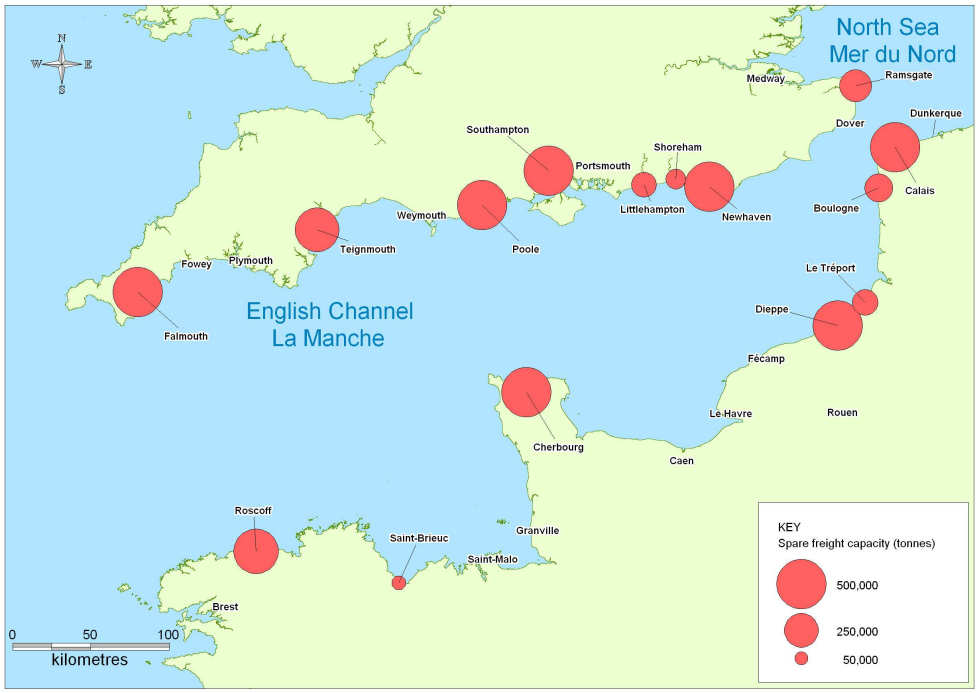
Table 3.2: Estimated spare port capacities and expansion plans (2010 data where available, 2009 in all other instances)*

Port	Spare Capacity Freight (Tonnes)	Spare Passenger Capacity	Expansion Plans
Dover	No Data	No Data	No information
Falmouth	570,000	47,050	Dredge main channel (dependant on licence)
Fowey	No Data	N/A	No information
Littlehampton	146,643	N/A	No plans to expand
Medway - Sheerness	290,000	N/A	5 year plan in place
Medway - Thamesport	No Data	N/A	No information
Newhaven	3,696,699	747,666	Planned expansion within 5 years (finance dependent)
Plymouth	No Data	No Data	No information
Poole	636,000	345,000	Expanding leisure facilities only
Portsmouth	No Data	No Data	No information
Ramsgate	232,931	3,413,660	- Wind farms - Masterplan at first draft stage
Shoreham	100,000	N/A	- Land reclamation - Masterplan in place
Southampton	6,505,000	No Data	Masterplan in place
Teignmouth	400,000	N/A	No plans to expand
Weymouth	N/A	201,900	New ferry terminal (will be constructed within 5 years)
Boulogne	180,506	404,250	Create new shipping lines
Brest	No Data	N/A	- Integration of the “Combiwest” rail project - Develop a private port railway company
Caen	No Data	No Data	- Continued investment in technology - Expansion of ferry terminal - 4.2 ha of land with 280 spaces for lorries and unaccompanied trailers - 7 new boarding lines. - Development of regular shuttle container traffic between Le Havre and Caen
Calais	42,650,089	9,766,543	400m Euro investment in ‘Calais 2015 project’
Cherbourg	4,931,543	1,380,589	- Can expand quay if trade demands increases - Plans for expansion in 2012
Dieppe	674,174	545,592	45m Euro investment (2007-2013) focusing on improving trade, channel, sailing and fishing
Dunkerque	No Data	N/A	- Large development of land transport including railways and river network - Development of container traffic - Total investment of 61,4M€ (2009-2013) - New terminal for specialised vessels (capacity of 266,000m³, installed by 2014)

Port	Spare Capacity Freight (Tonnes)	Spare Passenger Capacity	Expansion Plans
Fécamp	No Data	No Data	- New storage warehouses and dock - Acquisition of land reserves for development of logistics activities - Improvement of road and railway networks.
Granville	No Data	N/A	No information
Le Havre	No Data	No Data	No information
Le Tréport	155,145	N/A	- Potential new road to avoid city - Repairing port channels
Roscoff	415,418	365,865	- Integration of the “Combiwest” rail project - Creation of 100 meters quay length
Rouen	No Data	N/A	Investment of € 350M (2009-2015) including: improving nautical access, environmental measures, development of container and cargo terminals; platform development "Rouen Vallee de Seine Logistique"; developing the rail network inside port; road network improvements.
Saint-Brieuc	54,103	N/A	New deepwater port and terminal from 2015
Saint-Malo	No Data	No Data	- Restructuring and repositioning of ferry terminal - Integration of the “Combiwest” rail project - Develop a private port railway company - Introducing a railway siding from the rear port

* For sources/dates please see Table 2.1, Table 2.2 and Appendix E

Figure 3.5: Estimated spare freight capacity (2010 data where available, 2009 in all other instances)*



* For sources/dates please see Table 2.1, Table 2.2 and Appendix E

3.1.21 **Please note, the numbers displayed in Figure 3.5 are wholly dependant on individual opinion rather than a detailed itinerary of port capability**.

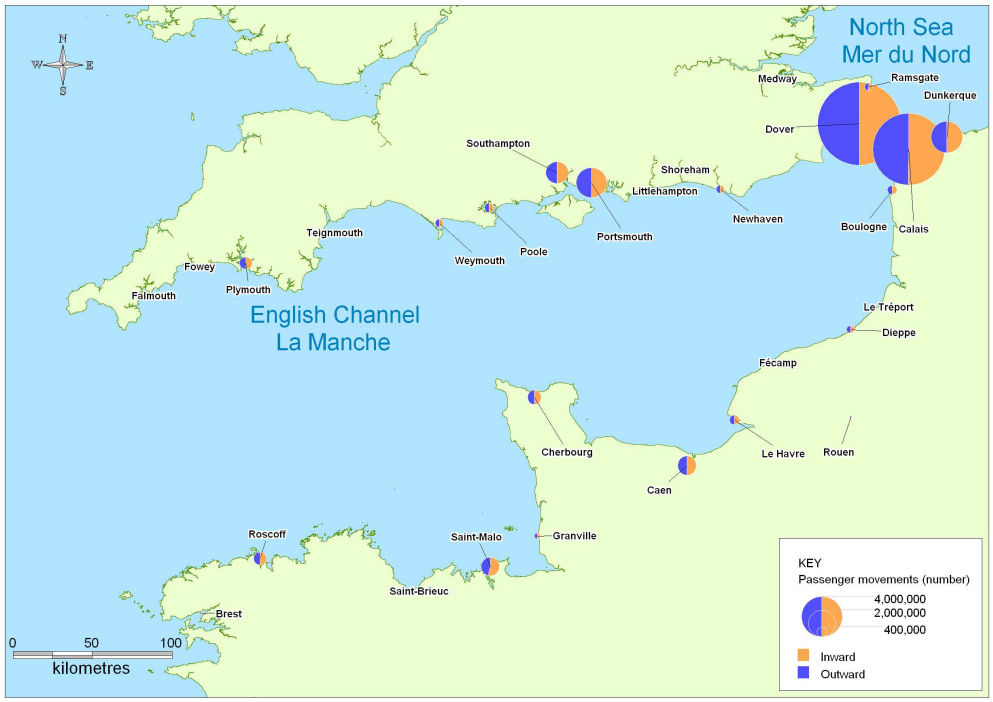
3.1.22 This data suggests that according to the port operators almost all ports could handle extra freight, at least partly attributable to the decrease in volumes now handled since the economic downturn of 2008. With most ports appearing ready to accommodate extra freight volumes, it is essential that the surrounding infrastructure can cope if and when this materialises, otherwise the ports face the prospect of losing out to competitors.

3.1.23 This potential for growth will be compared with future growth predictions in later sections.

Passenger volume analysis

3.1.24 Some ports returned information on passenger movements. As shown in Figure 3.6, Dover and Calais dominate the Channel in this respect, with Dunkerque, Portsmouth and Southampton also handling high passenger volumes. As expected there is also a close match between inward and outward movements at all passenger ports.

Figure 3.6: Passenger movements (2010 data where available, 2009 in all other instances)*



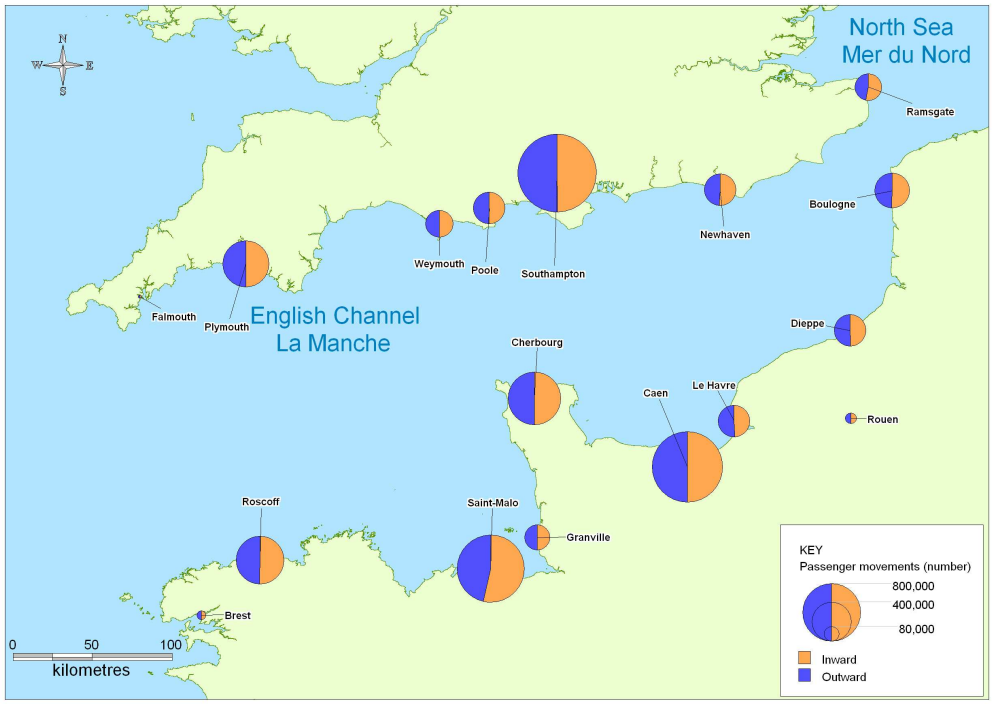
* For sources/dates please see Table 2.1, Table 2.2 and Appendix E

3.1.25 An additional map (Figure 3.7) excludes those ports with total passenger flows over 1,000,000 per annum (Dover, Portsmouth, Dunkerque and Calais). The following ports were also removed as having no passengers or no passenger data: Fowey, Littlehampton, Medway, Shoreham, Teignmouth, Fécamp, Le Tréport and Saint-Brieuc.

3.1.26 The importance of Southampton is highlighted. Several French ports (Caen, Cherbourg, Saint Malo and Roscoff) also have significant passenger operations.

3.1.27 Similarly, Poole, Weymouth and Plymouth handle a substantial number of passengers on the UK side.

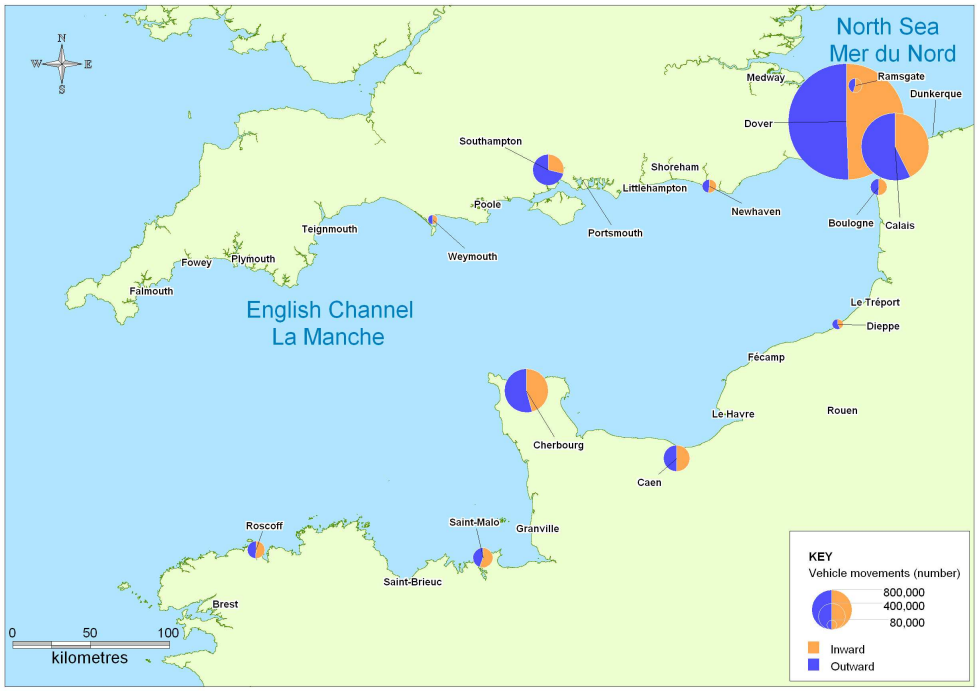
Figure 3.7: Passenger movements – selected ports (2010 data where available, 2009 in all other instances)*



* For sources/dates please see Table 2.1, Table 2.2 and Appendix E

3.1.28 Vehicle movements (Ro-Ro) are shown in Figure 3.8, with Dover and Calais being dominant. As noted before, some ports gave a total tonnage of vehicles rather than an actual number.

Figure 3.8: Vehicle movements (2010 data where available, 2009 in all other instances)*

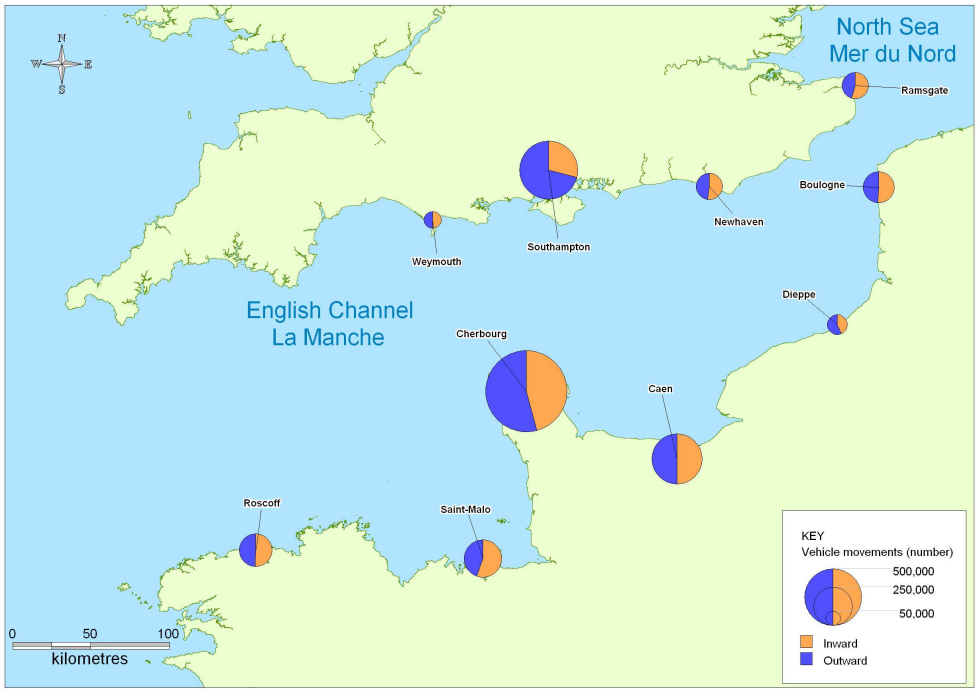


* For sources/dates please see Table 2.1, Table 2.2 and Appendix E

3.1.29 Vehicle movements are again shown for selected ports in Figure 3.9, excluding Dover and Calais due to size and 17 others due to no data on vehicle movements by number.

3.1.30 Southampton and Cherbourg can be seen to have significant volumes, with a strong role played by supporting ports such as Roscoff, Saint Malo and Caen.

Figure 3.9: Vehicle movements – selected ports (2010 data where available, 2009 in all other instances)*



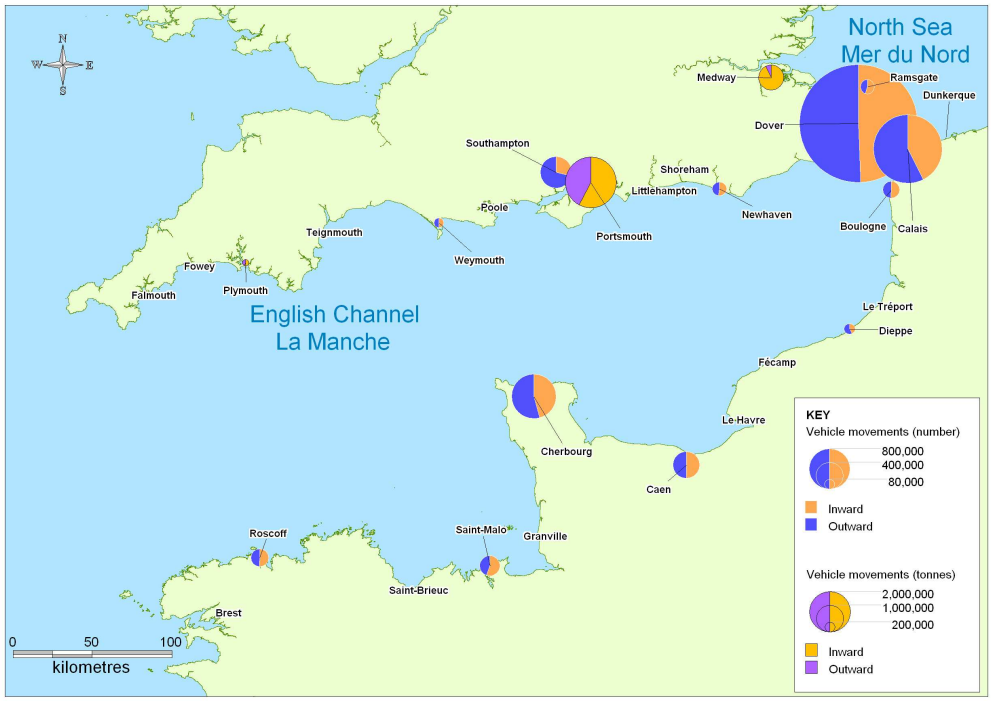
* For sources/dates please see Table 2.1, Table 2.2 and Appendix E

3.1.31 Figure 3.10 shows all vehicle movements by port. It is suggested that future studies should make a clear distinction between passengers travelling with cars, vehicles carrying freight and the import/export of new vehicles. Vehicle volumes should also be measured consistently by number or tonnage.

3.1.32 In terms of tonnages handled, the UK ports of Portsmouth and Medway are particularly dominant, whilst in terms of actual numbers the ports of Dover, Cherbourg, Calais and Southampton dominate.

3.1.33 Assumptions can also be made as to the type of car-based trade at each port based on import and export totals. The large proportion of imported cars at Medway suggests that these are new vehicles coming in to be sold, whilst Southampton, known to be the largest exporter of new UK cars, has a large number of outward car movements. At other ports, the import and export ratio is often closer to 50/50, more likely to be attributable to passengers and freight lorries entering and leaving the country.

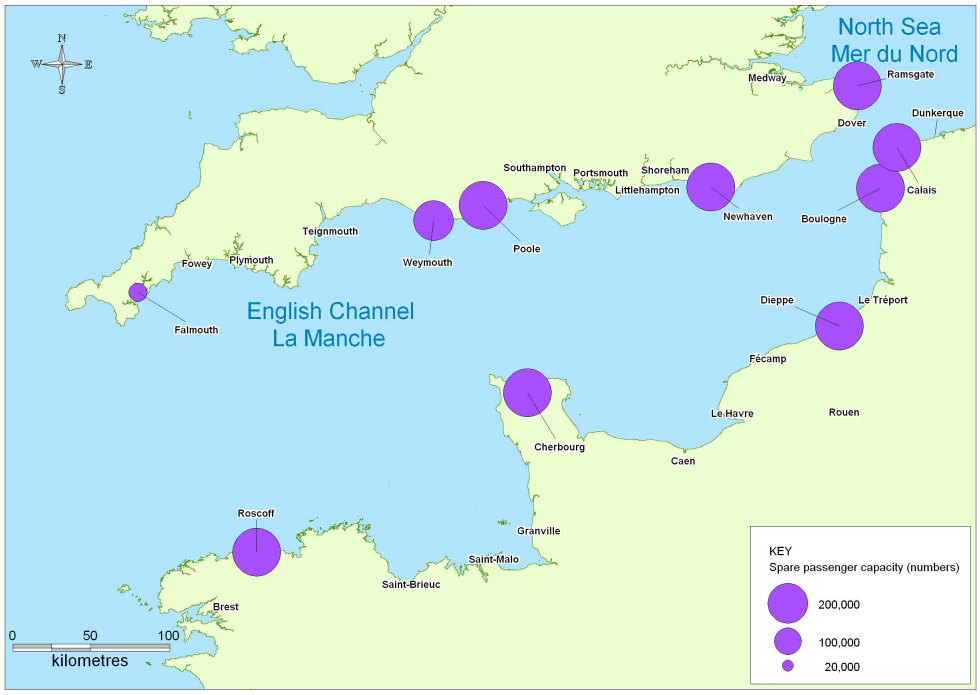
Figure 3.10: Total vehicle numbers and tonnes (2010 data where available, 2009 in all other instances)*



* For sources/dates please see Table 2.1, Table 2.2 and Appendix E

3.1.34 Figure 3.11 (and Table 3.2) show an estimate of spare port passenger capacity (where available). Again the potential for future expansion is evident at all points for which data is available. As before caution is advised in interpreting these vales further due to the subjective nature of the data provided.

Figure 3.11: Estimated spare passenger capacity (2010 data where available, 2009 in all other instances)*



* For sources/dates please see Table 2.1, Table 2.2 and Appendix E

3.1.35 **Please note, the numbers displayed in Figure 3.11 are wholly dependant on individual opinion rather than a detailed itinerary of port capability**.

3.2 Port development, policy and constraints

Overview of UK port policy

3.2.2 The key UK port policy documents are summarised below:

- **Draft National Policy Statement for Ports (DfT, 2009)** – provides a framework for future decisions for new port development, highlighting the importance of ports in terms of freight/bulk movement, energy supplies, tourism and leisure and the wider economic benefits experienced in port hinterlands. The policy does not expect the UK's reliance on sea movements to diminish (currently 95% of all goods moving in/out of the UK), with overall trade volumes expected to rise as higher prosperity levels are created. The government does not wish to dictate where future port development/expansion should occur, instead allowing the process to be reactive to changes in the marketplace. The government's underlying belief is of the compelling need for substantial additional port capacity in the next 20-30 years.
- **A Blueprint for Ports Policy (British Ports Association, 2010)** – calls on the government to provide an efficient planning regime and full public funding of road and rail connections to ports. Although the UK has excellent motorway links, the local connections to and from ports are often inadequate and in need of review and investment.

3.2.3 Direct intervention from the UK government is minimal with ports being responsive to market conditions. The private sector is the key player in terms of providing future port capacity.

3.2.4 In France (and other EU countries) ports are generally considered public infrastructure and full under wider government policy. As such, particular ports may be chosen for growth to stimulate wider economic benefits.

3.2.5 The wider European Maritime Transport Policy (until 2018) highlights increasing competition from non-EU countries benefitting from more flexible regulations, cheaper labour and/or government support. The policy suggests the potential of short sea shipping to be more fully exploited by creating new shorter distance trade routes.

Encouraging Transmanche Trade

3.2.6 The following policy was highlighted as trying to directly encourage cross channel trade:

- The Transmanche Enterprise Network (TEN) – part funded by Canterbury City Council to encourage commercial linkages with business in northern France and Belgium.

Overview of French port policy

3.2.7 French policy dictates that development projects adhere to European transport policies and the 'Grenelle Environment', aiming to strengthen transportation solutions whilst promoting green logistics.

3.2.8 On this basis, the following guidelines have been issued:

- For transport - highlighting the potential of the river and railway, boosting multi-modal transport links and developing shuttle boat and/or small crossing trade between local hubs and ports. These focus on reducing congestion and greenhouse gas emissions, with an emphasis on maritime transport.
- For logistical facilities – tackling the distance between out-of-town distribution centres and warehouses and the town/city driven market place.

3.2.9 For the Channel Arc Manche ports, these guidelines have resulted in:

- The strengthening of transport shuttles and short distance maritime trade routes.
- The adoption of mass transport strategies.

Current and possible future constraints on development

3.2.10 A series of port specific constraints for future development were identified, as summarised in Table 3.3 for the UK and Table 3.4 for France.

Table 3.3: UK port constraints

Port	Road	Land Availability	Other
Dover	Need for a lorry park in Kent; congestion on A2	Running out of space	
Falmouth	Poor access and railway bridge height restriction, long distance from markets; congestion at Salisbury (A36)	Near an EU Special area of Conservation	
Fowey	Congestion at Salisbury (A36)		
Littlehampton			On-shore bar limits access times to high tide
Medway Sheerness		Lack of available land to expand	
Medway Thamesport			
Newhaven	High traffic volumes make it difficult to get planning permission for expansion		Lack of finance
Plymouth	Congestion at Salisbury (A36)		
Poole	Congestion at Salisbury (A36), and on approach via A350		
Portsmouth	Congestion due to higher flows and stricter vehicle checks		
Ramsgate	Congestion on A299	Lack of land; adjoins a Conservation Area	
Shoreham		Port is running out of space and close to housing	
Southampton	Congestion on A33/A3025; congestion at Salisbury (A36)		Ships arrive in waves, putting additional stress on infrastructure
Teignmouth	Congestion at Salisbury (A36)	Limited space for storage/general operation, and difficulty with obtaining planning permission	
Weymouth	Congestion at Salisbury (A36)	Limited space and difficulty obtaining planning permission	

3.2.11 For the UK, road problems are the dominant cause of constraint, with congestion at Salisbury causing issues for all ports in the South West in reaching their markets.

3.2.12 Many of the other factors appear harder to resolve, with a lack of land suggesting that growth should be encouraged elsewhere, and environmental regulations unlikely to be relaxed.

3.2.13 For France, the need for investment in the railway is evident at many of the ports, and to a lesser degree a requirement to improve the surrounding road infrastructure. Other factors mentioned are similar to those for the UK, including lack of space and environmental designations.

Table 3.4: French port constraints

Port	Road/Rail	Land Availability	Other
Boulogne	Maintenance of local rail network	Lack of space	Modernisation of storage facilities required
Brest	Organisation of local rail network and lack of modern rail links within port hinterland		
Caen			Insufficient capacity to accommodate all the cars and trucks waiting to board boats and implementation difficulties when maneuvering vehicles to enter/leave ferries
Calais	Maximum of 8 trains per day	Near city and environmentally sensitive area	Lack of storage facilities/space
Cherbourg			Needs to further develop storage facilities (if demand exists)
Dieppe	No link to existing rail network	Limited space available because of physical geography	Port located inside the town
Dunkerque	Use of port rail carts need to be optimised		A large part of port activity is closely connected to and hence dependant on local economic sectors (e.g. refinery, steel).
Fécamp	Need to improve road travel times from Fécamp up to the European highways (A29, A13). Modernisation of railway network of the port required	Lack of space	Insufficient logistical connections with Port-Jérôme (Port of River Seine)
Granville			
Le Havre			
Le Tréport	Difficult access between city and the port		
Roscoff	No rail link to the port	Limited land available for use and storage	

Port	Road/Rail	Land Availability	Other
Rouen	Organisation of local rail network		Nautical access as problematic
Saint-Brieuc	High operating costs of rail spur to Le Legue		
Saint-Malo			Maximum ship size limited by locks (150 m long x 21 m wide x 9 m Draught maximum). The port is located in the downtown area of a historic city, limiting the potential for expansion.

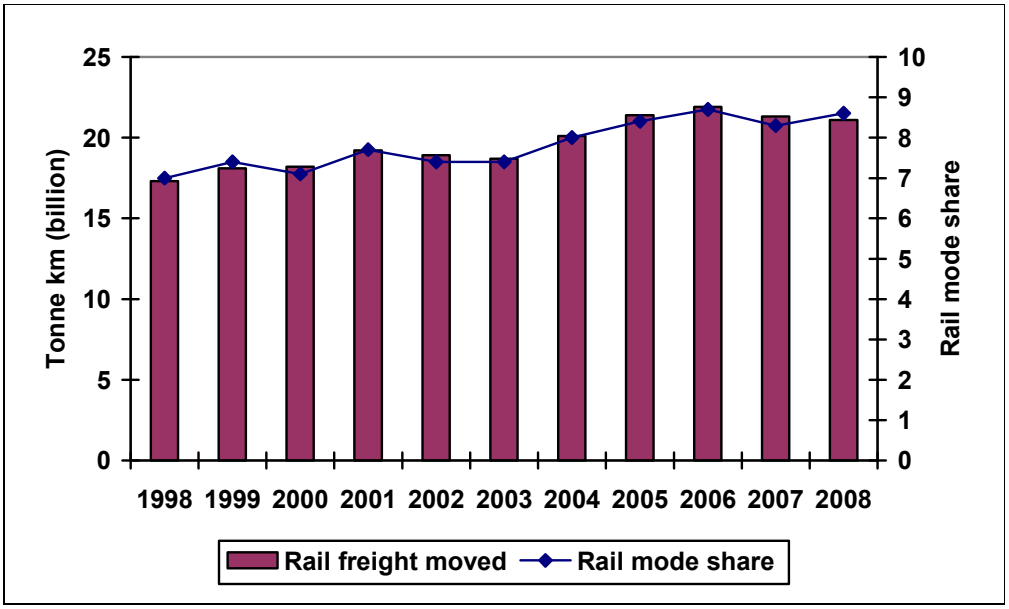
4 Rail baseline and future constraints

4.1 Recent trends in UK rail freight flows

4.1.1 Following several decades of decline, rail freight activity in Britain has seen a revival since the mid-1990s.

4.1.2 Figure 4.1 shows an upward trend in freight moved by rail since 1998. This rate of increase has been greater than that of the entire freight market, with rail's share of the British freight market increasing from 7.0% to 8.7% between 1998 and 2008.

Figure 4.1: British rail freight moved and rail freight mode share (1998 – 2008)



4.1.3 Table 4.1 presents the change in the structure of the rail freight market over the same time period, separated into bulk and non-bulk commodities.

4.1.4 Using the definitions from official statistics, the bulk commodities are coal (shown separately), metals, construction and oil/petroleum, while the non-bulk groups are domestic intermodal (shown as intermodal, but mainly comprising flows to/from container ports as well as some purely domestic traffic), international (i.e. Channel Tunnel) and other. In reality, the Channel Tunnel market is comprised of bulk and non-bulk traffic, as will be discussed later, but the statistics do not make this distinction so they have been allocated to non-bulk.

Table 4.1: Breakdown of British rail freight market (1999/00 and 2009/10)

Commodity	% of Freight Moved:	
	1999/00	2009/10
Coal	26	33
Other bulk	31	31
Total bulk	**58**	**63**
Intermodal	21	29
Other non-bulk	20	8
Total non-bulk	**42**	**37**

4.1.5 The main change that has occurred since 1998 is the decline in activity for the 'other non-bulk' category, reflecting large reductions in less-than-trainload flows and Channel Tunnel through freight trains and the loss of some bulk and non-bulk (e.g. in the automotive sector) trainload flows.

4.1.6 By contrast, there has been considerable growth in coal volumes and in the intermodal sector, the latter having witnessed the largest growth proportionally. Overall, there is a far greater concentration of trainload operation, both of traditional bulk and intermodal flows, now than in 1998.

4.2 Rail freight services serving ports and the Channel Tunnel

4.2.1 Table 4.2 reveals the origins/destinations served, the commodity breakdown and the service frequency from each port, based on the typical rail freight operations in early-2011. The deep-sea container, intermodal and lorry load services are two-way flows. Of the other commodities, most are import only, though the flows of steel, cars and china clay are in the export direction. It is evident that the Channel Tunnel dominates rail-borne flows passing through ports in the study area, with the Eurotunnel lorry shuttles comprising the overwhelming majority of services.

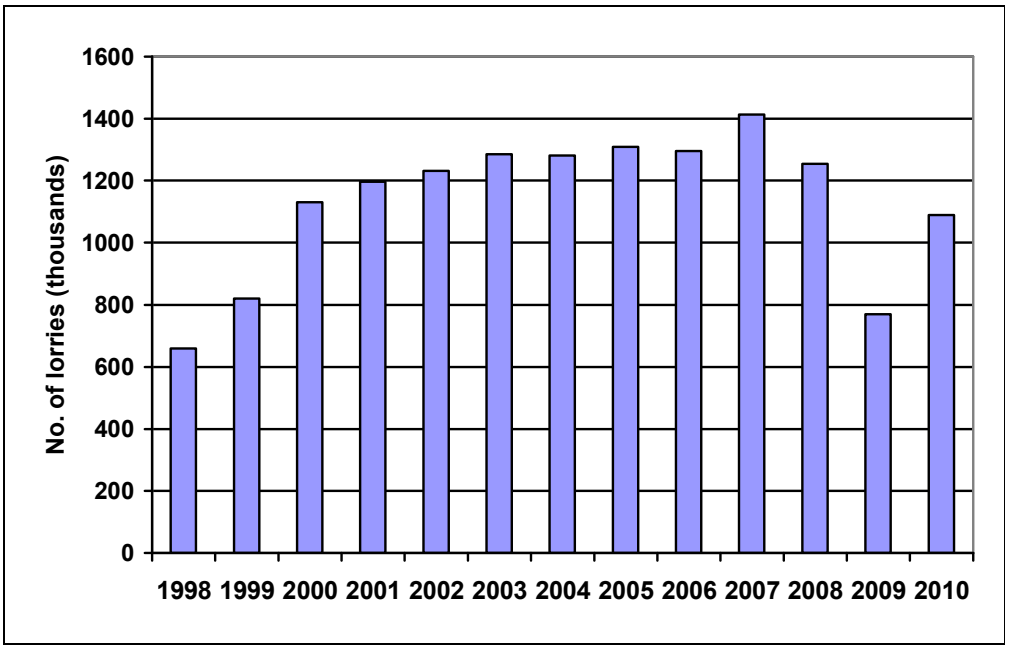
Table 4.2: Regular rail freight services carrying goods passing through ports

To/From	Commodities	Typical No. of Trains Per Week (One Way)
Thamesport (Medway)		**17 – 18**
Birmingham	Deep-sea containers	5
Bristol	Deep-sea containers	2 – 3
Leeds	Deep-sea containers	5
Manchester	Deep-sea containers	5
Cliffe (Medway)		**8 – 10**
Various destinations in London and South East	Sea-dredged aggregates	8 – 10
Grain (Medway)		**10 – 13**
Various	Railway ballast and other aggregates	10 – 13
Channel Tunnel (shuttles)		**600 – 800 (est.)**
Tunnel shuttles	Lorry loads	600 – 800 (est.)
Channel Tunnel (through trains)		**23 – 30**
Barking (London)	Intermodal	0 – 1
Barry (Vale of Glamorgan)	Chemicals	0 – 1
Dagenham (London)	Car components	2 – 4
Daventry (Northants.)	Bottled water	5
Daventry (Northants.)	Intermodal	1 – 2
Ditton (Cheshire)	Intermodal	1
Hams Hall (Warwickshire)	Intermodal	3
Irvine (N. Ayrshire)	China clay	1
Llanwern (Newport)	Steel	2 – 3
Manchester	Intermodal	3
Scunthorpe	Steel	5 – 6
Southampton		**81 - 83**
Birch Coppice (Warwickshire)	Deep-sea containers	12
Birmingham	Deep-sea containers	10
Cardiff	Deep-sea containers	5 – 6
Castle Bromwich (W. Midlands)/ Halewood (Merseyside)	Cars	5
Daventry (Northants.)	Deep-sea containers	5
Ditton (Cheshire)	Deep-sea containers	5
Hams Hall (Warwickshire)	Deep-sea containers	5
Leeds	Deep-sea containers	11
Liverpool	Deep-sea containers	5
Manchester	Deep-sea containers	10
Mountfield (E. Sussex)	Gypsum	2 – 3
Wakefield	Deep-sea containers	6
Fowey		**12**
Cornish clay mines	China clay	12

4.2.2 Figure 4.2 presents the trend in the number of lorries using the Eurotunnel shuttles from 1998 to 2010. Following the opening of the Channel Tunnel, volumes built up quickly until 2000, from which time there was more gradual growth through to 2007. The last few years have witnessed a large reduction in throughput, resulting mostly from the economic

slowdown and a fire in the Tunnel which restricted operations for a considerable period of time. The most recent figures, for 2010, shows a strong resurgence in the number of lorries carried.

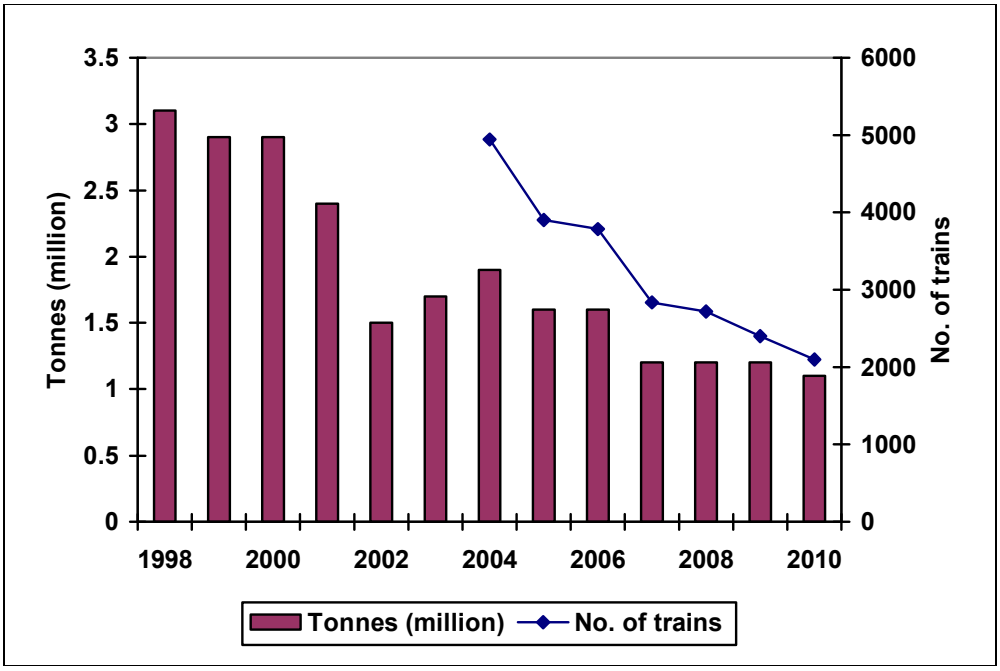
Figure 4.2: Channel Tunnel lorry shuttle activity (two-way total)



4.2.3 Focusing on those rail freight services that make use of the British network (i.e. excluding the lorry shuttles), container trains to/from Southampton are the most numerous, followed by the Channel Tunnel through freight trains and container trains to/from Thamesport.

4.2.4 Figure 4.3 displays the trend in tonnage being carried via the Channel Tunnel on through freight trains and, from 2004, the number of through freight trains operated. By contrast with the lorry shuttle figures, it is evident that there has been a long-term decline in through freight train volumes, reinforcing the conclusion reached earlier. That said, there are a variety of flows, including intermodal, steel, bottled water and car components. The remainder of ports with regular rail freight activity have no more than around 12 trains per week in each direction.

Figure 4.3: Channel Tunnel rail freight activity (through trains; two-way total)



4.2.5 In addition, there are several domestic rail flows using terminals that are situated within port areas (see Table 4.3). Sheerness and Poole receive flows of scrap metal and aggregates respectively, whereas dried clay is loaded at Par for movement out of Cornwall, most likely to Staffordshire. In comparison to the flows through many of the ports, it is clear that these additional flows are both highly insignificant and commodity-specific.

Table 4.3: Regular non-port rail freight services using terminals in port areas

To/From	Commodities	Typical No. of Trains Per Week (One Way)
Sheerness (Medway)		
Various origins	Scrap metal	3 – 4
Poole		
Mendip Hills	Aggregates	0 – 1
Par		
Unknown	Dried clay	0 – 1

4.3 Port/rail freight connections

4.3.1 Table 4.4 shows all port-related rail freight connections along the coastline from Medway to Falmouth. As can be seen, the majority of the ports in the study area have rail freight infrastructure in existence, but in many cases the terminals are out of use (have extant infrastructure but have not been used for more than two years) or not regularly used (not currently active but have witnessed flows within the last two years).

4.3.2 Dover was connected to the rail network and offered train ferries to the European mainland, but the terminal was removed after the opening of the Channel Tunnel in 1994.

4.3.3 In the case of Poole, the harbour terminal itself is out of use, but a stone terminal on the harbour branch line remains active.

4.3.4 The terminal in Portsmouth was completed in 2009 but has not seen any regular traffic. Several trials have taken place since the terminal's opening but no permanent services have yet to be established.

Table 4.4: Status of rail freight connections to ports

Port	Rail Terminal	Details
Medway	Yes	Active terminals within Medway port area at Thamesport, Grain, Cliffe and Sheerness (steelworks); terminals at Chatham, Queenborough and Sheerness (docks) are not in regular use; terminal at Ridham Dock out of use
Ramsgate	No	-
Dover	No	-
Channel Tunnel	Yes	Active terminal at Cheriton and marshalling yard at Dollands Moor, with link between British and French rail networks
Newhaven	Yes	Terminal out of use
Shoreham	No	-
Portsmouth	Yes (but not within port)	Terminal not in regular use
Southampton	Yes	Several active terminals within Western and Eastern Docks
Poole	Yes	Terminal out of use (though nearby Hamworthy stone terminal in use)
Weymouth	Yes	Terminal out of use
Teignmouth	No	-
Plymouth	Yes	Terminal at Cattewater, not in regular use
Fowey	Yes	Active terminal
Par	Yes	Active terminal
Falmouth	Yes	Terminal out of use

4.3.5 Table 4.4 gives no indication of the capabilities of each of the terminals or their connections to the national rail network. Where terminals exist, they are often limited both in terms of train capacity and handling facilities, often restricting the number of trains that can run and the range of commodities they can handle. For the wider network, the most significant measures of capability for freight relate to route availability and loading gauge, the former relates to permissible axle weight loadings whilst the latter dictates the maximum dimensions of rail vehicles and their loads. Other measures which are of lesser significance include passing loop lengths, line speeds and electrification.

4.3.6 Based on Network Rail's 2010 Route Plans, Table 4.5 summarises the highest route availability and loading gauge for the connection to each of the ports. While these are technical measures, in both cases the higher the number the greater the capability, so the connections to the Channel Tunnel, Isle of Grain and Southampton have the greatest capabilities while those in Devon and Cornwall are the most limiting for freight traffic.

Table 4.5: Network capability measures for the study ports (as at 2010)

Port	Route Availability	Loading Gauge
Medway	RA7-9	W8 (Isle of Grain); W6 (other)
Channel Tunnel	RA7-9 (RA10 on HS1)	W9
Newhaven	RA7-9	W7
Portsmouth	RA7-9	W7
Southampton	RA7-9	W8
Poole	RA7-9	W7
Weymouth	RA7-9	W7
Plymouth	RA1-6	W6
Fowey	RA1-6	W6
Par	RA1-6	W6
Falmouth	RA1-6	W7

4.4 Future developments

4.4.1 This section provides a broad assessment of the likely developments and key constraints relating to port-focused rail freight activity over the next 20 years. Given the uncertainties involved, this assessment is reasonably subjective, but aims to use the available evidence to discuss the likely changes in the medium- to long-term. First the general prospects for the rail freight market are considered, and then specific issues relating to the study area are discussed.

4.4.2 Considerable work has already been carried out by the rail industry to develop freight forecasts for the period up to 2030. Table 4.6 shows the agreed forecasts for 2015 and 2030 for the key measures of activity. These predict a more than doubling of rail freight volumes (i.e. tonne kilometres) by 2030 and an increase from 13% to 21% in rail's share of the freight market over the same time period.

Table 4.6: Rail freight forecasts to 2015 and 2030 (Rail Freight Group/Freight Transport Association)

	2006 (Actual)	2015	2030
Tonnes (million)	115.5	122.1	189.6
Tonne kilometres (billion)	23.5	31.0	50.4
Trains (thousand)	409	434	634
% tonne kilometres by rail	12.6	15.0	20.7

4.4.3 Table 4.7 provides a commodity breakdown for these forecasts. While limited growth potential is identified in the traditional bulk markets, the non-bulk sectors, which include intermodal services, are expected to witness very considerable increases in activity. This is particularly the case for domestic non-bulk, where rail currently has an extremely low market share, but also holds true for port non-bulk flows, where a four-fold increase is predicted.

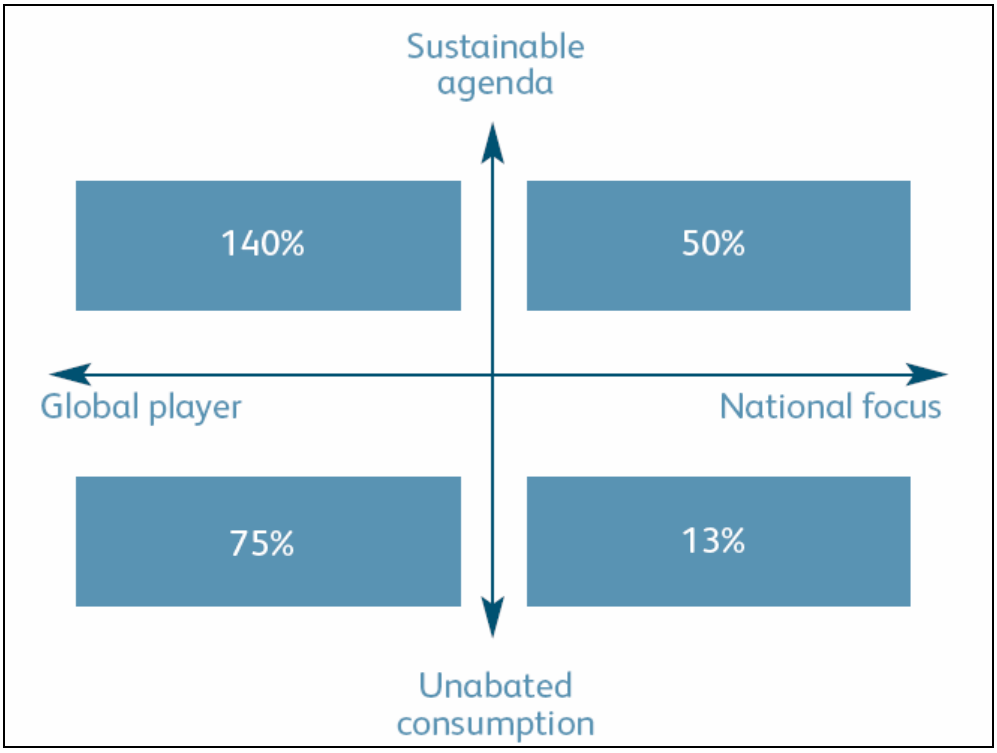
Table 4.7: Commodity breakdown for rail freight forecasts (Rail Freight Group/ Freight Transport Association)

Commodity	Million Tonnes Lifted			Billion Tonne Kilometres		
	2006*	2015	2030	2006*	2015	2030
Coal	51.4	35.7	41.1	8.8	6.0	6.0
Metals	11.0	11.5	13.1	2.2	2.1	2.1
Ore	6.5	6.1	5.5	0.3	0.3	0.2
Construction	21.4	23.8	30.3	2.7	2.9	3.5
Auto	0.3	0.5	0.5	0.1	0.2	0.2
Petro/chemicals	8.1	8.5	9.3	2.1	2.1	2.3
Waste	2.0	2.1	2.0	0.2	0.2	0.2
Domestic non-bulk	2.2	8.9	31.9	1.0	5.4	14.8
Port non-bulk	12.8	25.0	55.9	4.9	10.5	19.9
Total	115.5	122.1	189.6	23.5	31.0	50.4

4.4.4 In 2010, Network Rail published its Network RUS, which developed four scenarios for the long-term to allow sensitivity testing of the forecast rail activity, including freight. These scenarios were based on two sets of assumptions as shown in Figure 4.4, one ranging from continued globalisation to a more national focus and the other from continued consumption to a sustainability agenda. The assumptions adopted for the analysis include energy prices, the internalisation of external costs and trade imports and exports.

4.4.5 Figure 4.4 shows the outcome of this scenario exercise, with predicted rail freight growth rates by 2031 ranging from 13%, under a national focus and continued unabated consumption scenario, to 140% with a combination of continued globalisation and the pursuit of a sustainability agenda.

Figure 4.4: Network Rail freight growth estimates (in tonne kilometres) between 2006/07 and 2031 under different scenarios



4.4.6 Table 4.8 provides a commodity breakdown for the extremes of these scenarios. While using different commodity definitions, there is a close correlation between non-bulk in Table 4.7 and consumer goods. The outcome of the scenario exercise is therefore similar to the forecasts, with general stability or decline in the key traditional bulk sectors but with considerable growth in the non-bulk markets predicted even with the lowest forecast growth rate. With the highest growth rates, more than 300% growth in international flows of consumer goods is predicted and, for domestic flows, a 1200% increase is foreseen. In absolute terms, 310% growth in international flows represents a greater additional volume than a 1200% increase in domestic flows, given the relative sizes of the existing markets.

Table 4.8: Network Rail's range of forecast growth in rail freight tonne kilometres carried between 2006/07 and 2031 (by commodity)

Commodity	Lowest Forecast Growth Rate	Highest Forecast Growth Rate
Coal	-70%	0%
Metals	-20%	20%
Construction materials	6%	50%
Consumer goods – carried internationally	60%	310%
Consumer goods – carried domestically	200%	1200%
Total rail freight	13%	140%

4.4.7 The growth forecasts set out in the previous section will have a considerable impact on the rail network serving the ports in the study area. In particular, the predicted growth in consumer goods carried internationally would lead to significant increases in rail freight activity at key container ports (e.g. Southampton) and through the Channel Tunnel.

4.4.8 **Southampton** – considerable efforts have been made to improve the network capabilities for the core and diversionary routes serving Southampton, and some of these are now coming to fruition. With the core gauge enhancement scheme now completed, and some diversionary routes to follow, the ability to carry increased container volumes should dramatically increase. Using data from a large survey of container train load factors carried out by the University of Westminster in 2007, and based on the service patterns at that time, it is theoretically possible to convey 86% more container TEUs (twenty-foot equivalent units) by converting all existing services to 72 TEU capacity and running them fully loaded. There are many reasons why this is not practicable, but the gauge enhancement should provide for a considerable increase in rail volumes of deep sea containers. The additional gauge clearance and capacity schemes identified earlier should allow for further growth in the medium- to long-term. Assuming there is continuity of the current rail planning framework, the inclusion in the Strategic Freight Network of the key routes from Southampton should ensure that potential bottlenecks in the longer-term are identified in sufficient time for action to be taken to provide for further growth.

4.4.9 **Channel Tunnel** - there appear to be few physical constraints to the development of through freight trains prior to 2030. 35 train paths per day in each direction between the Channel Tunnel and Wembley on the 'classic' rail network are safeguarded until 2052, which would allow up to 10 times more through freight trains to be operated when compared with the position in early-2011. In addition, the proposed use of High Speed 1 for freight offers additional capacity and, more importantly, network capability for rail freight, not least to be able to carry European gauge traffic to the London area (and possibly beyond, as and when other lines become available). Looking to the future, it seems that the political, organisational and cost issues are of greater significance, since these have already acted as a constraint on growth. Volumes on through rail freight services have never recovered from the security and asylum problems a decade ago, problems that were out of the direct control of the rail authorities but which significantly disrupted the flow of freight trains through the Channel Tunnel. Rail operators also claim that Eurotunnel's track access charge for using the Channel Tunnel is prohibitively expensive for many through traffic flows, while the fragmented nature of the various national rail networks has also led to performance and cost issues for international flows, although there have been some recent signs of improvement in this regard. Given that through rail freight services have a very limited share of the cross-Channel market, estimated by DB Schenker to be less than 2%, there is significant scope for the growth of

rail freight volumes if the non-infrastructure-related issues are resolved. There are no known capacity constraints on the Eurotunnel rail freight shuttle operation. Given that this operation is internal to Eurotunnel, any constraints that may arise are likely to be relatively easily dealt with, though the interactions with through passenger and freight services may result in capacity problems at some future date; this would require further investigation. The level of competition provided to ports by the Channel Tunnel remains an unknown, although freight volumes could be expected to rise to 2007 volumes as the economic recovery continues. It seems logical that Channel Tunnel trade will increase in a similar proportion to trade increases at UK ports, although the relaxation of the previously mentioned constraints may increase overall market share.

4.4.10 **Thamesport** – the outlook for Thamesport is less clear. The limited loading gauge is somewhat of a constraint, since it increases the inefficiencies of carrying the larger deep sea containers. With no gauge enhancement of the route serving Thamesport yet committed, the options for increasing rail freight volumes are fairly limited, though there are possibilities resulting from improved load factors, longer trains and/or additional train services. Based on the 2007 load factor survey carried out by the University of Westminster, it would theoretically be possible to carry an additional 36% of container TEUs by filling the existing trains. In the longer-term, if Thamesport container volumes grow, the business case for improving the capacity and capability of the route to London would be likely to strengthen.

4.4.11 **Other ports** – virtually all of the attention in the rail industry planning documents considered in this analysis is focused on the main ports currently generating rail freight activity. This is consistent with the overall rail network planning objective of focusing on the development of the key freight corridors. It is clear that some other port authorities are keen to establish rail freight services, however. For example, the recent investment in the new terminal at Portsmouth may generate some activity, though the rail network issues would broadly be the same as for Southampton since the main route from Portsmouth joins the line from Southampton at Eastleigh. There are also aspirations to reintroduce rail freight services at both Dover and Sheerness ports. It seems unlikely that there will be any significant change in rail freight activity before 2020 at those ports not currently served, but the situation beyond 2020 is less clear at the present time. Future rail freight service provision at Fowey will be determined by the broader trends in the Cornish china clay extraction and the destination of the materials extracted.

4.4.12 In relation to network capability issues, the Route Utilisation Strategies (RUS) produced by Network Rail provide the clearest indication of the existing constraints for freight flows. Six RUS documents are of relevance to the study area: Freight and four geographic ones (South London, Kent, Sussex, South West Main Line and Great Western). Those for Kent, Sussex and Great Western were published in 2010 and have a reasonable level of up-to-date information relating to specific freight constraints; the South London RUS is from 2008, but is similarly detailed.

4.4.13 However, the South West Main Line and Freight RUS documents were published in 2006 and 2007 respectively and, in addition to being more dated, their level of detail is far less than the more recent ones. Subsequent to the production of the Freight RUS, there has been the development of the Strategic Freight Network (SFN) which is of relevance to the study area, and an update of the status of the recommendations from each RUS was published in 2010. In combination, these documents provide a reasonably thorough view on the current network constraints for rail freight in the study area.

4.4.14 Table 4.9 summarises those gaps that relate to the routes serving the study area ports and the associated recommendations made in the RUS documents, together with the status of each recommendation and the planned timescale for delivery. It should be borne in mind that there may be further constraints elsewhere on the rail network that would

affect rail's ability to provide additional services, but the ones shown in the table represent those that are most directly relevant.

Table 4.9: Status of relevant recommendations from RUS documents

Gap	RUS Recommendation	Status	Delivery Timescale	Ports Affected
Gauge constraints Southampton – WCML	W10 gauge clearance of core route (Southampton – Eastleigh – Reading West – Leamington – Coventry – Nuneaton)	Committed	2009 – 2014	Southampton (Portsmouth, Poole, Weymouth)
Gauge constraints Southampton – WCML diversionary route via Andover	W10 gauge clearance of diversionary route (Southampton – Laverstock – Andover – Basingstoke)	Committed	2009 – 2014	Southampton (Portsmouth, Poole, Weymouth)
Freight capacity and capability (Atlantic Line)	Remove approach control at Crofton Road Junction	Committed	2009 – 2014	Medway
Freight capacity and capability (Redhill)	Enable electric locomotives to use Channel Tunnel diversionary route via Redhill	Committed	2009 – 2014	Medway, Newhaven
Freight capacity and capability (High Speed 1 (HS1))	Use of HS1 for freight	Committed	2009 – 2014	Medway
Freight capacity Leamington – Southampton	Grade separation at Reading West Junction	Committed	2014 – 2019	Southampton
Freight capacity and capability (West London Line)	Provide freight loops on the West London Line	Uncommitted	Beyond 2019	Channel Tunnel, Medway
Freight capacity and capability (Channel Tunnel routes)	Provision of W12 gauge to the Channel Tunnel	Uncommitted	Beyond 2019	Medway
Freight capacity and capability (Maidstone East route)	Longer freight trains on Channel Tunnel routes and gauge enhancements	Uncommitted	Beyond 2019	Medway
Freight capacity and capability (Grain access)	Provision of Higham to Grain chord	Uncommitted	Beyond 2019	Medway
Gauge constraints Southampton – WCML diversionary route via Melksham	W10 gauge clearance	Uncommitted	To be determined	Southampton
Freight capacity and capability (Grain Branch)	Freight loops on the Grain branch	Uncommitted	Not applicable	Medway
Freight capacity and capability (Grain Branch)	Provision of W10 gauge to Grain	Withdrawn	Not applicable	Medway

4.4.15 It is clear that there are several key improvements that will be implemented in the current Network Rail funding period (i.e. by 2014), not least the gauge clearance to W10 for the core route from Southampton to the West Coast Main Line (WCML) which was completed in February 2011. Not surprisingly, the list of committed and proposed schemes is heavily weighted to the key existing freight routes connecting with the Channel Tunnel, Southampton and, to a lesser extent, Thamesport on the Isle of Grain, providing additional network capability both for everyday and diversionary purposes. There are no specific plans to provide new or improved capacity at, or on the routes serving, any of the other ports in the study area.

4.4.16 In parallel to the implementation of the geographical route Utilisation Strategies, there has been considerable progress with the development of the Strategic Freight Network (SFN). This essentially envisages a core trunk network that would:

- Provide enough capacity for freight growth.
- Seek to reduce or eliminate conflicts between freight and passenger traffic.
- Minimise the amount of rail freight transiting the London area.
- Allow for longer trains and suitable axle loads.
- Offer sufficient gauge capabilities.
- Provide specific diversionary routes for each of the core routes so as to ensure network availability at all times.

4.4.17 For the study area, the SFN only includes routes to/from Channel Tunnel and Southampton, focusing primarily on gauge enhancement and line capacity. In addition to the schemes already committed, the proposed network also includes gauge enhancement of the routes from Basingstoke and Reading to London, and the reopening and gauge enhancement of the Oxford to Bletchley route, so as to provide more diversionary options for container trains to/from Southampton.

4.5 French rail freight

National overview

4.5.2 Rail freight in France has been in decline in recent years, with the outward movement of freight by 'full' trains falling by 27% between 2008 and 2009. Over the same period the number of incoming 'full' trains has increased by 37%.

4.5.3 Official data on foreign and intra-Europe rail trade is difficult to find, and as such some data gaps exist.

4.5.4 The French government has issued guidelines to start intensive restoration of its rail network infrastructure, aiming to encourage modal shift towards rail and increase interoperability with European networks. The overall objective is to increase rail and river mode share by 15%-16% by 2020 (away from road).

4.5.5 Ports and rail freight have very close ties, with several ports in the Channel Arc Manche region directly involved in major railway projects that are to be initialised by the French Government, local administrative regions or the ports themselves.

4.5.6 The majority of ports are connected to the national rail network, offering significant potential for the onward movement of goods. A lot of the ports also have improvements planned, which will serve to improve the efficiency of the overall rail network.

4.5.7 Table 4.10 provides a summary of the national and European network connections available to each port in the study area. Planned investments are also provided.

Table 4.10: French port/rail connections and improvements

Port	Connection with National Freight Network	Connection with European Freight Network	Planned Railway Investments
Boulogne	Yes	No data	
Brest	Yes	No	Combiwest project
Caen	Yes	No	
Calais	Yes	Yes (Channel Tunnel)	Launching of OFP (2011, local rail operator)
Cherbourg	Yes	No	No
Dieppe	Yes	No	Local port improvements
Dunkerque	Yes	Yes	Renovation of internal rail network and development of European connections
Fécamp	Yes	No	Local port improvements and indirect connection at RTE
Granville	No data	No data	No data
Le Havre	Yes	Yes	Development of European connections.
Le Tréport	Yes	No	Local port improvements
Roscoff	No	No	Combiwest project
Rouen	Yes	No	Direct connection to RTE
Saint Brieuc	No	No	No
Saint Malo	No data	No	Combiwest project

4.5.8 The Combiwest project is supplied by a combined transport operator from Brittany, and has connected Rennes to Lyon via Macon by electric traction since 2011. Its initial capacity was 40 containers, and plans are in places to link with Morlaix at Rungis in 2012. Other ports within the Channel Arc Manche study area are also exploring the possibility of connecting to this network.

4.5.9 The following locations are officially recognised as bottlenecks and provide constraints to the flow of freight:

- Rail network directly serving Le Havre port.
- Rail network directly serving Rouen port.
- The city of Lille, which has knock on effects for all ports in the northern part of the Channel Arc Manche region.

4.5.10 Addressing all of these issues is considered essential if the full potential of rail freight transportation is to be fully achieved.

4.5.11 A summary of recent rail projects in North West France is provided in Appendix F.

Case study ports

4.5.12 Case studies of rail projects being implemented at the ports of Le Havre, Rouen, Dunkirk and Calais are described below.

The Port of Le Havre

4.5.13 Le Havre represents one of the most serious railway bottlenecks in the west of France. This is at least partly attributable to the physical geography of the area.

4.5.14 The French Government has decided to implement a new high speed railway between Paris and Le Havre, offering connections to adjoining European networks. This new line will also be used for freight traffic.

4.5.15 The existing and future rail capacity serving the Port of Le Havre is shown in Table 4.11 and Table 4.12. The overall tonnage handled fell from 5.6M in 2009 to 3.4M in 2010, with a future multi-modal hub expected to increase capacity by 2013.

Table 4.11: Le Havre – existing rail freight connections

Railway Stations Connected	Frequency of Weekly Return Connections	Number of FOCs
Le Havre – Bordeaux	5 a week	2
La Havre – Chalon-sur-Saône	2 a week	1
Le Havre - Cognac	5 a week	1
Le Havre - Dijon	5 a week	1
Le Havre - Lille	2 a week	1
Le Havre - Lyon	7 a week	2
Le Havre - Marseille	2 a week	1
Le Havre - Milan	5 a week	1
Le Havre - Paris Valenton	5 a week	1
Le Havre - Strasbourg	4 a week	1
Le Havre - Turin	5 a week	1

Table 4.12: Le Havre – future rail freight investments

Future plans Railway station	Project	Future Capacity	Planned Date
Le Havre	Multimodal hub	150,000 TEU/year	2013

4.5.16 In line with the move towards the sustainable onward movement of freight, the port of Le Havre also plans to increase the modal share of rail and river transport. This is shown in Table 4.13.

Table 4.13: Growth in rail and river transport at Le Havre (2013-30)

Objectives	Increase in Modal Share of Rail Transport	Increase in Modal Share of River Transport	Comments
2013	10%	10%	In the current configuration the Port of Le Havre could operate efficiently until 2020
2015	10.8%	No data	
2020	13%	12%	
2030	No data	13%	

Port of Rouen

4.5.17 The second serious bottleneck in the west of France is found at Rouen. As with Le Havre, this is partly linked to the limitations imposed by the surrounding physical geography.

4.5.18 These geographical constraints were highlighted by the Managing Director of the Conseil Regional of Haute Normandie at a political and technical conference at Bruxelles on 24th of March.

4.5.19 Current rail freight data is not available for this port, but a multimodal hub allowing an extra 250 trains per year is planned in the future.

Port of Dunkerque

4.5.20 The rail infrastructure at Dunkerque can be summarised as follows:

- Accounts for 12% of total French rail freight.
- All the internal rail network needs to be renovated.
- The rail links within the surrounding hinterland need to be developed.
- Huge benefits would be created if the freight rail station was connected with major European freight corridors.

4.5.21 No detailed data was available for Dunkerque describing total flows.

4.5.22 The proposed development of rail freight at the port of Dunkerque is summarised in Table 4.14. This shows for example that the total freight transported by rail is predicted to more than double between 2013 and 2020.

Table 4.14: Proposed development of rail freight at Dunkerque

Freight type (Million Tonnes)	2008		2013		2020	
	Transit Traffic	Rail Traffic	Transit Traffic	Rail Traffic	Transit Traffic	Rail Traffic
Liquid bulk	1	0	1.1	0	1.4	0
Coal	2.1	1.86	2.65	2.2	4	3.7
Ore	2.9	2.9	1.9	1.9	3.3	3.3
Cereals	1.1	0.09	1.3	0.3	2.5	0.9
Sand	0.5	0	0.6	0	0.6	0
Small Bulk Solid	1.1	0.32	1.2	0.6	1.2	0.5
Cars	0	0	0.1	0	0.4	0.1
Ro-Ro accompanied	0	0	0	0	0	0
Ro-Ro un-accompanied	0	0	0.4	0.1	1.6	0.5
Containers	1.7	0.09	2.4	0.8	10	4
Conventional	0.4	0.28	0.7	0.5	0.5	0.1
TOTAL	10.	5.54	12.35	6.4	25.5	13.1

4.5.23 The following strategic connections are also planned to develop links with key European corridors:

- Establish a link with the rail corridor 'Rotterdam – Anvers – Luxembourg – Metz – Dijon – Lyon'.

- Extend the 'Gênes – Milan – Duisbourg – Anvers – Zeebrugge' corridor through the Channel Tunnel into northern parts of the UK.
- Develop 2 new rail links with Belgium, 1 in the direction of Adinderke, the other in the direction of Strasbourg (along the Belgium border).

Port of Calais

4.5.24 The Port of Calais can be summarised as follows:

- The port rail network is virtually non-existent.
- The city has launched an ambitious project "Calais 2015" which includes investment in freight and passenger rail services.

Summary

4.5.25 The majority of French ports are linked to the national rail infrastructure, although there has been a recent decline in volumes across the board.

4.5.26 The ports however appear to be following government policy to re-invigorate the French railway network. As such a lot of improvement plans are prepared and it is likely that the railways will play an increasingly prominent future role.

5 Growth scenarios

5.1 UK background

5.1.1 Many different scenarios could be used to consider the future growth of UK ports, all based on alternative underlying assumptions. These range from specific Master Plan documents, to more general figures predicting country wide trends. However, many of these forecasts were made before the economic downturn in 2008.

5.1.2 The CB Economic team have therefore developed up to date growth scenarios (by port and freight) using the following methodology:

- Historical data (1994-2009) of total freight moved at each port by category (liquid bulk, dry bulk, LoLo, RoRo, Other) was obtained.
- GDP data showing percentage growth on the previous year was also collected for the same period (1994-2009).
- Regression analysis was used to derive a relationship between GDP growth and growth in freight traffic in the four categories described above.
- GDP growth forecasts were collected for 2020 and 2030.
- The relationships derived in the regression analysis in were used to forecast future growth by freight category using the future estimates of GDP growth.
- An adjustment was made for any planned developments that may alter the growth forecasts.

5.1.3 This methodology has produced the following growth rates for 2020 and 2030, as detailed in Table 5.1 and Table 5.2.

Table 5.1: UK freight growth rates (2020, from 2010 baseline)

	Containers (Units)	Dry Bulk (Tonnes)	Liquid Bulk (Tonnes)	Other (Tonnes)
Dover	34%	16%	N/A	-11%
Falmouth	N/A	16%	-13%	-11%
Fowey	N/A	16%	N/A	N/A
Littlehampton	N/A	16%	N/A	N/A
Medway	39%	16%	-13%	-11%
Newhaven	39%	16%	N/A	N/A
Plymouth	39%	16%	-13%	-11%
Poole	27%	16%	N/A	-11%
Portsmouth	39%	16%	N/A	-11%
Ramsgate	39%	16%	N/A	N/A
Shoreham	N/A	16%	-13%	-11%
Southampton	39%	16%	-13%	-11%
Teignmouth	N/A	16%	N/A	N/A
Weymouth	N/A	N/A	N/A	N/A

Table 5.2: UK freight growth rates (2030, from 2010 baseline)

	Containers (Units)	Dry Bulk (Tonnes)	Liquid Bulk (Tonnes)	Other (Tonnes)
Dover	75%	27%	N/A	-26%
Falmouth	N/A	27%	-24%	-26%
Fowey	N/A	27%	N/A	N/A
Littlehampton	N/A	27%	N/A	N/A
Medway	80%	27%	-24%	-26%
Newhaven	80%	27%	N/A	N/A
Plymouth	80%	27%	-24%	-26%
Poole	52%	27%	N/A	-26%
Portsmouth	80%	27%	N/A	-26%
Ramsgate	80%	27%	N/A	N/A
Shoreham	N/A	27%	-24%	-26%
Southampton	80%	27%	-24%	-26%
Teignmouth	N/A	27%	N/A	N/A
Weymouth	N/A	N/A	N/A	N/A

5.1.4 Future passenger volumes were generated on a port by port basis using a similar methodology to that discussed for freight. This involved looking at historical numbers from the ports (previous 5-10 years) and applying derived annual growth rates forward to 2020/2030.

5.1.5 For all ports, passenger volumes are predicted to fall by 25% by 2020 and 42% by 2030. This is largely down to the continued rise of low cost airlines and the recent economic downturn.

5.2 UK forecast port activity

Freight

5.2.2 Baseline freight movement by port and freight volume are summarised in Table 5.4. The results of applying the growth factors calculated in the previous section to the baseline figures are highlighted in Table 5.3.

Table 5.3: UK forecast freight growth (2020 and 2030)

Port	Total (Tonnes)			Increase (Tonnes)		Increase %	
	Baseline*	2020	2030	2020	2030	2020	2030
Dover	433,472	429,188	433,472	-4,284	0	-1.0%	0.0%
Falmouth	930,000	849,176	773,203	-80,824	-156,797	-8.7%	-16.9%
Fowey	773,562	899,385	979,908	125,823	206,346	16.3%	26.7%
Littlehampton	23,357	27,156	29,587	3,799	6,230	16.3%	26.7%
Medway - Sheerness	1,450,000	1,356,192	1,206,242	-93,808	-243,758	-6.5%	-16.8%
Medway - Thamesport	13,149,000	14,136,105	15,007,757	987,105	1,858,757	7.5%	14.1%
Newhaven	303,301	352,634	384,206	49,333	80,905	16.3%	26.7%
Plymouth	1,944,000	1,881,974	1,799,285	-62,026	-144,715	-3.2%	-7.4%
Poole	364,000	423,206	461,096	59,206	97,096	16.3%	26.7%
Portsmouth	3,953,000	3,700,357	3,318,107	-252,643	-634,893	-6.4%	-16.1%
Ramsgate	37,069	43,098	46,957	6,029	9,888	16.3%	26.7%
Shoreham	1,900,000	2,013,622	2,041,935	113,622	141,935	6.0%	7.5%
Southampton	37,578,000	37,245,665	37,459,654	-332,335	-118,346	-0.9%	-0.3%
Teignmouth	400,000	465,061	506,699	65,061	106,699	16.3%	26.7%
Weymouth	0	0	0	N/A	N/A	N/A	N/A

* 2010 data where available, 2009 in all other instances - for sources/dates see Table 2.1, Table 2.2 and Appendix E

5.2.3 All output should be considered relatively, with for example, the decline of 118,346 tonnes at Southampton by 2030 representing only a 0.3% decline on present day baseline totals. The 144,715 tonne decline at Plymouth is for example more significant, representing a 7% fall in baseline freight volumes handled.

5.2.4 Looking forward to the year 2030, the table highlights the following key points:

- Large increases at Fowey, Newhaven, Poole, Ramsgate, Teignmouth, Shoreham and Littlehampton due to a current reliance on bulk freight which is predicted to increase.
- Decline at Falmouth, Plymouth and Southampton due to declines in the import and export of liquid bulk, primarily linked to a forecast reduction in the import of oil. The effect that this has at Southampton is however partly offset by increases in the other types of freight handled.
- Less activity at Medway Sheerness and Portsmouth due to declines in 'other' imports and exports.
- Little long term change at Dover due to variation of type of freight handled.

Table 5.4: Baseline imports and exports by type and port (2010 data where available, 2009 in all other instances)*

Port	Containers (Tonnes)		Dry Bulk (Tonnes)		Fresh Produce (Tonnes)		Liquid Bulk (Tonnes)		Other (Tonnes)		Vehicles (Tonnes)		Total (Tonnes)	
	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export
Dover			125,558	35,667	272,247								397,805	35,667
Falmouth			120,000	15,000			420,000	370,000		5,000			540,000	390,000
Fowey			27,817	745,745									27,817	745,745
Littlehampton			19,607	3,750									19,607	3,750
Medway - Sheerness				250,000	350,000				450,000		400,000		1,200,000	250,000
Medway - Thamesport	1,568,000	1,570,000	3,323,000	205,000			4,425,000		1,433,000	218,000	349,000	58,000	11,098,000	2,051,000
Newhaven			209,905	93,396									209,905	93,396
Plymouth			295,000	349,000			1,217,000		6,000		43,000	34,000	1,561,000	383,000
Poole			136,000	228,000									136,000	228,000
Portsmouth	118,000	104,000	289,000						582,000	12,000	1,636,000	1,212,000	2,625,000	1,328,000
Ramsgate			37,069										37,069	0
Shoreham			1,200,000				180,000		370,000	150,000			1,750,000	150,000
Southampton	3,614,000	3,986,000	1,024,000	1,022,000	54,000		18,532,000	9,228,000	15,000	103,000			23,239,000	14,339,000
Teignmouth			200,000	200,000									200,000	200,000
Weymouth													0	0
UK Total	**5,300,000**	**5,660,000**	**7,006,956**	**3,147,558**	**676,247**	**0**	**24,774,000**	**9,598,000**	**2,856,000**	**488,000**	**2,428,000**	**1,304,000**	**43,041,203**	**20,197,558**
Boulogne			13,744	26,853	3,498		72,292		3,107				92,641	26,853
Brest			1,257,458	464,186			908,124		104,589	81,464			2,270,171	545,650
Caen			352,369	352,369					57,038	57,039			409,407	409,408
Calais									10,566,691	6,783,220			10,566,691	6,783,220
Cherbourg	1,575		20,966	20,036					16,290	9,590			38,831	29,626
Dieppe			291,897					94,520	127,675	59,734			419,572	154,254
Dunkerque			18,060,000	4,609,000			4,477,000	1,151,000	6,475,000	7,942,000			29,012,000	13,702,000

Port	Containers (Tonnes)		Dry Bulk (Tonnes)		Fresh Produce (Tonnes)		Liquid Bulk (Tonnes)		Other (Tonnes)		Vehicles (Tonnes)		Total (Tonnes)	
	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export
Granville				127,289									0	127,289
Le Havre	10,595,651	12,445,790	3,073,187	322,517			37,751,953	4,636,401	686,300	691,694			52,107,091	18,096,402
Le Tréport			234,917	30,227			29,711						264,628	30,227
Roscoff			79,493	3,915					211,249	189,925			290,742	193,840
Rouen			4,342,637	2,341,456			4,012,181	4,701,225	585,574	7,315,018			8,940,392	14,357,699
Saint-Brieuc			231,242	114,655									231,242	114,655
Saint-Malo			977,709	115,895			100,428	925	461,954	314,664			1,540,091	431,484
France Total	**10,597,226**	**12,445,790**	**28,935,619**	**8,528,398**	**3,498**	**0**	**47,351,689**	**10,584,071**	**19,295,467**	**23,444,348**	**0**	**0**	**106,183,499**	**55,002,607**

* For source/dates see Table 2.1, Table 2.2. & Appendix E

5.2.5 Of the ports where freight is forecast to grow over the next 20 years, Table 5.5 indicates a comparison between projected increases in absolute freight volumes and the current spare capacity at the ports as estimated by the operators.

Table 5.5: UK freight forecast increase v estimated spare capacity*

Port	Spare Baseline Capacity	Increase 2020	Increase 2030	Spare Capacity 2020	Spare Capacity 2030
Fowey	Unknown	125,823	206,346	N/A	N/A
Littlehampton	170,000	3,799	6,230	166,201	163,770
Medway - Thamesport	Unknown	987,105	1,858,757	N/A	N/A
Newhaven	4,000,000	49,333	80,905	3,950,667	3,919,095
Poole	1,000,000	59,206	97,096	940,794	902,904
Ramsgate	Unknown	6,029	9,888	N/A	N/A
Shoreham	2,000,000	113,622	141,935	1,886,378	1,858,065
Teignmouth	800,000	65,061	106,699	734,939	693,301

* For sources/dates please see Table 2.1, Table 2.2 and Appendix E

5.2.6 The table indicates that according to estimates, all ports will be able to comfortably cater for future forecast growth. However, it should be stressed that given the qualitative nature of the assessment of spare capacity, it is likely that the figures in the table are subject to a margin of error. In addition, no information on spare capacity has been received from Fowey, Medway Thamesport or Ramsgate.

5.2.7 Comparing the results in Table 5.5 to the summary list of constraints at each of the ports (Table 3.3) indicates that freight movements to Fowey, Teignmouth and Poole are constrained by traffic congestion on the A36 near Salisbury, with additional problems cited on the A350 when accessing Poole. Poole is particularly likely to be affected by this congestion as during the consultation exercise it was stated that freight leaving Poole arrives from all parts of the UK, whilst incoming freight travels to London and the east and west Midlands. The efficient movement of such freight is therefore threatened. Also, the ports at Shoreham and Teignmouth indicated that potential growth in activity would be constrained by land availability issues.

5.2.8 It should be noted that the central growth scenario tested here does not include a potential transfer of freight activity to the new London Gateway facility, which is expected to be fully operational in the near future. As a result, these growth forecasts could be interpreted as optimistic, although previous forecasts made before the economic downturn of 2008 predicted an annual growth that is not evident in our forecasts.

Passengers

5.2.9 Baseline passenger and vehicle numbers by port are summarised in Table 5.6.

Table 5.6: Baseline passenger and vehicle numbers (2010 where available, 2009 in all other instances)*

Port	Vehicles (Number)		Passengers (Number)	
	Import	Export	Import	Export
Dover	2,410,179	2,477,420	6,572,970	6,581,668
Falmouth			1,500	1,450
Fowey				
Littlehampton				
Medway - Sheerness				
Medway - Thamesport				
Newhaven	62,113	57,615	127,952	124,382
Plymouth			242,000	242,000
Poole			127,500	127,500
Portsmouth			1,106,000	1,106,000
Ramsgate	69,806	58,557	98,025	88,315
Shoreham				
Southampton	136,945	333,793	618,057	625,406
Teignmouth				
Weymouth	29,631	29,631	99,050	99,050
Boulogne	81,283	78,356	149,345	146,405
Brest			17,074	17,074
Caen	182,643	182,644	510,867	510,867
Calais	801,808	1,082,646	5,134,729	5,098,728
Cherbourg	394,337	466,440	309,705	309,706
Dieppe	30,678	40,981	125,600	128,808
Dunkerque			1,266,000	1,266,000
Fécamp				
Granville			87,132	87,132
Le Havre			131,673	136,990
Le Tréport				
Roscoff	89,190	87,915	268,181	265,954
Rouen			19,665	19,665
Saint-Brieuc				
Saint-Malo	112,035	99,063	505,977	441,447

* For sources/dates see Table 2.1, Table 2.2 and Appendix E

5.2.10 The growth figures previously calculated were applied to these, the results of which are shown in Table 5.7.

5.2.11 It can be seen that all passenger ports are expected to experience a significant decline in numbers. This is partly due to the economic downturn having a negative impact on passenger numbers over recent years.

5.2.12 It is also important to note that overall UK sea passenger numbers have been in decline since the mid 1990s as a result of the Channel Tunnel opening in 1994. The rise of low cost airlines has also contributed to this decline, and by 2008 for example 7 times as many visits abroad by UK residents were made by air rather than sea (Travel Trends 2008, International Passenger Survey).

Table 5.7: UK future passenger movements by port (2010 where available, 2009 in all other instances)*

Port	Total passengers		
	Baseline	2020	2030
Dover	13,125,000	9,823,084	7,548,096
Falmouth	2,950	2,208	1,697
Fowey	0	0	0
Littlehampton	0	0	0
Medway - Sheerness	0	0	0
Medway - Thamesport	0	0	0
Newhaven	252,334	188,853	145,116
Plymouth	484,000	362,238	278,345
Poole	255,000	190,848	146,649
Portsmouth	2,212,000	1,655,517	1,272,106
Ramsgate	186,340	139,462	107,163
Shoreham	0	0	0
Southampton	1,243,463	930,639	715,107
Teignmouth	0	0	0
Weymouth	198,100	148,263	113,926

* For sources/dates see Table 2.1, Table 2.2 and Appendix E

Alternative UK freight growth scenario

5.2.13 The methodology used to estimate UK growth does so on a port by port basis, and does not acknowledge the fact that port volumes grow and decline at similar rates across the study area.

5.2.14 This trend was specified by several key stakeholders, and to address this an alternative growth scenario was developed. This was based upon the MDS Transmodal Limited Final Report detailing the 'Update of UK Port Demand Forecasts to 2030 & Economic Value of Transhipment Study' (2007).

5.2.15 This study looked at forecasts for bulk fuels and trade cars, the inland distribution of cargo, forecast growth of commodities and the impacts of transhipment.

5.2.16 The growth factors are summarised in Table 5.8. It should be remembered that these figures are not port specific and were calculated prior to the economic downturn.

Table 5.8: UK freight growth factors 2020/2030 (000 tonnes) (MDS Transmodal Ltd)

Type	2010	2020	2030	2020 Growth Factor	2030 Growth Factor
Liquid Bulk	275,764	277,153	282,284	1.01	1.02
Dry Bulk	109,414	104,580	110,630	0.96	1.01
Other	33,817	35,322	36,476	1.04	1.08
Containers	15,271	20,735	27,432	1.36	1.80

5.2.17 The largest increase is expected to occur in the movement of containers. Dry bulk will decline by 2020, before experiencing a resurgence by 2030 and liquid bulk will steadily increase in volume.

5.2.18 The results of applying these factors on a port by port basis are shown in Table 5.9.

Table 5.9: Alternative UK growth outcomes by port (2010 where available, 2009 in all other instances)*

Port	Total (Tonnes)			Increase (Tonnes)		Increase (%)	
	Baseline	2020	2030	2020	2030	2020	2030
Dover	433,472	438,465	456,670	4,993	23,198	1.15%	5.35%
Falmouth	930,000	928,237	950,572	-1,763	20,572	-0.19%	2.21%
Fowey	773,562	739,385	782,159	-34,177	8,597	-4.42%	1.11%
Littlehampton	23,357	22,325	23,617	-1,032	260	-4.42%	1.11%
Medway - Sheerness	1,450,000	1,492,360	1,547,133	42,360	97,133	2.92%	6.70%
Medway - Thamesport	13,149,000	14,229,792	15,953,584	1,080,792	2,804,584	8.22%	21.33%
Newhaven	303,301	289,901	306,672	-13,400	3,371	-4.42%	1.11%
Plymouth	1,944,000	1,925,371	1,986,457	-18,629	42,457	-0.96%	2.18%
Poole	364,000	347,918	368,045	-16,082	4,045	-4.42%	1.11%
Portsmouth	3,953,000	4,172,847	4,403,642	219,847	450,642	5.56%	11.40%
Ramsgate	37,069	35,431	37,481	-1,638	412	-4.42%	1.11%
Shoreham	1,900,000	1,871,032	1,958,479	-28,968	58,479	-1.52%	3.08%
Southampton	37,578,000	40,354,384	44,322,834	2,776,384	6,744,834	7.39%	17.95%
Teignmouth	400,000	382,328	404,446	-17,672	4,446	-4.42%	1.11%
Weymouth	0	0	0	0	0	0	0

* For sources/dates see Table 2.1, Table 2.2 and Appendix E

5.2.19 In this instance all ports with a heavy reliance on dry bulk experience a decline by 2020 before growth by 2030.

5.2.20 All ports are set to grow by 2030, with the largest proportional growth experienced at Medway Thamesport, Southampton and Portsmouth. This is a direct result of these three posts having significant container cargo, which is predicted to grow by a factor of 1.80 by 2030.

5.2.21 In terms of actual tonnage, Southampton experiences growth in excess of 6 million tonnes per year, whilst Medway Thamesport experiences a growth of 2.8M tonnes. The smaller south west ports experience growth broadly in line with local economic expansion.

5.2.22 Table 5.10 compares this forecast growth against current port capacity.

Table 5.10: UK future freight volumes v current capacity

Port	Current Capacity	Predicted 2030 Flows	Spare Capacity 2030
Dover	Unknown	456,670	Unknown
Falmouth	1,500,000	950,572	549,428
Fowey	Unknown	782,159	Unknown
Littlehampton	170,000	23,617	146,383
Medway - Sheerness	1,740,000	1,547,133	192,867
Medway - Thamesport	Unknown	15,953,584	Unknown
Newhaven	4,000,000	306,672	3,693,328
Plymouth	Unknown	1,986,457	Unknown
Poole	1,000,000	368,045	631,955
Portsmouth	Unknown	4,403,642	Unknown
Ramsgate	270,000	37,481	232,519
Shoreham	2,000,000	1,958,479	41,521
Southampton	44,083,000	44,322,834	-239,834
Teignmouth	800,000	404,446	395,554

5.2.23 Southampton is the only port which is unable to meet the predicted increase in demand, although this should not be overplayed due to the 'missing' spare capacity only representing a small proportion of total freight to be handled.

5.2.24 Of greater note is the ability of all remaining UK ports to assimilate the anticipated growth in freight volumes. This suggests that the surrounding infrastructure is of greater importance in regards to handling future freight flows rather than the actual port capacities.

5.3 French background

5.3.1 Future growth at French ports was extremely difficult to calculate due to the following reasons:

- The strategic plans of the largest ports only look forward 5 years.
- investment programs are integrated into state and regional contracts, and only extend up to 2013/2015.
- The present economic crisis has resulted in changing consumer markets. This has led to port managers changing their visions of the future.

5.3.2 In light of the limitations, it was considered suitable to make forecasts only up to 2020. These were based upon the following factors:

- Statements by port leaders (including Dunkerque, Rouen and Le Havre).
- An estimated OECD growth rate of 1.9% for the period 2010-2020 was assumed.
- The large growth rate (+45%) on the 2010 demand of iron ore within the EU
- The growth rate (+21%) of 2010 coke imports within the EU .
- The growth rate (-25%) of 2010 steam coal imports within the EU.
- The growth rate (-1.44%) of the 2010 consumption of oil within the EU.
- The growth rate (+28%) of 2010 gas consumption within the EU.
- The growth rate (-3.5%) of the 2010 auto market within the EU,
- The slow restart of world trade.

5.3.3 Table 5.11 and Table 5.12 show additional sources of information (with comments) also used in the final calculation of French freight growth factors.

Table 5.11: PREDIT Growth Scenarios

PREDIT scenarios	2030/2005	Comments
World wide integration	+49%	It seems sensible to assume a growth rate between 25% and 30%. Increases in Transmanche traffic are directly linked to the enlargement of the EU.
Strong regional integration	+40%	
Low regional integration	+23%	
Decline and division, splitting	+20%	

Table 5.12: 2008 EUROSTAT demographic projections for 2030 and 2050

Scenarios	2005	2030	Growth rate (%)	Comments
Eire	4.1	5.1	+25%	Increases in population are likely to be linked to increases in cross channel traffic.
United Kingdom	60	69.2	+15%	
France	60.2	68	+13%	

5.3.4 This produces the growth rates by port and cargo type as summarised in Table 5.13.

Table 5.13: France freight growth rates (2010 to 2020)

	Containers (Units)	Dry Bulk (Tonnes)	Liquid Bulk (Tonnes)	Other (Tonnes)
Boulogne	0%	+5%	+20%	N/A
Brest	+3%			
Caen	+5%	+10%	N/A	N/A
Calais	+8%			
Cherbourg	+2%	+6%	N/A	N/A
Dieppe	0%	+7%	+10%	+30%
Dunkerque	+400%	+20%	+5%	+10%
Fécamp	0%	+7%	+12%	+16%
Granville	0%			
Le Havre	+117%	+8%	+5%	+16%
Le Tréport	0%	+30%	+5%	+0%
Roscoff	+0.25%			
Rouen	+8%	+20%	+6%	+8%
Saint Brieuc	0%			
Saint Malo	+0.25%	+8%	+3%	+3%

5.3.5 Passenger growth figures were also calculated, based upon:

- The estimated OECD growth rate of 1.9% between 2010 and 2020, and between 1.7% and 2% from 2020 to 2050.
- The strengthening role of Eurotunnel, and the impacts of this on long-term trade policy.
- Changes in consumer behaviour in response to economic and social difficulties in the UK and the Continent.
- The advantages held by historic passenger ports, and the future strengthening of this.
- Numerical analysis of passengers and freight on 2030 period (Analyses from 'Calais 2015 - Débat public').

5.3.6 The future passenger growth rates are summarised in Table 5.14.

Table 5.14: France passenger growth rates from 2010

	2020	2030
Eurotunnel	2%	
Boulogne	0%	
Caen	4%	6%
Calais	2%	3%
Cherbourg	0%	0%
Dieppe	1%	2%
Dunkerque	6%	8%
Granville	0%	0%
Le Havre	8%	10%
Roscoff	10%	15%
Saint Malo	2%	3%

5.4 French forecast port activity

Freight

5.4.2 The French growth factors (Table 5.13) where applied to the baseline French freight volumes detailed in Table 5.4. This allowed growth up to 2020 to be predicted for each port depending on the type of freight handled.

5.4.3 The results of doing so are highlighted in Table 5.15. This shows both the increases in total tonnages handled by each port, and the overall percentage growth that this represents.

Table 5.15: France forecast freight growth (2020)

Port	Total (Tonnes)		Increase (Tonnes)	Increase (%)
	Baseline	2020	2020	2020
Boulogne	119,494	135,982	16,488	13.8%
Brest	2,815,821	2,815,821	0	0.0%
Caen	818,815	889,289	70,474	8.6%
Calais	17,349,911	17,349,911	0	0.0%
Cherbourg	68,457	70,949	2,492	3.6%
Dieppe	573,826	659,933	86,107	15.0%
Dunkerque	42,714,000	48,970,900	6,256,900	14.6%
Fecamp	0	0	0	N/A
Granville	127,289	127,289	0	0.0%
Le Havre	70,203,493	99,773,532	29,570,039	42.1%
Le Tréport	294,855	375,884	81,029	27.5%
Roscoff	484,582	484,582	0	0.0%
Rouen	23,298,091	25,789,761	2,491,670	10.7%
Saint-Brieuc	345,897	345,897	0	0.0%
Saint-Malo	1,971,575	2,085,402	113,827	5.8%

5.4.4 In terms of tonnage, a large increase is expected at Le Havre, attributable to the large growth expected for the already significant container trade.

5.4.5 A large increase is also expected at Dunkerque, which does not even take account of the addition of container traffic. This is expected to grow rapidly, but was not picked up in the baseline figures.

5.4.6 The increase at Rouen is largely down to the increases that are expected in dry bulk, with the movement of ore likely to provide a boost to trade.

5.4.7 Away from Le Havre, the highest relative growth is expected at Le Tréport, experiencing a surge in demand for its dry bulk services.

5.4.8 No growth is often a reflection of no data being available, rather than a ports activity remaining constant.

5.4.9 It was not considered appropriate to compare growth factors with current spare capacity as a number of French ports expressed concerns with the values calculated.

Passengers

5.4.10 The results of applying the passenger forecasts to existing baseline flows are detailed in Table 5.16

Table 5.16: France future passenger movements by port

Port	Total Passengers		
	Baseline	2020	2030
Boulogne	295,750	295,750	295,750
Brest	34,147	34,147	34,147
Caen	1,021,734	1,062,603	1,083,038
Calais	10,233,457	10,438,126	10,540,461
Cherbourg	619,411	619,411	619,411
Dieppe	254,408	256,952	259,496
Dunkerque	2,532,000	2,683,920	2,734,560
Fecamp	0	0	0
Granville	174,264	174,264	174,264
Le Havre	268,663	290,156	295,529
Le Treport	0	0	0
Roscoff	534,135	587,549	614,255
Rouen	39,330	39,330	39,330
Saint-Brieuc	0	0	0
Saint-Malo	947,424	966,372	975,847

5.4.11 Increases are in line with the previously described growth factors, reflecting the largest increases at Dunkerque, Le Havre and Roscoff.

5.5 Port Master Plans

5.5.1 Predicted growth is also detailed in Port Master Plan documents. Caution should however by exercised in interpreting the figures as the majority of UK ports are privately owned, and thus champion their individual cause in a quest to maximise profits.

5.5.2 A summary of the growth predictions and development plans detailed in UK port Masterplan documents are detailed below (where available).

- **Dover** – (Planning for the next generation, Dover Harbour Board, 2006) – 30 year plan for the port, focussing on expansion to the west due to land/access saturation to the east. The cruise and fresh produce trades are also highlighted as opportunities to reduce the current reliance on ferry based operations. Steady growth is predicted up to 2034 in all trade sectors (vehicles, passengers, cruise, fresh produce and aggregates).

- **Plymouth** – (Port of Plymouth Evidence Base Study, Atkins, 2010) – outlines various future scenarios including; safeguarding existing position, targeted diversification, contraction of commercial and enhancement of leisure, rapid expansion driven by re-using vacant land and radical restructure.

- **Poole –** local press suggests a £20-25M investment, mainly focussing on leisure craft and a new cruise ship berth (e.g. Daily Echo Dorset, 09/02/2011).

- **Shoreham -** (Shoreham Port Masterplan, Shoreham Port, 2010) – highlights need for more port operational land, unmet demand for more leisure berths and opportunities for unique renewable energy projects. Also suggests that major reclamation is not viable, access needs to be improved and some areas in need of upgrading or redevelopment. The steps in the masterplan will allow for a 25% growth in trade (tonnes) by 2026 by focussing on 8 key areas of the port.

- **Southampton –** (ABP Port of Southampton Master Plan 2009-2030) – predicts a rise in total tonnes handled of 38,830,000 tonnes in 2005 to 62,663,000 tonnes in 2030. This will be accommodated by constructing new multi deck car compounds in the Eastern and Western Docks, constructing additional cargo sheds, re-commissioning berths to accommodate larger, deeper ships and introduction of a fifth passenger cruise terminal.

Future diversification in trade

5.5.3 Consultation with various stakeholders and ports has revealed that some ports will diversify in the future and seek less traditional income streams. Examples include:

- Ports often provide an ideal opportunity for off shore wind farms, becoming increasingly profitable as more traditional energy supplies are depleted. This is also in line with a general move towards more sustainable energy sources. The UK ports of Newhaven, Ramsgate and Shoreham have all implemented or are in the process of examining the introduction of such farms.

- The prominence of short sea shipping is expected to rise as shipping offers an increasingly sustainable mode of transport and helps to remove traffic from the UK's congested roads. This is expected to play an increasing role in all UK ports, and was also picked up in the French consultation when new routes were suggested between Le Havre and Caen amounting to somewhere between 50,000 and 180,000 containers per year.

- Although not enormously profitable to ports, the influx of cruise passengers does generate some revenue and is important to the local economy. Several ports plan cruise based expansion, ranging from Southampton and it's hosting of flagship vessels such as the Queen Mary 2, all the way to Falmouth, where a 'Cruise Project' was launched in 2008 to dramatically increase the number of cruise passengers by accommodating bigger ships.

- Several smaller UK ports also suggested a focus on leisure activities, able to provide a successful business model in its own right. Examples of this trend were found at Folkestone and Poole.

6 Impacts of growth

6.1 Cross channel trade

6.1.1 Growth in cross channel trade is particularly relevant to this study as it will impact ports on both sides of the channel.

6.1.2 From a UK perspective, the cross channel ports are considered to be Poole, Portsmouth, Newhaven, Dover and Ramsgate. This is primarily due to location, enabling the shortest crossings to France.

6.1.3 All other ports to the west generally trade with other EU countries and North American destinations.

6.1.4 Southampton has many established international trade routes to the Far East, Middle East, Africa, USA, South America as well as mainland Europe, and hence less of a focus is placed upon cross channel crossings. The other exception is Shoreham, which is a self described niche port, mainly specialising in importing construction materials from other European countries.

6.1.5 The constraints on development at the five UK cross channel ports have all been highlighted, namely the road based issues at Dover, Portsmouth, Poole, Newhaven and Ramsgate. This is specifically relevant at Dover, where direct competition is provided by the latent spare capacity of the Channel Tunnel. If Dover cannot provide seamless and efficient transfer of goods and passengers it may lose trade.

6.1.6 The main cross channel ports in France are Calais, Dunkerque, Boulogne, Dieppe and Cherbourg, again mainly prescribed by geographical location.

6.1.7 The French consultation suggested 3 means of aligning governance and maximising the economic contribution of Channel Arc Manche:

- Representatives of the economic, industrial and commercial sectors should identify complementary needs and goals and promote their development.
- Increased integration between the representatives and port unions of Channel Arc Manche.
- Creation of cross channel business clubs to further promote development.

6.1.8 Also highlighted were the following means of developing an improved economic identity within the Channel Arc Manche:

- Create an Channel Arc Manche Economic Forum to reduce the separation between England and France, also helped by the creation of a network of local ports dedicated to short shipping.
- Promote the establishment of sea and port unions to strengthen economic linkages within the Channel Arc Manche.
- Fully map the economic interrelationships to derive possible cooperation in terms of transportation flows (river and shipping).

6.1.9 The economic position of ports can also be strengthened by developing interport strategies, achieved via:

- Optimising routes with the objective of reducing the number of empty return journeys.
- Increase cooperation between Le Havre and Southampton to enhance the global visibility of the Complex Port Channel that feeds London and Paris.

- Increase cooperation between all Channel Arc Manche ports by developing mutual and shared objectives (for example, dredging that will benefit more than one port).

6.2 Strategic economic analysis

Economic consequences of passenger and freight flows

6.2.2 Ports provide both direct and indirect employment to the local economy. Direct employment comes in the form of jobs related to port operations whereas indirect employment relates to jobs in companies that supply general services to port related businesses. Indirect employment can be more significant than direct employment - for example Dover Port claims to support 6,700 direct jobs at the port and 24,000 indirect jobs in the South East, 14,000 of which are in the Dover district.

6.2.3 Port employment is proportional to the volumes of freight handled. Therefore we would assume that if freight throughput increased by 10% then employment (direct and indirect) would also grow by 10%. We would also assume that ports become more efficient over time, reducing total employment by 1% per annum.

6.3 Infrastructure proposals

Appreciation of main ports

6.3.2 Investment and infrastructure proposals are summarised in the following section. These also take account of the relative size of each port and their importance to the wider economy.

6.3.3 Current constraints at Southampton and Dover for example are given a greater weighting than constraints at smaller ports as the UK's economy has a greater dependence on the larger ports.

UK investment proposals

6.3.4 Table 6.1 summarises CB's prioritisation of investment proposals based on the analysis described above. In general, constraints identified at ports where freight is forecast to grow up to 2030 have been allocated a high priority, unless the total volume of freight handled is very low (i.e. Littlehampton and Ramsgate). Issues at other ports have been categorised as a medium priority.

Table 6.1: UK investment priorities

Port	High Priority	Medium Priority
Dover	Need for a lorry park in Kent; address congestion on A2 and A20	Look at onward distribution from Dover - many freight operators have their distribution centres a long way from the port
Falmouth		Improve poor local access and remove railway bridge height restriction.
Fowey	Congestion at Salisbury (A36)	
Littlehampton		Excavate on-shore bar to allow access outside high tide
Medway - Sheerness		Look at alternative ways of increasing operating space
Medway - Thamesport	Issues to be confirmed	Issues to be confirmed
Newhaven	Manage local travel issues more effectively – will assist in smooth running of port and also facilitate future planning applications	Attract funding for investment
Plymouth	Issues to be confirmed	Issues to be confirmed
Poole	Congestion at Salisbury (A36), and on approach via A350	
Portsmouth	Try and ensure greater spacing of boat arrival times to reduce peak traffic flows	.
Ramsgate		Congestion on A299; lack of land; look at ways of developing whilst preserving the local Conservation Area
Shoreham		Look at alternative ways of increasing operating space
Southampton	Congestion on A33/A3025; congestion at Salisbury (A36)	
Teignmouth	Congestion at Salisbury (A36); look at alternative ways of increasing operating space; increased dialogue with local authority to find compromise on planning issues.	
Weymouth		look at alternative ways of increasing operating space; improved dialogue with local authority to find compromise on planning issues

France investment proposals

6.3.5 The French investment priorities are detailed in Table 6.2.

Table 6.2: France investment priorities

Port	High Priority	Medium Priority
Boulogne	Introduce new shipping lines to reduce current reliance on existing routes	Implement a new crane & develop new warehouse in 1 year
Brest	Integration of the rail network "Combiwest" . Develop a private port railway company	
Caen	Continued investment in technology. 2011-2012: Expansion of ferry terminal: 4.2 ha land with 280 spaces for lorries and unaccompanied trailers (4 m wide and 13.50 m long), 7 new lines of boarding. End of 2011: Development of shuttle regular shipping specialized container traffic between Le Havre and Caen.	
Calais	2011: implementation of an intermodal yard and increased car storage capacity	2017: implementation of Calais 2015 (work starting in 2015)
Cherbourg	Port has created an area of 8 ha for storage and handling of bulk cargo. Southern expansion of 6 ha available. New area for scrap available (2,5 ha). Projects for ocean windmills and hydroturbines – 20 to 25 ha in a first step.	
Dieppe	The hosting of major offshore wind project (140 turbines) for a service station in accordance with 6 boats easement. The development of specific traffic in the hinterland.	The hosting of major offshore wind project (140 turbines) for a service station in accordance with 6 boats easement. The development of specific traffic in the hinterland.
Dunkerque	Development of land transport (2009-2013)	
Fécamp	Port authority recently developed a strategic plan for investment up to 2020/2030. Information on investment priorities however unavailable.	

Port	High Priority	Medium Priority
Granville	-	-
Le Havre	-	-
Le Tréport	Open up the port by improving road links	
Roscoff	Integration of the rail network "Combiwest" . Creation of additional 100 meters of quay length	
Rouen	-	-
Saint-Brieuc	New deepwater port and terminal from 2015	
Saint-Malo	Restructuring of circulation areas and working areas and repositioning of ferry terminal. Integration of the rail network "Combiwest" . Develop a private port railway company. Introduce new railway siding .	

7 Summary of findings

7.1 Conclusions

Freight demand

7.1.2 The Channel Arc Manche ports of Southampton, Medway, Le Havre, Rouen, Dunkerque and Calais currently handle the largest volumes of trade, with passenger travel dominated by the ports of Dover and Calais which offer time savings due to the short distances.

7.1.3 The importance of niche ports has been highlighted, and although total tonnage volumes are less, they are usually closely linked to local industry and thus their efficient operation is essential.

7.1.4 Two growth scenarios were developed for UK ports, the first examining growth on a port by port basis and suggesting that dry bulk would increase in importance in 2020 and 2030. This suggested that several smaller ports such as Fowey, Littlehampton, Newhaven, Poole, Ramsgate and Newhaven would experience substantial growth due to their reliance on this cargo. The same methodology also suggested a continued decline in passenger numbers at all UK passenger ports included within the study.

7.1.5 A second, more optimistic growth scenario showed growth at all UK ports by 2030, although some are predicted to experience a short term decline up to 2020.

7.1.6 Port Master Plan documents generally predicted growth significantly higher than that in the economic forecasts.

7.1.7 The French analysis predicted large increases in container trade at Dunkerque and Le Havre, and high levels of growth at Le Tréport, Dieppe and Boulogne. Passenger growth was also predicted to increase steadily at most French passenger ports.

7.1.8 Estimates of future growth against port capacity seemed to indicate no capacity shortages at UK ports, although the data was highly subjective. French data was not available. However, from the information collected it is suggested that some of the hinterland road and rail constraints need to be improved if the movement of larger freight volumes is to be assimilated.

7.1.9 The importance of this will increase as just-in-time delivery methods are favoured, and as larger demands are placed on the import and export of fresh produce.

7.1.10 To achieve this, various road hotspots have been identified that need addressing within the UK. Improvements at Dover (A2, A20) and Southampton (A33, A36, A3025) should take priority due to the strategic importance of this ports, with the A36 having the added benefit of improving access to all ports in the south west.

7.1.11 In France several key issues are identified focussing on the rail network, and it is encouraging to see that investment has already been secured for many improvements. Additional improvements are planned at the majority of ports.

Rail freight

7.1.12 The analysis of UK rail freight has revealed that existing rail freight activity at ports within the study area is heavily concentrated at just a few locations. Where use is made of the

British rail network, deep sea container traffic at Southampton is currently dominant, and the Channel Tunnel and Thamesport also generate considerable traffic flows.

7.1.13 There is also a large flow of shuttle traffic through the Channel Tunnel, but this is self-contained on the Eurotunnel infrastructure. A number of other ports are active at handling dedicated commodities by rail, notably aggregates at the Isle of Grain terminals and china clay at Fowey. A number of other ports have extant rail connections but these are not currently in use.

7.1.14 In combination, network Rail's Route Utilisation Strategy process and its specific Strategic Freight Network actions appear to be dealing with most of the network capacity and capability issues foreseen in the period to 2020. While very considerable growth in rail freight activity is forecast by 2030/31, the processes in place are providing a well-structured means by which future constraints can be identified and potential abatement measures evaluated in advance of the problems manifesting themselves, and the continuation of such an approach will be beneficial. In particular, the gauge enhancement programme for routes serving Southampton and the safeguarding of a large number of freight paths between the Channel Tunnel and London provide the infrastructure capabilities for considerable rail freight volume growth serving these two major traffic generators. With regard to Channel Tunnel services, the non-infrastructure-related issues are currently a more significant constraint on the volume of rail freight activity, so future traffic levels are dependent upon the extent to which these constraints can be overcome.

7.1.15 From this evidence it seems likely that the overwhelming majority of rail freight activity serving ports in the study area will continue to be along the coastline between Southampton and the Medway group of ports. One of the main uncertainties at present is the extent to which additional ports such as Portsmouth or Sheerness may be able to generate rail-borne volumes in the medium- to long-term.

7.1.16 Studies have also shown that Southampton in particular could convey larger rail volumes of deep sea containers following committed gauge enhancement schemes. In contrast, future development at Thamesport is likely to be restricted by its limited loading gauge.

7.1.17 In France, the majority of ports are closely linked to national rail infrastructure, although there has been a recent decline and volumes handled have fallen.

7.1.18 The ports examined however are developing in line with government policy to re-invigorate the French railway network. As such a lot of improvement plans were suggested and it is likely that the railways will play an increasingly prominent future role.

7.1.19 One key recommendation is for increased co-operation between UK and French ports so that they work together in achieving common goals. This could be promoted by cross channel associations aiming to bring port authorities together. French and UK ports are unlikely to be in competition with each other.

7.1.20 Joint investment programs should also be considered to benefit both UK and French ports. If an established trade route exists between two ports, and only one makes improvements, it may be difficult for overall trade volumes to increase. However, if infrastructure improvements are made at both the UK and French end overall freight movement can be improved.

7.2 Next steps

7.2.1 Future work should consider the following points:

- Further cooperation of stakeholders and ports to create a complete final dataset from which conclusions can be drawn.

- The focus should remain on freight rather than passengers. This is due to the greater economic importance of freight and diminishing passenger numbers.
- A methodology should be developed to standardise the different methods ports use when describing vehicle movements.
- The focus of the study could be refined to include only cross channel trading routes.
- Measures to increase cooperation between UK and French ports, maximising and optimising cross channel operations, should be developed.

Appendix A – Port Master Plan links and Selected French Statistics

Master Plan document links

Dover – Planning for the next generation, Dover Harbour Board, 2006:

http://www.doverport.co.uk/_assets/client/images/collateral/first%20round%20consultation.pdf

Plymouth – Port of Plymouth Evidence Base Study, Atkins, 2010**:**

http://www.plymouth.gov.uk/port_of_plymouth_final_report_volume1.pdf

Shoreham - Shoreham Port Masterplan, Shoreham Port, 2010:

http://www.shoreham-port.co.uk/Masterplan

Southampton – ABP Port of Southampton Master Plan 2009-2030:

http://www.hythe-hants.org.uk/PDF_Files/ABP_Master_Plan_2009.pdf

Appendix B – Ports Questionnaire

Appendix C – Haulers Questionnaire

Appendix D – RHA Pinch Points

Appendix E – Additional Port Data Sources

Appendix F – Summary NW French Rail Improvements