



Llywodraeth Cynulliad Cymru
Welsh Assembly Government

One Wales:
Connecting the nation

The Wales Freight Strategy

May 2008



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Foreword

Freight transport is essential for many aspects of daily life, and it contributes around £2.5 billion a year to the economy of Wales. A first class system of transport is a vital element in securing economic prosperity, but also for ensuring social justice and sustainability. I recognise that freight transport activities can have a profound effect on our environment, communities and even our health. Such activities are also increasingly judged by their climate change impact.

This freight strategy has a close correlation with the Welsh Assembly Government's overall Transport Strategy - Connecting the Nation. It places a high priority on meeting our "One Wales" objective of transferring freight from road to rail - ensuring that freight transport plays a major role in a sustainable economy. This strategy sets out high level aims and policies for freight transport and identifies a series of steps towards their delivery. It recognises that the freight industry is commercially driven and that this must be taken into account in framing the role of the public sector.

I thank all who have helped develop this blueprint for freight transport, a document that will be of practical guidance in producing a National Transport Plan for Wales and the detailed plans of our Regional Consortia. I am particularly grateful for the work of the Wales Freight Group in driving the strategy forward, an excellent example of how this Government works in partnership with stakeholders to guide our future plans.

The Welsh Assembly Government is pledged to use its growing powers to develop the best solutions to meet our country's needs. As freight movement is increasingly globalised, I am determined that we in Wales should demonstrate that our own policies are the best possible to help reduce carbon emissions whilst ensuring the competitiveness of our freight and logistics industries. I look forward to continuing to work with all our partners to ensure that our nation's ambitions to be both successful and sustainable are realised.

Ieuan Wyn Jones
Deputy First Minister
and
Minister for the Economy and Transport





Executive Summary

The Wales Freight Strategy

The Welsh Assembly Government is committed to improving the lives of people in Wales and making our nation a better place in which to live and work. The ambitious and progressive 'One Wales' programme is working to achieve a nation with access for all, where travelling between communities in different parts of Wales is both easy and sustainable, and which will support the growth of the economy through transport of both people and goods. A good passenger and freight transport system is central to a vibrant economy and social justice, through equality of access and greater mobility for people and goods. 'One Wales' itself reflects this through a number of commitments, including a clear aim to transfer freight from road to rail. Moreover, transport must play its part to safeguard the environment and improve the quality of life for everyone.

'One Wales: Connecting the nation' has a key role to play in delivering 'One Wales', as the Wales Transport Strategy. Transport is vital for a wide range of economic, social and environmental outcomes; within this, freight transport plays a significant part in shaping our daily lives.

The 'Wales Freight Strategy' sets out high-level aims and policies for freight transport, and identifies a series of 'steps' towards their delivery. A high priority is placed on freight transport playing its part in ensuring a sustainable environment. Many of the 49 steps set out in the strategy contain elements that are aimed at reducing the overall environmental impact of freight transport, through modal shift or efficiency measures, in particular the contribution of freight transport to greenhouse gas emissions.

Chapter 1 Freight in Wales

Chapter 2 Freight in Context

Chapter 3 Strategic Issues

Chapters 4-8 The Freight Transport Modes

Chapter 9 Actions and Partnerships

- How transport, and freight transport in particular, is an integral part of the Welsh Assembly Government's strategies as outlined in 'One Wales'
- How the Wales Freight Strategy supports the aims that underpin 'Connecting the nation', and the outline of the Wales Freight Strategy itself
- How freight transport contributes to wider social, economic and environmental outcomes
- Issues that affect the freight transport industry in Wales, now and into the future
- How the modes can best work together in the most efficient and effective way
- The features and limitations of each mode, and making the best use of their strengths
- 'Steps Towards Delivery'
- Priorities and key actions for delivering the Wales Freight Strategy and its role in the 'One Wales' agenda
- The delivery process
- Partnerships and monitoring

Freight in Wales

Transport is essential for many aspects of daily life. It provides opportunities for people to gain access to jobs, leisure and social activities as well as vital services such as education and health. Crucially for economic prosperity, it connects businesses with customers and suppliers, including the movement of people and goods. Every home, business and other organisation requires freight transport services of one form or another simply to function.

Freight transport is an indispensable element of the economy of Wales, and indeed in the wider trade of goods across the UK, Europe and the rest of the world. In fact, the movement of freight is more fundamental to the way of life that we take for granted than many realise. For instance, all the food that we eat and consumer items that we use are sourced as raw materials, manufactured and/or packaged and taken to retail sites. Freight transport is an integral part of the processes involved. Less obviously perhaps, waste needs to be collected and taken for disposal or recycling, hospitals could not function without reliable supplies of drugs, and schools need stationery. Postal and parcel services are also an important and increasingly valuable form of freight transport.

Freight transport reflects both the overall demand for goods and also, more importantly, the demand for goods to be moved. As such, freight transport makes an important contribution to a vibrant economy. It is estimated that people employed in logistics activities account for up to 7% of employment in Wales (around 61,000 people are employed in logistics companies, with a further 30,000 in logistics roles for other organisations) and there are some 7,400 logistics workplaces in 2,400

logistics companies. Logistics contributes approximately £2.5 billion per annum to the Welsh economy.¹

However, freight transport activities can also have profound effects on our environment, communities, and even our health.

Developing the Wales Freight Strategy

The Welsh Assembly Government has statutory responsibilities for transport and is required to publish a 'Wales Transport Strategy' covering the movement of people and freight. Development of the Wales Freight Strategy is also in support of this duty.

A number of areas within the UK (including Scotland and several regions of England) have developed, or are developing, freight strategies in conjunction with the freight transport industry and other stakeholders. Industry bodies such as the Freight Transport Association have been instrumental in these processes along with other stakeholders. Recognising this increasing desire of the freight transport industry to work with its stakeholders, including customers, government at all levels and others, the Welsh Assembly Government has been working in partnership with the Regional Transport Consortia and other stakeholders to develop the Wales Freight Strategy.

In particular, the Welsh Assembly Government convened the Wales Freight Group to provide both a forum for discussion of freight transport issues and to assist in preparing the Wales Freight Strategy.

The Wales Freight Group

The main function of the Wales Freight Group to date has been to feed into production of the Wales Freight Strategy,

¹ Sources: 'Skills for Logistics' - UK and Welsh Logistics Sector profiles (2007), LSA Research Report (2005) and direct submission to WFS



and the strategy is the culmination of work carried out by the Welsh Assembly Government and the Wales Freight Group.

As well as officers of the Welsh Assembly Government, the Wales Freight Group comprises providers and users of freight services across all modes of transport (road, rail, ports & shipping, airports and pipeline) and transport planners. It includes key stakeholders such as the Regional Transport Consortia in Wales, Network Rail, Freight Transport Association, Road Haulage Association, Rail Freight Group, port and shipping operators, representatives from Cardiff-Wales airport and Skills for Logistics (the Sector Skills Council for the freight industry). Throughout its development, Group members have provided significant input and oversight to the content of the strategy.

The Wales Freight Group will be a significant element in taking the strategy forward. Membership of the Group will also be expanded to include other interests. In particular, to enhance the ability of the Group to address environmental issues, it is anticipated that the Sustainable Development Commission Wales and Cynnal Cymru (the Sustainable Development Forum for Wales) will be invited to send representatives to participate in the Group.

Consultation

The Wales Freight Strategy consultation document represented a key stage in developing the strategy, in establishing the views of those with an interest in freight transport in Wales. The Wales Freight Group endorsed the consultation document and encouraged the participation of interested stakeholders. Responses were received from a cross-section of people and organisations.

The content of responses was broadly positive. The overall message was that the strategy set out in the consultation document covered the issues facing the freight transport industry and other stakeholders in Wales well, and included a substantially appropriate set of 'steps' to consider and deal with these. We have published (electronically) a separate report on the consultation process, including details of the responses. Some of the key messages from the consultation which have been incorporated into the Wales Freight Strategy are:

You told us:

You would welcome prioritisation of the steps towards delivery

We identified a series of strategic priorities to focus work toward the long-term outcomes of 'Connecting the nation' and support the delivery of 'One Wales'. These have been used to help prioritise the 'steps towards delivery' in the Wales Freight Strategy

You told us:

Delivering the strategy should give freight transport the enhanced profile it needs and leadership by the Welsh Assembly Government in this is important

As part of the 'Connecting the nation', the Wales Freight Strategy has a key role to play in delivering the Welsh Assembly Government's overall 'One Wales' programme. As well as our specific powers related to freight transport, our role in delivering the strategy will be reinforced with active participation in appropriate stakeholder partnerships and through the Wales Freight Group. The Assembly Government is also seeking to review its powers and ability to play a more active role in setting the agenda for ports and rail freight in Wales

You told us:

The environmental impact of freight transport should be given more emphasis, especially in considering air freight

The Strategic Environmental Assessment (SEA) has also identified some issues, and some of the 'steps towards delivery' have been reviewed and altered accordingly to take account of these

Public Sector Role in Freight Transport

It is important to take into account the substantially commercial nature of the freight transport industry. In general terms this limits the potential role of the Welsh Assembly Government and its local and regional government partners when compared to other areas of transport policy and practice; especially when comparing with passenger transport. In recognising this, the strategy identifies that the role of the public sector will encompass policies and actions that both seek to influence freight transport decisions and react to the commercially-driven market situation in terms of current practice and anticipated changes.

Transport Policy in Wales

The Transport (Wales) Act 2006 confers a general duty on Welsh Assembly Government to promote and encourage integrated transport in Wales, and requires it to produce a national strategy which considers the passenger and freight transport needs of Wales as a whole – this is manifest in 'One Wales: Connecting the nation', the Wales Transport Strategy. The Wales Freight Strategy supports 'Connecting the nation', considering freight transport issues in more detail.

Transport Policy and the Environment

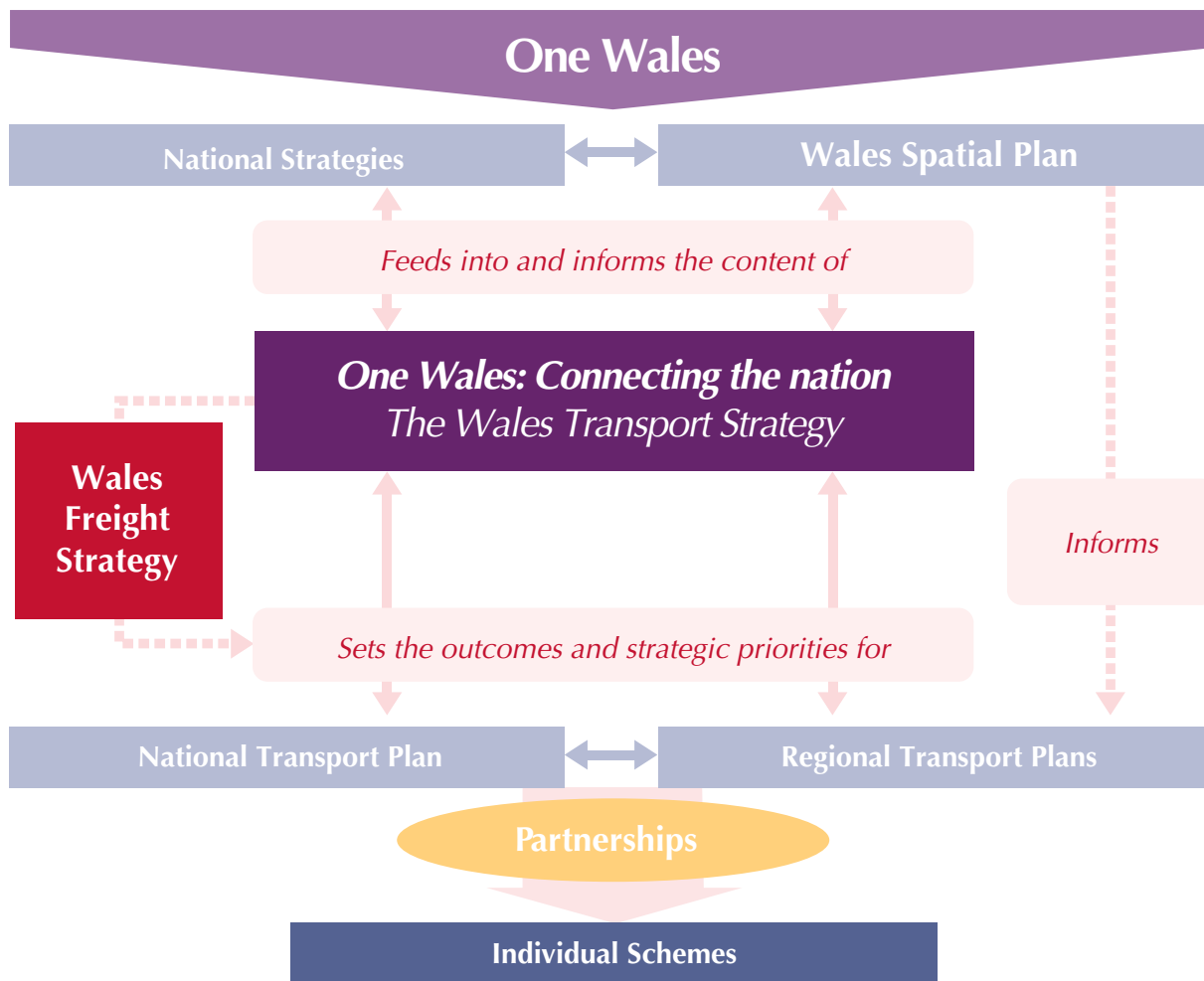
Living within environmental limits is not only about tackling the growing problem of climate change. Concerns about impacts from transport and other interventions on environmental resources have led to increased legislation, policy and guidance requirements designed to protect, conserve and enhance these resources. The Welsh Assembly Government is committed to meeting the relevant legislative, policy and guidance requirements and encourages other transport providers to follow suit.

Strategic Environmental Assessment (SEA)

The Strategic Environmental Assessment Regulations for Wales require an assessment of the likely significant effects on the environment of plans and programmes and their reasonable alternatives. A Strategic Environmental Assessment (SEA) has been undertaken to assess the environmental implications of the Wales Freight Strategy.

Habitats Regulation Assessment (HRA)

The outcome of HRA screening for the 'Connecting the nation' was that Appropriate Assessment is not required, as it is a high-level policy document with no implications for specific sites. The Wales Freight Strategy is of a similarly high-level nature, and as such also does not require Appropriate Assessment. The Wales Freight Strategy can only be implemented through other strategies and specific plans and projects and, because of its high level nature, will not constrain or influence those other strategies, plans or projects to an extent capable of increasing their likelihood of adversely affecting any Natura 2000 site.



The Transport Planning Process in Wales

Freight in the Wales Transport Strategy

‘Connecting the nation’, the Wales Transport Strategy, is an essential element of the Welsh Assembly Government’s corporate agenda. ‘Connecting the nation’ seeks to provide a stable, long-term framework, and deals with all modes of transport, as well as implications for other policy areas. The strategy specifies the outcomes and strategic priorities that link the Wales Spatial Plan, the Welsh Assembly Government’s wider strategies and development of plans at the local level. Its objectives will be delivered by integrating key proposals with broader national policy areas, as well as through the National Transport Plan and Regional Transport Plans. The Wales Freight Strategy is nested within the ‘Connecting the nation’ and is consistent with it.

Key Aspects of the Wales Freight Strategy

The Wales Freight Strategy is designed to:

- Assist Regional Transport Consortia in the development of Regional Transport Plans;
- Identify and promote factors supporting sustainable distribution systems;
- Support Welsh industry and commerce with a reliable and cost efficient network for raw materials, and manufactured and consumer goods;
- Anticipate and respond to fundamental changes in the supply-chain and markets;
- Identify weaknesses and constraints in the existing freight network which may impact on the Welsh economy; and
- Integrate and maximise use of existing freight infrastructure, using all transport modes to the benefit of the environment and economy.

Some of the main imperatives behind development of the Wales Freight Strategy include:

- New transport powers for the Welsh Assembly Government;
- The need for environmentally less damaging transport;
- A shift in production to the Far East and Eastern Europe bringing new challenges to the economy of Wales/UK and its freight network;
- Fundamental changes in domestic distribution of goods;
- The emergence of new markets and opportunities; and
- Review of Port Policy by DfT.

Timing of the Wales Freight Strategy is thus apposite in relation to challenges, changes and initiatives in the freight industry in Wales and the wider world.

Outline Freight Strategy

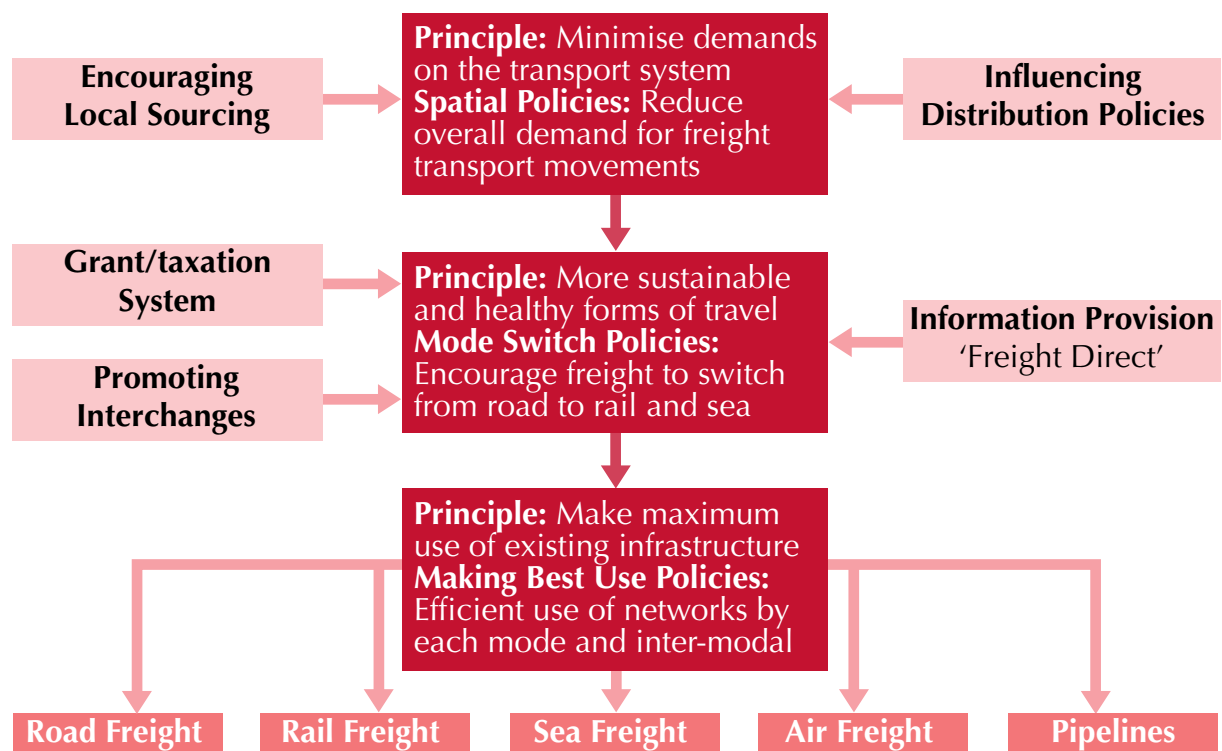
The demand and need for freight transport, along with the roles of individual modes and potential interventions, is considered at three

levels in the strategy. These levels reflect the substantially commercial decision-making process that leads to freight transport movements taking place. This decision-making 'hierarchy' forms a key element of the Wales Freight Strategy.

There is very close synergy between the hierarchy of the Wales Freight Strategy and three of the key guiding principles of 'Connecting the nation', the Wales Transport Strategy.

Principle: "Minimise the demands on the transport system"

Spatial Policies – Firstly, measures try to influence the overall demand for freight transport, through for example spatial planning policies, or working with industry and commerce to reduce empty running and promote local sourcing. This reflects that decisions are made by procurers of goods/ services, as well as suppliers, and the various economic and geographic situations will then generate freight movements.



Hierarchy of Freight Measures



Principle: “Promote more sustainable and healthy forms of travel”

Mode Switch Policies – Secondly, having determined that freight needs to be transported from place-to-place, the second level of the hierarchy encourages efforts to be made to influence mode choice. This is specifically aimed at encouraging use of the most environmentally sustainable mode or combination of modes over the journey required. It particular targets use of modes such as rail and water for as much as is practical for any journey.

Principle: “Make maximum use of existing infrastructure”

Making Best Use Policies – Thirdly, this level in the hierarchy promotes measures to make the best use of each network and mode. This is specifically to promote efficiency and minimise any adverse impacts that arise from the mode concerned.

The remainder of the strategy follows freight through the hierarchy, considering first the strategic issues that drive the demand for freight, as well as some key mode choice issues, then moving on to seek to address elements for each of the main freight transport modes.

Policies and Actions

In developing the Wales Freight Strategy, a balance has been struck between high-level statements and action plans. The Wales Freight Strategy is part of the process of taking forward the ‘Connecting the nation’, and as such focuses on high-level principles. These are not precisely determined in the strategy itself, but will be developed into specific proposals and action plans by subsequent processes. For example, it is intended that this strategy will suggest ideas for the development of freight-related

policies and proposals in Regional Transport Plans, to be prepared by the four Regional Transport Consortia in Wales.

As such, the strategy presents a series of ‘steps towards delivery’ at a number of stages in the document. These are set out to highlight ideas that the strategy is promoting for each of the main freight transport modes, as well as in cross-cutting inter- and multi-modal issues.

Strategic Issues

The Demand for Freight

Around 100 million tonnes of freight (‘goods lifted’) are transported in Wales per annum, with the amount of freight transport that takes place (‘goods moved’) at around 13 billion tonne kilometres. This represents some 5% of all freight transport in UK. The tonnage of freight lifted has not increased significantly over the last 30 years, though the associated tonne-kilometres have more than doubled.

This is largely accounted for by significant increases in the use of road freight, and in particular in making use of road freight’s inherent flexibility to adapt to changes in business practice and shape the production and distribution process. The role of freight has therefore shifted from being simply the means by which materials are provided to manufacturers and finished goods shipped to end users, to an intrinsic part of the production process. This applies equally to the ‘production process’ that delivers food to supermarket shelves as production of a consumer product. Food distribution, in particular, has manifestly changed with the rise in prominence of supermarket retailers. Road transport thus dominates the movement of freight in UK, accounting for over 64% of goods moved and upwards of 83% of goods lifted. The apparent disparity of these figures is accounted for by the

average haul length of goods by road being (generally) shorter than other modes, and a tendency for 'heavier' goods (such as coal and aggregates) to travel longer distances by water or rail.

Wales' Freight Networks

Transport networks in Wales have been shaped by geography, as well as reflecting the ebb and flow of economic development. The main road and rail routes run close and parallel to the north and south coasts, and inland they generally follow the river valleys. In rural areas of Mid and North Wales, networks are more limited, and roads typically offer the only freight transport option.

Transport networks within Wales must not be considered in isolation, as both the road and rail networks are intrinsically linked to those in England, in border areas in particular. Significant road and rail traffic moves between England and Wales, including movements originating in Wales or England, as well as elsewhere. There are also international road freight movements between Ireland and the UK and the rest of Europe, much of which passes through Wales in transit (most significantly through North Wales to/from Holyhead). The relationship between the networks of England and Wales is thus both a matter of historical development as well as modern day usage, and consideration of rail network improvements in Wales needs to take into account proposals in England.

The Freight Industry

There is need to understand the impact of freight traffic on a working and healthy economy. The profile of the freight transport industry is low. For instance, the end customer for any product will seldom know how much of the price they pay for the product is made up of transport considerations, or what modes of freight transport are used. Understanding

how the mode of freight transport is chosen is also important. Notwithstanding that in some places there will be restrictions on the availability of alternatives, many freight transport decisions are to simply 'do what we did last time'.

As many companies have sought to reduce their storage and inventory levels, as well as transport costs, there has been a trend towards an 'end-to-end' approach, using logistics companies to manage an inventory from component elements to final delivery. This has led to distribution networks being developed on the basis of an organisation, rather than a commodity. Reliability and robustness throughout the whole supply chain is considered vital, with the principal of goods being delivered 'just-in-time' being widespread. Within a distribution network, modal choice becomes a multi-dimensional issue, but the need to consistently supply a number of outlets can mean road haulage, typically seen as the most flexible option, tends to dominate.

Skills in Freight Transport

Many freight infrastructure and service operators in Wales have indicated they experience problems recruiting and retaining suitably-skilled workers. Recent research has revealed that a major reason for this is the poor image projected by the industry. To help address these problems, 'Skills for Logistics' has been given the remit to represent the skills needs of freight logistics industries and companies involved in the moving, handling or storing of goods – covering freight transport by rail, road, air, sea and inland waterway.

International Trade

Creating a more robust and reliable logistics network (both in terms of the physical linkages and information flows required) will help to increase the competitiveness of the Welsh economy. For instance, changes



within the EU mean that existing peripheral nations such as Wales will seek to balance lower labour costs in other nations with efficient freight operations, making an effective and efficient international freight network even more important.

Significantly, changes to supply chain globalisation and a general shift of production to China and elsewhere in the Far East is driving a huge increase in containerisation, and UK traffic is forecast to almost double over the next 25 years or so. The leading global container shipping lines are focusing their future capacity on super post-panamax vessels with nominal capacity of over 13,000 TEU. In addition to the fact that there are very few container ports in the UK, or indeed Northern Europe, which can handle these vessels, the existing pre-eminent distribution model of road hauling containers from the main deep-sea container ports for the UK of Southampton and Felixstowe into the English Midlands, will put great additional pressure on an already congested road network. Rail has limited capacity and capability to absorb the additional volumes, although gauge improvements for high-cube maritime containers would assist.

A relatively unconstrained option is to distribute containers from deep-sea hub ports on smaller feeder vessels to regional ports, using land transport to complete the journey over a shorter distance. This could encourage regional distribution centres near ports, effectively inverting the existing distribution model and replacing long-haul land transport with shipping. Welsh ports generally have good surface connections and possess the capacity to accommodate a substantial increase in coastal traffic.

Corporate Social Responsibility

The concept of corporate social responsibility runs as a thread through this strategy. For the freight transport industry

itself, this includes the effects on its own people as well as the wider society and environment, as well as considering procurement decisions made by the users of freight. Increasing emphasis on corporate social responsibility should encourage organisations to question their freight decisions (amongst others) as well as those of suppliers and contractors.

Freight Transport Modes

Each of the freight transport modes has a role to play in the future of freight transport in Wales. The amount to which they will do so will depend on a combination of commercial requirements and local circumstances, as well as features and limitations of each mode. The Wales Freight Strategy seeks to encourage use of the most environmentally friendly modes, particularly from road to rail, as well as integration between modes and links to sea ports, essential to support an increase in short sea shipping.

Road Freight

Around 63 million tonnes of freight were transported by road between places within Wales in 2006, with a further 57 million tonnes moving between Wales and other parts of the UK and some 1.2 million tonnes to/from places outside the UK. Road freight originating in Wales generated over 7 billion tonne kilometres of freight. Other important movements include transit of freight to/from Ireland, though this is a small amount compared to overall figures, with around 2 million tonnes in UK and Irish registered trucks using ferries at the Welsh ports. The amount of road freight (tonnes lifted) to and from Wales has increased over the period 1990-2006, with imports from elsewhere in the UK rising by over 30% though doubling from outside the UK. Similarly, exports to the rest of the UK have risen by 7%, and internationally by 43%. However, the

amount of road freight wholly within Wales has declined by around 9% over the same period.

‘Crude & manufactured minerals and building materials’ is the single largest category of goods recorded, accounting for almost 40% of all goods lifted in Wales. These are indicative of ‘heavier’ commodities that tend to travel shorter distances, and as such this category only accounts for 13% of goods imported into Wales. The largest single category of road-based freight imported into Wales is ‘food, drink and tobacco’, which is most representative of road freight transport that is inherent in supermarket and other retailers’ distribution systems.

There is no formally designated lorry route network within Wales, other than trunk roads and the Trans-European Networks (TEN-T) designated by the EU.

Rail Freight

The UK rail freight industry has grown significantly in the 10+ years since privatisation, increasing its market share and largely reversing the long-term decline in demand for rail freight observed over the preceding 40 years or more. Rail freight traffic is forecast to continue to grow, with the biggest increase in the volume of maritime containers, which is predicted to double in a ten year period. The vast majority of rail freight services in Wales run without direct subsidy.

Most rail freight services in Wales run in South Wales, with some in North Wales but limited operations in Mid Wales. The majority of rail freight movements are between places in Wales and England/Scotland. Over 8 million tonnes of freight uses the South Wales main line between Newport and Swansea; less than 1 million tonnes is carried by the North Wales

Coast line. The Marches line carries over 2 million tonnes per annum. There are commensurately fewer movements in North Wales, with regular services approximately 10% of the number in South Wales. The main UK rail freight operators, EWS and Freightliner, are active in Wales, and some more limited traffic is carried by other operators. The largest rail freight operator, EWS, runs around 500 services per week in South Wales.

Commodities carried by rail in South Wales include steel, coal, automotive traffic, aggregates, oil and petroleum products, scrap metal and containers. Steel-related rail freight represents around half of all movements. North Wales sees rail transport of aluminium products, steel, nuclear waste, stone and aggregates, coal and timber. Rail freight services are regularly scheduled, but there can be variations in demand; for example, as steel prices globally increase, there can be increased demand for scrap steel.

There are some network constraints, including potential capacity pinch points, on the rail network in Wales.

Ports and Shipping

The UK port sector is largely privatised and deregulated and mainly in private ownership, and in Wales private ports predominate, though port and harbour authorities are established by Act of Parliament and have statutory powers and responsibilities. Milford Haven is a notable exception as a Trust port. As well as being nodes for transfer of goods from land to water, ports also support a range of related industries and functions, ranging from full scale manufacturing and processing to storage and consolidation of cargo in transit. In Wales a few large ports are almost single-function ports whilst others cover a wide array of traffic types.



Most international freight arrives or leaves the UK by sea and Wales' share of UK port traffic was just over 10% at 56.7 million tonnes (in 2006). Although there are 15 commercial ports in Wales, major ports dominate, with three ports (Milford Haven, Port Talbot and Holyhead) carrying over 80% of all Welsh throughput.

Milford Haven is a deepwater harbour dominated by gas, crude oil & oil products, which make up 96% of the traffic at the port. Port Talbot is the other main deepwater facility in Wales, and is focused on dry bulk cargoes. There are other important ports in Wales, notably Swansea, Barry, Cardiff and Newport in South Wales, with Mostyn and Penrhyn in North Wales. Between them, these ports handle liquid fuels and chemicals, dry bulks such as coal, aggregates and fertilisers, timber, steel, other general cargo and containers. The key ferry routes to/from Wales are a series of important links to the Irish Republic, principally the links between Holyhead and Dublin/Dun Laoghaire, and Pembroke Dock/Fishguard and Rosslare.

Air Freight

Total UK air freight was some 2.3 million tonnes in 2006. While these figures only represent around 1% of UK exports in terms of tonnage lifted, it is estimated that air freight could account for as much as 25% of exports by value. This traffic overwhelmingly uses airports outside Wales, including goods to/from Wales, with commodities using road to access airports elsewhere in the UK. Direct Welsh air freight is largely confined to Cardiff International, which transported some 2,212 tonnes in 2006.

The most significant air freight flow in Wales relates to the Airbus wing factory at Broughton near Wrexham, making use of aircraft to transport wing parts for Airbus aircraft for further assembly at other facilities in Europe. However, this is a closed operation

and Broughton a private airfield. Operations are integrated into the overall production process of Airbus aircraft, using bespoke aircraft specifically designed to carry aircraft parts, particularly bulky sections.

Pipelines

The use of pipelines to transport goods around the UK has a long history, and is particularly related to the transport of oil and oil-based products. Pipelines are also an intrinsic part of the networks for water delivery and sewage disposal and treatment, as well as local delivery of gas to households. These elements of pipeline use are not covered by the Wales Freight Strategy.

In the UK as a whole, pipeline traffic has increased by almost 80% in the last 20 years and is around 7% of total goods lifted nationally by all modes. Products transported by pipeline include natural gas, liquid gas, ethylene and oil based commodities including fuels and lubricants.

There are a number of key pipelines across Wales, in addition to local delivery pipes. The most significant lines transport products from Milford Haven, linking into the wider UK network pipeline networks in the Midlands. A recently constructed new line has the potential to supply some 25% of the UK's gas needs in the future.

Actions and Partnerships

Delivering the Strategy

The need to work together effectively is a constant theme in the delivery process of the Wales Freight Strategy, and the different stages of delivery will result in the identification of schemes that best meet the outcomes of the strategy and are acceptable to the public. There is also considerable enthusiasm to progress the Wales Freight

Strategy. Much can be achieved by working together, sharing knowledge and looking for opportunities to add value. We need wider stakeholder and community involvement in the development of more detailed plans and schemes to ensure that proposals are acceptable in the locality they are being implemented, as well as consistent with national and local policy.

The Regional Transport Consortia are tasked with producing Regional Transport Plans (RTPs), which will provide a regional policy framework for transport provision. RTPs will identify proposals aimed at achieving the outcomes of 'Connecting the nation', including elements taking forward 'steps towards delivery' of the Wales Freight Strategy. The Regional Transport Plans will identify more local issues and problems.

Partnership working is therefore vital if knowledge and capacity are to be used to best effect, and opportunities realised to provide best value in taking the steps towards delivering the Wales Freight Strategy. Members of the Wales Freight Group have key roles to play in taking forward the Wales Freight Strategy.

There is a need for entrepreneurial flair in the freight transport sector, to drive forward the innovative measures and solutions required.

Potential Partners

It is anticipated that the Wales Freight Strategy will be best taken forward through a series of partnerships between the Welsh Assembly Government, the Regional Transport Consortia, freight transport industry, organisations that can address environmental concerns and other organisations and authorities. Freight Quality

Partnerships could be part of this process, and developed on an area-by-area or topic basis. These may be too general to deal with some of the more specific and technical 'steps towards delivery', and bespoke 'task and finish' groups or partnerships could be required.

Priorities

The 'steps towards delivery' set out in the strategy have been afforded priorities of 'Short', 'Medium' and 'Long' term. These are broadly defined as:

- **Short term** – commence in the period to 2010, though many will include on-going initiatives that carry on beyond this initial period
- **Medium term** – this brings in the remaining 'steps towards delivery' that encompass strategic priorities set out as the first phase of implementing 'Connecting the nation'
- **Long term** – steps towards delivery that look further into the future

In addition, steps towards delivery that effectively form themes running throughout the life of the strategy and beyond are indicated as **on-going**.

Monitoring

The aims of the Wales Freight Strategy will be monitored as part of the Wales Transport Monitoring Strategy. This will set out a range of measures and indicators that relate to 'One Wales' and the other policies, plans and programmes of the Welsh Assembly Government, in particular the outcomes of 'Connecting the nation', and including environmental impact monitoring.



Summary Steps Towards Delivery

<i>Strategic Issues</i>		Priority
SI1	Promote the transport of freight in the most environmentally sustainable manner, in particular encourage to transfer to rail and water where practical	On-going
SI2	Take an integrated multi-modal approach to regional freight transport planning that achieves a sustainable balance between environmental and economic operational objectives	On-going
SI3	Review the current system of freight grants	Short
SI4	Review land-use policy to take into account opportunities for promoting and protect environmentally sustainable freight facilities (and feed into the Wales Spatial Plan and LDPs)	Medium
SI5	Develop inter-modal freight interchanges in Wales; road/rail and road/rail/sea	Medium
SI6	Create a balance between freight and passenger on rail to ensure freight is afforded appropriate priority	Long
SI7	Work with others to develop integrated freight policies for ports and airports	Long
SI8	Develop a greater understanding of the patterns of movement of goods and role of freight in Wales (including waste transport)	Short
SI9	Identify suitable data sources to be monitored and collation of statistics	Short
SI10	Understand the current and likely future role of distribution centres and freight transport in Wales, including those in England that serve Wales	Medium
SI11	Consider the potential future impacts of charging on the road network	Long
SI12	Encourage more sourcing and consumption of locally sourced produce	Medium
SI13	Develop and promote a 'Freight Direct' information service for Wales	Medium
SI14	Encourage appropriate stakeholder partnerships; such as the Wales Freight Group and Freight Quality Partnerships (FQPs) at a variety of different levels	Short
SI15	Consider the scale of ideas and solutions; comparatively small-scale rural projects could provide locally very significant benefits in rural areas	On-going
SI16	Implement the Sector Skills Agreement for Skills for Logistics	Short
SI17	Consider how freight transport and networks are affecting and will be affected by climate change	On-going
SI18	Consider seeking to expand the Welsh Assembly Government's powers relating to freight transport	Long

Road Freight

		Priority
Ro1	Improve the efficiency of road freight transport	Medium
Ro2	Use ITS and telematics to improve efficiency	Medium
Ro3	Reduce the environmental impact of road freight vehicles, in particular the effects of greenhouse gases emissions and pollutants	Long
Ro4	Identify a strategic lorry route network for Wales, and key links across borders	Short
Ro5	Develop localised lorry route maps	Medium
Ro6	Maintain consistent network (particularly in rural areas)	On-going
Ro7	Provide parking for road freight transport (locations, facilities required, pricing)	Long
Ro8	Consider specific parking for drivers' rest area	Medium
Ro9	Identify pilot freight consolidation centre and understand role of distribution centres in (and serving) Wales	Short

Rail Freight

		Priority
Ra1	Work with Network Rail/DfT to ensure that the needs of the freight industry in Wales are taken into account	On-going
Ra2	Increase the carrying capacity of the railway as cost effectively as possible, focusing on the passenger and freight links which make the biggest contribution	Medium
Ra3	Develop the Welsh Assembly Government's role in rail infrastructure use and development and consider how Network Rail can best respond to the rail freight needs of Wales	On-going
Ra4	Review the way that grants and subsidy schemes are implemented in Wales	Short
Ra5	Identify potential options for rail-road facilities	Short
Ra6	Ensure that land-use policies protect opportunities for promoting rail freight facilities, particularly potential road-rail interchanges	On-going
Ra7	Carry out scenario planning of rail proposals, identifying potential environmental benefits	On-going



Ports and Shipping

Priority

PS1	Promote use of inland waterways and coastal shipping where practicable	On-going
PS2	Promote Welsh ports and shipping overseas and assess the potential through associated international freight market intelligence	On-going
PS3	Promote added-value activities at ports, identifying environmental benefits	On-going
PS4	Identify port locations where new facilities could be developed, including potential multi-modal and port-based inter-modal sites	Short
PS5	Consider port-related rail freight path availability	Short
PS6	Review road routes to ports for freight (signage, limitations and standards)	Medium
PS7	Continue to monitor and support improvements to skills in port and logistics	On-going
PS8	Review the way that grants and subsidy schemes are implemented in Wales	Short
PS9	Work with the DfT to develop an active policy on the future of ports, in order to help ensure that future development takes place in a sustainable way	On-going
PS10	Review the sea freight market for Wales – related to SI8	Short

Air Freight

Priority

Ai1	Consider air freight in Wales in the context of need and efficiency, in particular overall CO ₂ emissions and alternatives to air freight	Short
Ai2	Consider airport surface access for air freight, including access to airports outside Wales	Short
Ai3	Review the air freight market for Wales – related to SI8	Short
Ai4	Consider the potential for multi-modal import/export facilities using air with other modes	Long

Pipeline

Priority

Pi1	Promote the potential role of pipelines among possible users	On-going
Pi2	Support expansion of the pipeline network where appropriate	On-going



Chapter 1: Freight in Wales

The Welsh Assembly Government is committed to improving the lives of people in Wales and making our nation a better place in which to live and work. The ambitious and progressive 'One Wales' programme is working to achieve a nation with access for all, where travelling between communities in different parts of Wales is both easy and sustainable, and which will support the growth of the economy through transport of both people and goods. A good passenger and freight transport system is central to a vibrant economy and social justice through equality of access and greater mobility for people and goods.

Moreover, transport must play its part to safeguard the environment and improve the quality of life for everyone. 'One Wales: Connecting the nation' has a key role to play in delivering the Welsh Assembly Government's strategic agenda, as transport is vital for a wide range of economic, social and environmental outcomes. Freight transport in turn plays a key role in shaping our daily lives. Within this framework, the 'Wales Freight Strategy' sets out high-level aims and policies for freight, and identifies a series of steps towards their delivery.



1.1 The Role of Freight



Transport is essential for many aspects of daily life. It provides opportunities for people to gain access to jobs, leisure and social activities as well as vital services such as education and health. Crucially for economic prosperity, it connects businesses with customers and suppliers, including the movement of people and goods. Every home, business and other organisation requires freight transport services of one form or another simply to function.

Freight transport is an indispensable element of the economy of Wales, and indeed in the wider trade of goods across the UK, Europe and the rest of the world. In fact, the movement of freight is more fundamental to the way of life that we take for granted than many realise. For instance, all the food that we eat and consumer items that we use are sourced as raw materials, manufactured and/or packaged and taken to retail sites, and freight transport is an integral part of the processes involved. Less obviously

perhaps, waste needs to be collected and taken for disposal or recycling, hospitals could not function without reliable supplies of drugs, and schools need stationery. Postal and parcel services are also an important and increasingly valuable form of freight transport.

However, freight transport activities can also have profound effects on our environment, communities, and even our health.

1.2 Developing the Wales Freight Strategy



A number of areas within the UK (including Scotland and several regions of England) have developed, or are developing, freight strategies in conjunction with the freight transport industry and other stakeholders. Industry bodies such as the Freight Transport Association have been instrumental in these processes, along with other stakeholders. Recognising this increasing desire of the freight transport industry to work with its stakeholders, including customers, government at all levels and others, the

Welsh Assembly Government has been working in partnership with the freight transport industry, the Regional Transport Consortia and other stakeholders to develop the Wales Freight Strategy.

In particular, the Welsh Assembly Government convened the Wales Freight Group with a view to providing both an on-going forum for discussion of freight transport issues in Wales (which can also formulate freight-related inputs to specific initiatives) and to assist in preparing the Wales Freight Strategy.

The Wales Freight Group

The main function of the Wales Freight Group to date has been to feed into production of the Wales Freight Strategy, to assist the Welsh Assembly Government in promoting environmentally more sustainable transport while ensuring the Welsh economy is supported by an efficient and effective freight transport system. The Wales Freight Strategy is thus the culmination of work carried out by the Welsh Assembly Government and the Wales Freight Group.

As well as officers of the Welsh Assembly Government, the Wales Freight Group comprises providers and users of freight services across all modes of transport (road, rail, ports & shipping, airports and pipeline) and transport planners, and includes key stakeholders such as the Regional Transport Consortia in Wales, Freight Transport Association, Road Haulage Association, Rail Freight Group, port and shipping operators, representatives from Cardiff-Wales airport and Skills for Logistics (the Sector Skills Council for the freight industry). Throughout the development of the strategy, Group members have participated in meetings and seminars, which have provided significant technical input as well as oversight to the content of the strategy.

As a key aspect of considering and dealing with freight transport issues is partnership, the Wales Freight Group will also be a significant element in taking the strategy forward. As part of the process of delivering the strategy, membership of the Group will also be expanded to include other interest. In particular, to enhance the ability of the Group to address environmental issues, it is anticipated that the Sustainable Development Commission Wales and Cynnal Cymru (the Sustainable Development Forum for Wales) will be invited to send representatives to participate in the Group.

Consultation

The Wales Freight Strategy consultation document was published on 3rd October 2007, for a 3-month consultation period that ended on 4th January 2008. The consultation represented a key stage in developing the strategy, in establishing the views of those with an interest in realising an enhanced freight transport network and operation for Wales. The Wales Freight Group endorsed the consultation document and encouraged the participation of interested stakeholders.

Responses were received from a cross section of people and organisations, including transport network owners/operators, freight users/operators, industry & other interest groups, and local/regional authorities. The content of responses was broadly positive, and the overall message that the strategy outlined in the consultation document sets out the issues facing the freight transport industry and other stakeholders in Wales well, and includes a set of appropriate 'steps' to consider and deal with these going forward.

We have published (electronically) a separate report on the consultation process, including details of the responses. Some of the key messages from the consultation



which have been incorporated into the Wales Freight Strategy are:

You told us:

You would welcome prioritisation of the steps towards delivery

We identified a series of strategic priorities to focus work toward the long-term outcomes of 'Connecting the nation' and support the delivery of 'One Wales'. These have been used to help prioritise the 'steps towards delivery' in the Wales Freight Strategy

You told us:

Delivering the strategy should give freight transport the enhanced profile it needs and leadership by the Welsh Assembly Government in this is important

As part of the 'Connecting the nation', the Wales Freight Strategy has a key role to play in delivering the Welsh Assembly Government's overall 'One Wales' programme. As well as our specific powers related to freight transport, our role in delivering the strategy will be reinforced with active participation in appropriate stakeholder partnerships and through the Wales Freight Group. The Assembly Government is also seeking to review its powers and ability to play a more active role in setting the agenda for ports and rail freight in Wales

You told us:

The environmental impact of freight transport should be given more emphasis, especially in considering air freight

The Strategic Environmental Assessment (SEA) has also identified some issues, and some of the steps towards delivery have been reviewed and altered accordingly to take account of these

1.3 Transport Policy in Wales



The Transport (Wales) Act 2006 confers a general duty on Welsh Assembly Government to promote and encourage integrated transport in Wales, and requires it to produce a national strategy which considers the passenger and freight transport needs of Wales as a whole – this is manifest in 'One Wales: Connecting the nation', the Wales Transport Strategy. The Wales Freight Strategy supports 'Connecting the nation', considering freight transport issues in more detail. It is important to note that whereas the Wales Freight Strategy has its origins in initiatives from the freight transport industry itself, the resulting strategy for Wales will be a statutory document of the Welsh Assembly Government.

Figure 1.1 shows an outline of the transport policy and planning process in Wales, showing how the Wales Freight Strategy fits in with the ambitious and progressive 'One Wales' and other policies, plans and programmes of the Welsh Assembly Government.

Welsh Transport Appraisal Guidance

The transport plans and programmes of the Welsh Assembly Government and Regional Transport Consortia, as well as individual schemes, will go through Welsh Transport Appraisal Guidance (WelTAG) assessment, to ensure that proposed schemes will individually and collectively optimise the delivery of the high level outcomes.

1.4 Transport Policy and the Environment



Living within environmental limits is not only about tackling the growing problem of climate change. Concerns about impacts

from transport and other interventions on environmental resources have led to increased legislation, policy and guidance requirements, designed to protect, conserve and enhance these resources. The Welsh Assembly Government is committed to meeting the relevant legislative, policy and guidance requirements and encourages other transport providers to follow suit.

Strategic Environmental Assessment (SEA)

The Strategic Environmental Assessment Regulations for Wales require an assessment of the likely significant effects on the environment of plans and programmes and their reasonable alternatives. A Strategic

Environmental Assessment (SEA) has been undertaken to assess the environmental implications of the Wales Freight Strategy.

An Environmental Report was prepared, outlining the potential environmental implications of the Strategy, and issued at the same time as the Wales Freight Strategy consultation document. An SEA Statement has now been prepared, and this has been issued at the same time as the final Strategy. The Statement sets out how the Strategy takes into account opinions expressed through consultation (on both the draft Wales Freight Strategy and the Environmental Report), and provides reasons if comments were not taken into account.

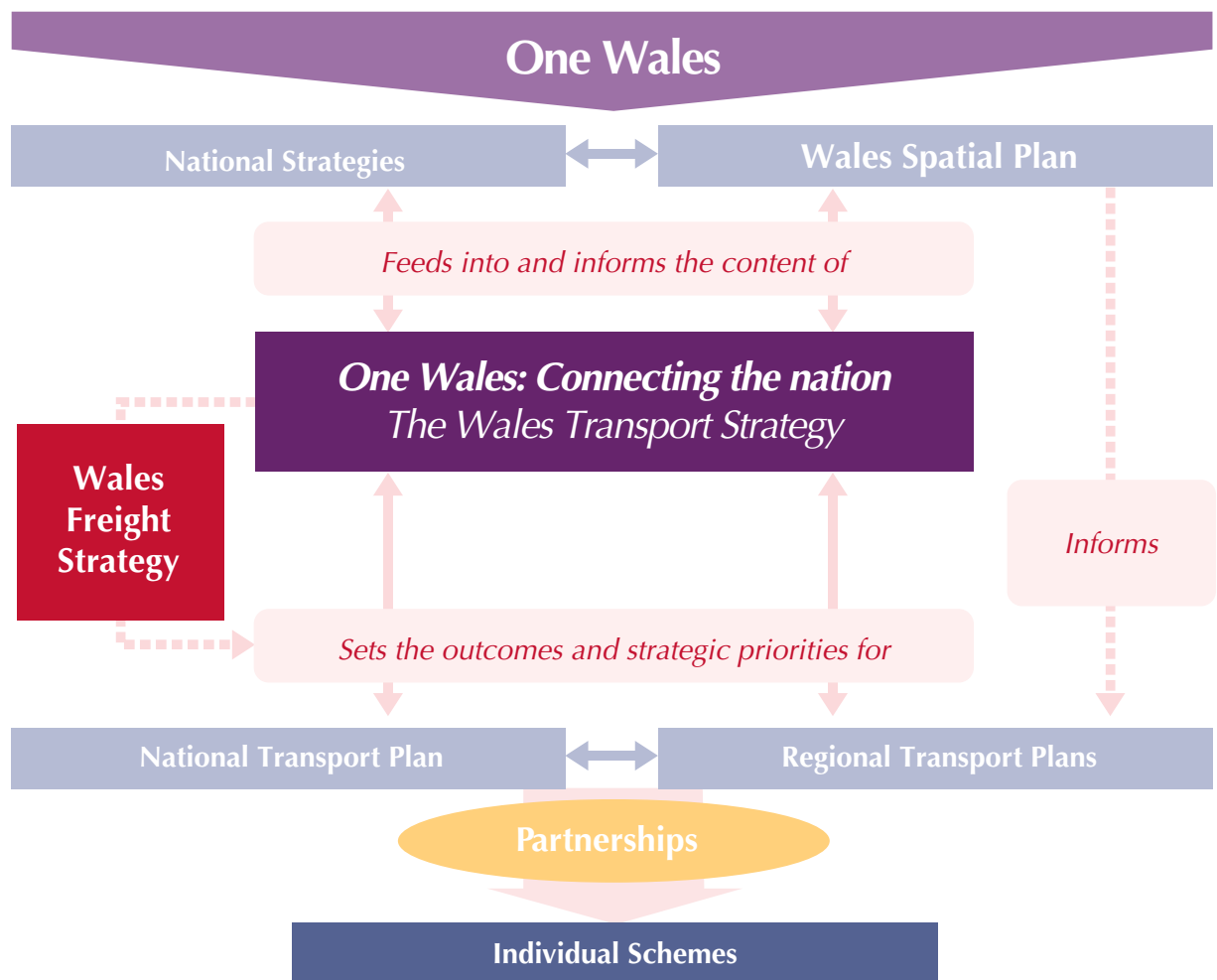


Figure 1.1: The Transport Planning Process in Wales



Habitats Regulation Assessment (HRA)

The outcome of HRA screening for the 'Connecting the nation' was that Appropriate Assessment is not required, as it is a high-level policy document with no implications for specific sites. The Wales Freight Strategy is of a similarly high-level nature, and as such also does not require Appropriate Assessment. The Wales Freight Strategy can only be implemented through other strategies and specific plans and projects and, because of its high level nature, will not constrain or influence those other strategies, plans or projects to an extent capable of increasing their likelihood of adversely affecting any Natura 2000 site.

Assessment of Natura 2000 sites*

An example is Article 6 of the Habitats Directive (as transposed into UK law through the Conservation (Natural Habitats &c.) Regulations 1994 as amended), that requires any new plan or project, including development proposals, likely to have a significant impact on a Natura 2000 site is assessed for its implications on that site in view of the site's conservation objectives. If that assessment concludes that the project would have an adverse effect on the integrity of the site it can only proceed, in the absence of alternative solutions, if there are imperative reasons of overriding public interest. In addition, compensatory measures must be taken to maintain the coherence of the Natura 2000 network.

*As a matter of policy the Welsh Assembly Government requires public authorities to treat all Ramsar sites and potential Special Protection Areas (pSACs) as "European sites" for the purposes of the Habitats Regulations

1.5 Freight in the Wales Transport Strategy



'Connecting the nation, the Wales Transport Strategy, is an essential element of the Welsh Assembly Government's agenda. 'Connecting the nation' seeks to provide a stable, long-term framework, and deals with all modes of transport, as well as implications for other policy areas. The strategy specifies the outcomes and strategic priorities that link the Wales Spatial Plan, the Welsh Assembly Government's wider strategies and development of plans at the local level, and its objectives will be delivered by integrating key proposals with broader national policy areas, as well as through the National Transport Plan and Regional Transport Plans. The Wales Freight Strategy is nested within the 'Connecting the nation' and is consistent with it.

The Welsh Assembly Government is committed to ensuring a future based on social justice, equality and sustainable development, and explicitly recognises the need for policies to reflect the diversity of communities. This has clear implications for transport, not only is an effective system vital for the economy and access to key services, but it also makes a major impact on the environment in its own right. Proposals in 'Connecting the nation' must deliver positive results for economic, social and cultural life, as well as contribute to world-wide moves to stem climate change. The transport system has a vital role to play in ensuring the prosperity and cohesion of 21st century Wales. It is not an end in itself but is vital to achieve many objectives for employment, society, health and the environment. Freight transport is an integral part of this.

Long-term Outcomes

'Connecting the nation' sets out a series of 17 specific long-term outcomes that transport can contribute to education,

spatial planning, health, social services, employment, the economy, environment and tourism.

The relationship between freight transport and these specific outcomes is complex. For many outcomes there is no direct link with freight transport, although this does not imply that freight is less important than other aspects of transport. The overall contribution of freight transport in relation to the outcomes is shown in Table 1.1. More direct impacts are summarised as follows:

- Positive economic impacts, in terms of those directly employed by the industry and the importance of freight generally to the economy;
- Positive environmental impacts of transferring freight from road to rail or sea;
- Negative environmental impact such as climate change impact of transport, as well as local impact of road vehicles, rail or port operations;
- Safety impacts associated with goods transport, particularly by road;
- Assisting in efficient use of infrastructure through influencing choice of mode; and
- Efficiency measures in the road freight industry potentially contributing to a reduced need to travel, and reduced environmental impacts.

Social Outcomes

Outcome	Contribution of Freight measures
1. Improve access to healthcare	Freight transport makes minimal direct contribution, although healthcare and education facilities require a functioning freight industry, as do the retail and leisure industries
2. Improve access to education, training and life-long learning	
3. Improve access to shopping and leisure facilities	
4. Encourage healthy lifestyles	Not directly relevant, but some limited scope for air quality improvements in urban areas
5. Improve the actual and perceived safety of travel	As a contributor to road accidents, goods vehicle safety should be improved (such as through driver training or infrastructure improvements). Where scope exists for reducing goods vehicle numbers, this could improve safety

Economic Outcomes

Outcome	Contribution of Freight measures
6. Improve access to employment opportunities	Increasing activity and numbers of jobs within the freight industry could itself assist in improving access to employment opportunities. In addition, improving the reliability of freight and connectivity within and to/from Wales should help to reinforce the stability of the economy as a whole



Economic Outcomes (continued)

Outcome	Contribution of Freight measures
7. Improve connectivity within Wales and internationally	Of direct relevance to both people and freight movement – in particular, connectivity is seen as a key requirement for industry
8. Improve the efficient, reliable and sustainable movement of passengers	Not directly relevant, but there could be scope for beneficial and/or detrimental effects on freight transport as a consequence of improvements to passenger transport (similarly, measures aimed at freight could impact on the reliability of passenger movements)
9. Improve the efficient, reliable and sustainable movement of freight	Outcome of direct relevance to and aimed at freight transport, encompassing a full range of policies and measures
10. Improve sustainable access to key visitor attractions	Freight transport makes a minimal direct contribution, although attractions require a functioning freight industry

Environmental Outcomes

Outcome	Contribution of Freight measures
11. Increase the use of more sustainable materials in sustaining our country's transport assets and infrastructure	The heaviest vehicles cause a high proportion of wear and tear to road pavements. Reducing overall numbers (operational efficiency or modal shift) would limit these impacts. More sustainable materials should be used in constructing freight transport facilities
12. Reduce the impact of transport on greenhouse gas emissions	Improved loading efficiency and use of cleaner fuels and engines would reduce impacts of freight on pollution, CO ₂ emissions, noise and vibration (in particular road freight, but also rail, sea and air). Transfer of freight from road to rail, sea or inland waterway would also contribute in the same way. Some freight developments, e.g. interchanges or consolidation centres, could cause adverse impacts (e.g. flood risk, light pollution, noise)
13. Adapt to the impacts of climate change	
14. Reduce the contribution of transport to air pollution and other harmful emissions	
15. Improve the positive effect of transport on the local environment	
16. Improve the effect of transport on our heritage	Limited effects. Some freight developments, e.g. interchanges or consolidation centres, could cause adverse impacts or require that suitable materials and practices are used. Alternatively, routeing strategies for goods vehicles could reduce the potential for impacts in sensitive areas
17. Reduce the impact of transport on biodiversity	

Table 1.1: Contribution of freight measures to 'Connecting the nation' outcomes

Principle	Aims and relationship to Freight
Make maximum use of existing infrastructure	Including action to make journeys more reliable and ensure better integration of all modes of transport. More efficient and reliable use of available infrastructure will clearly affect freight operations
Promote more sustainable and healthy forms of travel	This has a particular aim of reducing single-occupancy car use, make walking and cycling the first choice for shorter journeys, and public transport an attractive choice for longer journeys. For freight, it also seeks to generally reduce the environmental impacts of transport, such as encouraging use of environmentally friendly modes
Minimise the demands on the transport system	For example, land use policies taking into account effects on demand for transport, with good public transport access for major destinations For freight this means that efforts should be made to consider the demand for freight activity
WelTAG (Welsh Transport Appraisal Guidance)	Use WelTAG to ensure that costs and benefits of new infrastructure to the economy, society and environment are considered in a systematic way
Equality	Take into account the potential impacts on equality when developing policies and actions, and obligations under the Human Rights Act

Principles and Priorities

‘Connecting the nation’ outlines a series of 5 principles for considering actions to take to achieve the outcomes. These principles, and how they relate to freight are shown above.

Taking the principles as the backdrop, ‘Connecting the nation’ sets out strategic priorities for its first phase, identifying a number of key areas and actions for early progression. The strategic priorities of ‘Connecting the nation’ are:

- Reducing greenhouse gas emissions and other environmental impacts from transport
- Integrating local transport
- Improving access between key settlements and sites
- Enhancing international connectivity
- Increasing safety and security

There are some clear links to freight in the priorities and actions, and these are drawn out in the Wales Freight Strategy, in particular in prioritising for implementation.

1.6 Outline Wales Freight Strategy



Key Aspects

The Wales Freight Strategy is designed to:

- Assist Regional Transport Consortia in the development of Regional Transport Plans;
- Identify and promote factors supporting sustainable distribution systems;
- Support Welsh industry and commerce with a reliable and cost efficient network for raw materials and manufactured and consumer goods;
- Anticipate and respond to fundamental changes in the supply-chain and markets;



- Identify weaknesses and constraints in the existing freight network which may impact negatively on the Welsh economy; and
- Integrate and maximise use of existing freight infrastructure using all transport modes to the benefit of the environment and economy.

Some of the other main imperatives behind development of the Wales Freight Strategy include:

- New transport powers for the Welsh Assembly Government;
- The need for environmentally less damaging transport;
- A shift in production to the Far East and Eastern Europe bringing new challenges to the economy of Wales/UK and its freight network;

- Fundamental changes in domestic distribution of goods;
- The emergence of new markets and opportunities; and
- Review of UK Port Policy by DfT.

Timing of the Wales Freight Strategy is thus apposite in relation to challenges, changes and initiatives facing the freight industry in Wales and the wider world.

Hierarchy

The demand and need for freight transport, along with the roles of individual modes and potential interventions, is considered at three levels in the strategy. These levels reflect the substantially commercial decision-making process that leads to freight transport movements taking place. This decision-making 'hierarchy' forms a key element of the strategy, and is shown in Figure 1.2.

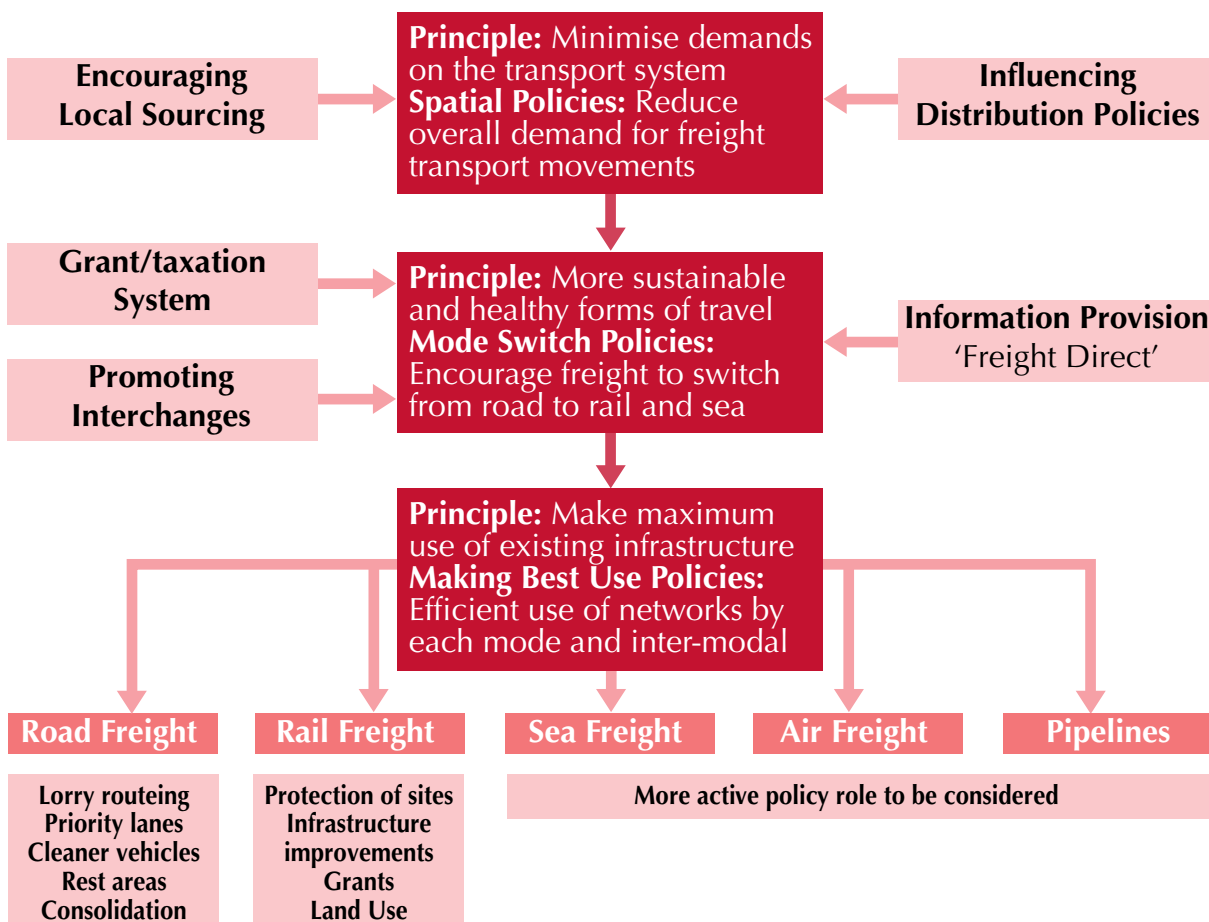


Figure 1.2: Freight – Hierarchy of Freight Measures

There is very close synergy between the hierarchy of the Wales Freight Strategy and three of the key guiding principles of 'Connecting the nation'. For instance:

Principle: "Minimise the demands on the transport system"

Spatial Policies - Firstly, measures can be considered to try to influence the overall demand for freight transport, through for example spatial planning policies, or working with industry and commerce to reduce empty running and promote local sourcing. This reflects that decisions are made by procurers of goods/services, as well as suppliers, and the various economic and geographic situations will then generate freight movements.

Principle: "Promote more sustainable and healthy forms of travel"

Mode Switch Policies - Next, having determined that freight needs to be transported from place-to-place, the second level of the hierarchy encourages efforts to be made to influence mode choice. This is specifically aimed at encouraging use of the most environmentally sustainable mode or combination of modes over the journey required. It particularly targets use of modes such as rail and water for as much as is practical for any journey.

Principle: "Make maximum use of existing infrastructure"

Making Best Use Policies - Thirdly, this level in the hierarchy promotes measures to make the best use of each network and mode. This is specifically to promote efficiency and minimise any adverse impacts that arise from the mode concerned.

The remainder of the strategy follows the story of freight through the hierarchy, considering the Strategic Issues (Chapter 2 & 3) that drive the demand for freight in the first place, as well as some of the key mode choice issues, suggesting a series of policies and actions in Chapter 3 that seek to address both 'Spatial' and 'Mode Split' elements. Subsequent chapters of the strategy consider each of the main freight transport modes in turn, including:

- Chapter 4 – Road Freight
- Chapter 5 – Rail Freight
- Chapter 6 – Ports and Shipping
- Chapter 7 – Air Freight
- Chapter 8 – Pipelines

Each chapter identifies some of the key issues and potentials of the individual modes, including a series of specific 'steps towards delivery' for each mode with both 'Mode Split' and 'Making Best Use' elements.

1.7 Policies and Actions



In developing the Wales Freight Strategy, a balance has been struck between high-level principles and action plans. The Wales Freight Strategy is part of the process of taking forward 'Connecting the nation', and as such focuses on high-level principles, which are not precisely determined in the strategy itself, but will be developed into specific proposals and action plans by subsequent processes. For example, it is intended that this strategy will suggest ideas for the development of freight-related policies and proposals in Regional Transport Plans, to be prepared by the four Regional Transport Consortia in Wales.

As such, the strategy presents 'steps towards delivery' at a number of stages in the document. These are set out to highlight



ideas that the strategy is promoting for each of the main freight transport modes, as well as in cross-cutting inter- and multi-modal issues.

Steps towards delivery can be considered in terms of their roles related to the three elements of the strategy hierarchy. Figure 1.3 indicates the relationship between steps towards delivery and the hierarchy. The ‘first steps’ consider strategic issues that relate to spatial and mode switch policies. These are discussed in Chapter 3. The ‘modal steps’ can be found in Chapters 4-8, and cover both mode switch policies specific to the mode concerned, as well as making best use and minimising the impacts of each mode.



Figure 1.3: Policies & Actions: Steps to Delivery and the Hierarchy

Steps towards delivery should be:

- Of general application and can be applied in a similar fashion in more than one location;
- Capable of being implemented and funded (that is, fundable in due course once more detailed work has been done);
- Logical and capable of being developed into or incorporated in action plans; and
- Capable of gaining political support (be it local, regional, or national) over the lifetime of the strategy.

However, it is also important to note the converse of this, in that ‘steps towards delivery’ are not intended to be considered as specific to any single location, set to specific defined timescales or be unrealistic ideas which are not capable of gaining financial and political support, though this need not be unanimous and/or immediate support today.

Public Sector Role

In considering the roles that the public sector has in relation to freight, it is important to take into account the substantially commercial nature of the freight transport industry. This is discussed further in Chapter 2, but in general terms this limits the potential role of the Welsh Assembly Government and its local and regional partners when compared to other areas of transport policy and practice, especially when comparing with passenger transport. In recognising this, the strategy identifies that the role of the public sector will encompass policies and actions that both seek to influence freight transport decisions and react to the commercially-driven market situation (in terms of current practice and anticipated changes).

It is therefore helpful to consider at this stage the range of measures that fall within the current remit of the Government and regional consortia in Wales. For example, these could include:

- Designation of routes for goods vehicles (including ‘no-car’ lanes)
- Designation of restrictions for goods vehicles;

- Planning policies;
- Provision of rest areas;
- Provision of, or support for, freight consolidation centres and town centre delivery controls;
- Provision of, or support for, multi-modal freight interchanges;
- Rail infrastructure improvements to assist freight on rail;
- Grants and/or subsidies to encourage modal transfer to rail or water;
- New or amended legislation on working practices; and
- New systems of charging for infrastructure use.

Each area of Wales will need its own distinctive response to delivering the strategy. As such, the Regional Transport Consortia can select the measures and initiatives within the strategy that will best address the issues that need the biggest focus in their regions. The Regional Transport Plans will propose priorities within their areas.

Chapter 2: Freight in Context

2.1 Introduction



Freight transport is a derived demand and thus reflects both the overall demand for goods and also, more importantly, the demand for goods to be moved. As such, freight transport makes an important contribution to the economy. This is manifest in two main ways.

Firstly, efficient logistics extends market reach, by giving manufacturers access to a wider range of raw materials and supplies, and consumers' access to a wider range of manufactured goods or services, both from domestic and international suppliers. This is of great importance to Wales, and more widely across the UK, as around 20% of national income (GDP) derives from international trade in goods. However, logistics in its widest sense also includes the distribution of information and services. Adding these increases the value of trade to the economy to around 30%.

Secondly, efficient logistics also reduces waste, both in using materials and other resources and in the deployment of capital, and is an important sector of the economy in its own right. It is estimated that logistics (insofar as it can be distinguished from general commercial and industrial activities) account for nearly 4% of the economy of the

UK (GDP), valued at around £75bn in 2006. There are 1.7 million jobs in logistics sector workplaces², and a further 0.5 million in logistics roles in other sectors, accounting for around 6% of total employment. In Wales, this is some 7% of employment, with around 61,000 people employed in logistics companies, and a further 30,000 in logistics roles for other organisations. There are some 7,400 logistics workplaces and 2,400 logistics companies. Logistics contributes approximately £2.5 billion per annum to the Welsh economy.

The freight transport element of logistics typically accounts for between 5% and 10% of business costs, although this proportion can be considerably higher in some heavy industrial sectors.³

However, it must also be considered that freight operations give rise to other impacts, for example on the environment. These impacts vary according to the mode of transport used, and are considered in more detail in later sections.

A key issue in relation to freight operations is the policy and legislative framework governing the industry. This is formulated at a number of levels, ranging from European Union (EU) to local authority. The key roles of each level are set out in Figure 2.1.

² Based on Standard Industrial Classification (SIC) including Wholesale (on a fee or contract basis and of waste and scraps), Freight Transport by Road, Scheduled Air Transport, Non-Scheduled Air Transport, Cargo-Handling, Storage & warehousing, Other Supporting Air Transport Activity, Activities of other Transport Agencies, National Post Activities and Courier

³ Sources: 'Skills for Logistics' – UK and Welsh Logistics Sector profiles (2007), LSA Research Report (2005) and direct submission to WFS

European Union

- Definition and promotion of Trans-European Networks for transport (TEN-T)
- Environmental and air quality standards
- Vehicle standards, construction and use; including limits for vehicle weights and dimensions (interoperability) and emissions standards for engines
- Limits on working hours, policy for driver training and licensing, policy for tachographs
- Conditions for cabotage (operation of vehicles in states other than the state of registration)
- Interoperability of systems – in particular rail and distance-based charging for freight transport
- Grants and subsidies (international)

UK Government

- Inclusion of EU directives in relevant UK legislation
- Grants and subsidies (mostly in England)
- Taxation regime
- Driver, vehicle and operator licensing (including limits for working hours)
- Domestic vehicle standards, construction and use; including limits for vehicle weights and dimensions
- Provision, operation and development of strategic road network in England (Highways Agency)
- Setting national speed limits, signing regulations and traffic regulations
- Enforcement policy for vehicle size, weight and speed limits, vehicle safety standards and drivers' hours in England
- Developing and support for the rail network in England and overseeing the whole network
- Locations of major freight transshipment centres, ports and airports
- Formulation and development of policy on road user charging
- In England: Planning Policy and Guidance. Regional Assemblies develop Regional Spatial Strategies and Regional Transport Strategies to frame Local Development Frameworks and Local Transport Plans

National: Welsh Assembly Government

- Provision, operation and development of strategic road network, including signage on strategic network by the Welsh Assembly Government
- Enforcement policy for vehicle size, weight and speed limits, vehicle safety standards and drivers' hours
- Planning Policy and associated guidance for Wales
- Recommendations on development and some support for rail network in Wales
- Grants and subsidies (some)

Note that powers in Wales are different from those in Scotland and Northern Ireland (the other national assemblies/parliaments of the UK). For instance, powers over rail are greater in Scotland, where arrangements cover responsibility for the provision and development of the rail network in Scotland by the Scottish Executive. Similarly, in Northern Ireland, rail is the responsibility of the Northern Ireland Department for Regional Development (NI DRD)

Regional Consortia/Local Authorities

- Regional consortia or partnerships of local authorities will produce transport strategies and plans in Wales (Local Transport Plans in England)
- Responsible for local roads (maintenance, development and signing)
- Provision of loading bays, overnight lorry parking and driver rest facilities
- Planning permission for freight generators and attractors, distribution centres, freight operating bases and lorry parks (excluding major sites)
- De-criminalised parking enforcement and potential introduction of urban congestion charging
- Weight and size restrictions on local roads and restrictions on access, loading and unloading, traffic management orders (including prohibition of heavy goods vehicles) and lorry (no car) lanes
- Powers under consumer legislation such as enforcement of vehicle weight limits by trading standards

Figure 2.1: Levels of Government and Roles and Responsibilities in relation to Freight



Government can play a crucial role in the provision of major infrastructure, which in turn influences the configuration of supply chains. For example, the locations of distribution centres are influenced by road (and rail) links, which can in turn influence the number of locations which can be offered specifically-timed deliveries, and for some industries such services can be an important determinant in meeting just-in-time supply chain requirements.

However, it is important to note that the freight transport industry itself is almost entirely commercial, and the role of governmental authorities is limited. Matters such as legislation on vehicle weights and drivers' hours, designation of appropriate freight routes and provision of grants for specific initiatives are under direct governmental control, but many other trends in freight movement are driven by commercial factors that lie outside direct public sector control. There have been moves in recent years towards closer working between the public and private sector to address freight-related transport issues, such as through Freight Quality Partnerships. The Wales Freight Group is another very good example of this.

2.2 Trends in Freight Transport

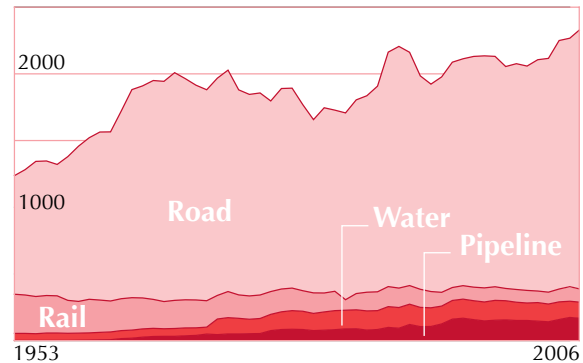


Around 100 million tonnes of domestic freight ('goods lifted') are transported in Wales per annum, estimated from Department for Transport (DfT) and Department for Trade and Industry (DTI) figures. In total, the amount of freight transport that takes place ('goods moved') is around 13 billion tonne kilometres. This represents around 5% of all freight transport in UK (some 2 billion tonnes of goods lifted giving around 250 billion tonne kilometres of goods moved in the UK as a whole). Mode split for Wales is estimated to be similar to the UK as a whole. Trends in the

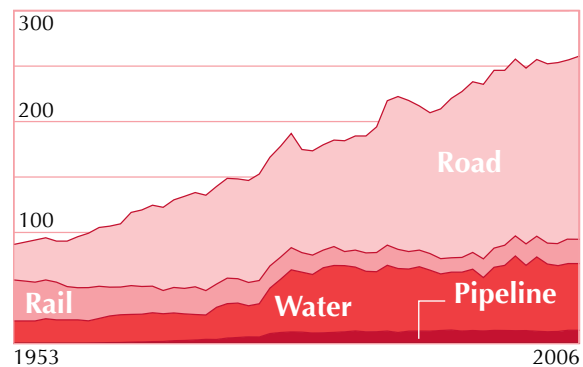
demand for freight transport in UK over the last 50 years, which are reflected in Wales, are illustrated below:

Trends in UK Domestic Freight (1953-2006)

Goods lifted (million tonnes)



Goods moved (million tonne-km)



Source: DfT/DTI, 2006/2007

It is interesting to note that whereas the weight of freight carried (tonnes of 'goods lifted' onto transport) in the UK has stayed remarkably consistent over the last 30 years, freight actually moving around (in terms of tonne-kilometres travelled by transport) has more than doubled. This is accounted for largely by significant increases in the use of road freight, and in particular in making use of road freight's inherent flexibility to adapt to changes in business practice and help to shape the production and distribution process. Note that North Sea oil and gas coming on stream in the 1970s resulted in significant increases in water transport and pipeline use.

Road transport dominates the movement of freight in UK, accounting for 83% of goods

lifted and upwards of 64% of goods moved. The apparent disparity of these figures is accounted for by the average haul length of goods by road being (generally) shorter than other modes, and a tendency for heavier goods (such as aggregates) to travel longer distances by water or rail.

The proportion of freight in the UK using rail has declined significantly, from accounting for almost a quarter of goods lifted (and over 40% of goods moved) in the early 1950s, to around 4.7% of goods lifted in 2006 (and 8.5% of goods moved). However, this has to be considered against the backdrop of a significantly increasing market for freight movement and decreasing mileage of the rail network. Hence, while the market share of rail freight has declined significantly, the actual amount of goods moved is still over 50% of 1950s levels and pro rata use of the rail network for freight has increased. In recent years, the amount of goods moved by rail has increased significantly; it is currently around 19 billion tonne kilometres (for the UK as a whole), an increase of 50% in the last 10 years. This represents a general upturn in attempts to generate rail-based freight flows since privatisation of the industry, but also reflects changes in wider industry requirements, such as an increase in demand for imported coal, which typically needs to travel further than domestically-mined coal due to the locations of many power stations in former coalfield areas rather than near ports.

2.3 The Role of Freight



The role of freight as a 'means to an end' in the Welsh economy has also substantially changed, as it has across the western world. This is primarily from being simply the means by which materials are provided to manufacturers and finished goods shipped to end users, to an intrinsic part of the production process. Note that this applies equally to the 'production process' that

delivers food to supermarket shelves as to the production of a consumer product such as a washing machine. This is significant in that food distribution, in particular, has manifestly changed with the rise in prominence of supermarket retailers.

Indeed, the effect of efficient management of the supply chain and distribution and use of (particularly road) freight transport as part of the overall process means that manufacturers and retailers no longer hold large stocks of materials and finished items. This has financial and economic benefits in that capital is not tied up in stored stock, but means that large sectors of industry and commerce are reliant on the efficient transport of freight on a day-to-day (or even hour-by-hour) basis, something that can frame views on the effects of delays to (particularly road) freight movements. A consequence of this, and to a certain extent also a cause, has been a gradual reduction in the cost of transport as a proportion of overall production costs.

The increasing ease with which goods are transported around the world, particularly through substantial growth in liner shipping of containers, means that sources of raw materials and part and fully finished goods can be located more or less anywhere in relation to the eventual destination. This globalisation of trade has changed origins of the movements of some freight in Wales, albeit not necessarily substantially changed the amounts. Similarly, although small in terms of the weight of goods carried, the increasing availability of air freight capacity has also allowed international sourcing to utilise marginally priced capacity, making air freight viable even when avoiding the time penalties inevitably associated with surface modes are not paramount.

Notwithstanding the above, the de facto role of freight within the economy as a whole has apparently lessened, if the amount of freight transported is compared to overall GDP.



Indeed, in the context of the UK as a whole, the amount of freight transported (tonne-km) has grown at a lower rate than GDP since the 1950s.

In the context of the wider European economy, it is noticeable that the amount of freight moved in Wales (and the UK in general) is actually significantly less than that of apparently similar European Union (EU) countries. For instance, almost twice the amount of goods is moved (tonne-km) in France than the UK. However, this reflects the size of the country, the more disparate nature of its markets and significant transit movements. Modal share in Wales is more biased towards road freight than the EU average, though these figures reflect the significant availability of inland water transport in key freight movement areas in the heart of western Europe, such as in Germany. Table 2.1 illustrates the amount of freight transported in selected countries of the EU.

2.4 Influencing the Demand for Freight



In recent years it has often been questioned whether the sheer volume of road freight movement is really required, or whether more efficient operations could be

implemented, thus reducing mileage, congestion and environmental impacts.

For example, the rate of empty running of lorries remains significant, at around 27% in 2005, and has been broadly static for the last 10 years. The incidence of light running, where vehicles are not loaded to their full capacity, is greater still. The FTA believes that a reduction in light or empty running is likely to occur, as return loading should increase with the expansion of load-matching services and a growth in the reverse flow of packaging material and handling equipment. It is obviously not practicable to eliminate all empty or light running. There are a number of activities (for example, certain foodstuffs, chemicals and oils/petroleum) where it is not feasible to secure return loads. However, there still appear to be many opportunities for reducing empty or light running, whether through better information systems, promoting collaboration between operators or introducing improved vehicle or packaging technologies.

There is also a potential link between 'clustering' and the freight industry. The more clustered the demand for freight, the more it becomes possible to service demand

Country	Road		Rail		Inland Water		Pipeline		Total	Ratio*
Wales	8	84%	1	10%	-	-	0.5	6%	9.5	-
UK	149	82%	20	11%	-	-	12	7%	181	85
Belgium	40	70%	7	12%	8	14%	2	4%	57	95
France	274	78%	50	14%	7	2%	21	6%	352	94
Germany	353	69%	75	15%	65	13%	16	3%	509	105
Portugal	15	88%	2	12%	-	-	-	-	17	118
EU	1,392	75%	242	13%	125	7%	87	5%	1,846	100

* Ratio of tonne-km to GDP, indexed to 1995 (=100)

Source: Estimated from WAG, DfT & EU statistics, 2004 [2003, million tonne kilometres]

Table 2.1: Freight moved in selected EU countries (figures in billion tonne-km)

more efficiently, and tap into a potential to develop multi-directional flows. Similarly, initiatives to deal with waste, such as the EU Waste Electrical and Electronic Equipment (WEEE) Directive, which introduces a producer responsibility to deal with products from production to destruction (encouraging re-use and re-cycling along the way), have the potential to introduce an additional link into the supply chain.

A related issue is the way in which distribution systems have developed over recent years, in particular that the main system of food supply in the UK has evolved to make use of goods vehicles travelling comparatively long distances between suppliers and shops via centralised distribution centres.

These distribution systems are efficiently run, and constantly monitored and adjusted, with consequent reductions in the impact per tonne moved. However, this masks the situation that sources of goods have become more disparate as economies across the world have become closely linked – facilitated to a large part by the freight transport system. This is particularly noticeable for consumers in the sourcing of food, where international air and sea transport can be used to ensure that many previously ‘seasonal’ fruit and vegetables are available all year round. Similarly, the production of consumer goods increasingly takes place in the Far East.

Policies are developing to encourage the local sourcing of food, both to assist Welsh farmers and other producers, and reduce the distance that produce travels (so-called ‘food miles’). The environmental impacts of greater numbers of distribution centres, with associated land-take and energy use, and potential use of smaller vehicles which can lead to extra vehicles and lower load factors, also need to be considered in assessing the most environmentally sustainable approach overall.

To leverage efficiency improvements into the supply chain and to sustain these, UK operators are making increasing use of Intelligent Transport Systems (ITS), including for example vehicle telematics. Uptake of this technology in the UK is twice the level across the whole of the EU. The use of ITS and telematics to improve vehicle utilisation is reinforced by the application of technology that allows the sharing of information between transport suppliers and customers. For example, information about the location of a given consignment in the supply chain can be provided using combinations of GPS (Global Positioning System), RFID (radio frequency identification) and the internet.

At a more local and individual level, spatial planning policies can influence overall demand for some forms of freight, such as:

- Reducing the need for re-delivery of home delivery items such as parcels and packages through the use of neighbourhood secure post-boxes or collecting points;
- Rural consolidation centres could be considered to reduce direct delivery of commercial goods in sensitive areas; and
- Identifying and increasing the social role that specific forms of freight can provide, such as rural postal services, in consolidating domestic deliveries.

2.5 Freight and the Environment – Greenhouse Gases



Transport is a major emitter of greenhouse gases into the atmosphere in developed economies, in particular direct or indirect emissions of the key greenhouse gas, carbon dioxide (CO₂). The specific impacts of freight transport vary significantly according to the mode of transport being used, and accurate and comparable figures can be obscured by other operational elements of freight



transport, such as payload size and whether there is combined transport of passengers and freight. Consequently, a range of estimates of emissions are available for the individual freight transport modes.

Table 2.2 illustrates a selection of these estimates. While these statistics clearly vary significantly, they indicate that sea transport

generally emits the least CO₂. Rail and inland waterways are similar (depending on load factors) and emit broadly twice as much CO₂ per tonne-km as sea transport. Road emissions are around 6-times those of rail, with air freight emissions being between 5 and 10-times as much as road (and potentially as much as 100 times greater than that of sea transport).

Mode	Source INFRAS Update 2004, MEET 1999, Eco-Logica 1994 ¹	European Commission CEC, DG XI ²	EEA TERM 2003 27 EEA 31 ³	STRAW Report ⁴
Rail	20 / 40 (electric / diesel)	39-48	23	33
Road	100	207-280	123	193
Inland Waterway	-	40-66	31	44
Sea	10-20	-	14	-
Air	650	1,160-2,150	-	-

Sources

1. Aviation Environment Federation (House of Lords Select Committee on European Union Minutes of Evidence)
2. Inland Waterways Association (www.waterways.org.uk)
3. Biomass Energy Centre (www.biomassenergycentre.org.uk)
4. Sustainable Transport Resources and Waste (www.straw.org.uk)

Table 2.2: Carbon Dioxide (CO₂) emissions for freight transport (g/Tonne-km)



Chapter 3: Strategic Issues

3.1 The Networks

The Welsh Context

The historic and on-going effects of geography and topography cannot be ignored when considering the transport networks in Wales. In particular, the road and rail networks closely follow the hilly terrain, as well as reflecting the ebb and flow of economic development of the country, and their development reflects a combination of historic economic requirements over the years.

Hence, although there are main road and rail routes running close and parallel to the north and south coasts of Wales, in the rural areas of Mid and North Wales networks are more limited, as they generally follow the paths of rivers through valleys rather than crossing upland areas.

In more urban areas, such as the South Wales Valleys, the network of roads, railways and ports was initially developed to serve the industrial needs of the 18th and 19th centuries. The road and rail networks follow the Valleys into the city centres and port areas of Newport, Cardiff and Swansea. Substantial changes have occurred in more recent years with increases in the amount of road infrastructure, though even today links between the Valleys themselves are sometimes difficult. There have been significant reductions to the rail network, whereas much of the early port infrastructure remains, albeit in many cases exceeding the operational requirements of the 21st century.

The road network is the most extensive and comprehensive transport network in Wales, and hence the most flexible individual mode

for freight. It is of particular importance to consider that the road network provides the basic connections for most potential and existing freight users, as well as at ports and rail terminals. For many places, and in particular much of the rural areas of Wales (and especially mid-Wales), the road network offers the only freight transport option, and furthermore is not always well-suited to the needs of heavy freight movements. For instance, two elements of the economy of rural Wales that routinely require freight transport include forestry and agriculture. Livestock movement in particular has increased as a result of less abattoir facilities being available.

Existing rail terminals generally have good road connections, though adding more terminals could reduce the potential problems caused by the 'final mile' of a multi-modal movement; the first or last leg of a journey at the origin or final destination. Apart from some bulk commodities, origin and destination points of freight within Wales are often not both directly rail-connected. Ports in Wales are reasonably well-served by road and have generally adequate rail connections, although there is scope for development.

Connections between modes are important when planning the development of terminals, whether new or existing. For example, in developing a port or inter-modal terminal, the road, rail and shipping links should be considered for freight.

To illustrate the networks in context, population densities in Wales are shown in Figure 3.1, with the main transport networks themselves in Figures 3.2-3.4.



Relationship with England and Ireland

Transport networks within Wales must not be considered in isolation. Significant road and rail traffic moves between Wales and England, including traffic originating in both Wales and England, as well as elsewhere. The networks reflect these linkages with, for example, Wales' motorway and key parts of the trunk road network being very much an extension of the English network, with the M4 linking South Wales to London and the A55 running along the North Wales coast from Holyhead to the motorway network on Merseyside.

There are also key international road freight movements between Ireland and the UK and the rest of Europe, a significant amount of which passes through Wales in transit. For instance, some 240,000 road freight vehicles were transported to/from Ireland through Welsh ports in 2006 (2-way, including unaccompanied trailers). UK and Irish-registered vehicles alone carried some 1.8 million tonnes of freight, of which around 12% came from or was destined for Wales. Almost 75% of freight vehicles (some 172,000) used ports in North Wales, with the majority of these travelling through Holyhead.

In a similar way, the main railway lines in Wales were historically built as extensions of the Great Western Railway and the London & North Western Railway (now the West Coast Main Line). As a result of network rationalisation over the years, all rail movements between North and South Wales have to use lines in England, most direct movements using the Marches line through Hereford and Shrewsbury. All rail freight (and passenger) operators in Wales run services between Wales and England, and a significant amount of rail freight in Wales travels to/from places in England and beyond.

The UK's main deep sea ports of Felixstowe and Southampton are in south-east England and, as a result, much Welsh international maritime traffic (often originating in the Far East) reaches Wales via England, mainly by road but also an amount by rail to the Wentloog International Freight Terminal.

The relationship between the networks of England and Wales is thus both a matter of historical development as well as modern day usage, and should be taken into account in planning within Wales. Consideration of rail network improvements in Wales needs to take into account proposals in England, and vice versa.

Road User Charging

A key future issue facing freight transport in Wales, and indeed the wider transport of goods and people throughout the UK, is charging for road use. At present, charges are only directly levied for discrete sections of the road network, generally with specific reasons for charging. Charges are typically higher for goods vehicles than passenger cars, with the highest charges for the largest vehicles.

Most current charging schemes are estuarial crossings (including the Severn crossings), where revenues are used to pay costs of development through private concessions or local authority mechanisms. More recently, schemes such as the M6 Toll, an alternative to the M6 through the West Midlands and London congestion charge, have levied charges for using other sections of the road network. A number of similar schemes are being considered.

The DfT is currently leading work on national road pricing for the UK as a whole, which could cover all roads at all times. The idea behind this sort of scheme would be to spread traffic more evenly



across the network, address congestion and environmental problems, and remove boundary issues. This approach could be applied in addition to or including a restructuring of motoring taxation. As a result of this, the proposed Distance Based Charging (DBC) scheme for goods vehicles has been shelved pending further work on the national charging system for all vehicles.

Complementary nature of the modes

In considering modes of freight transport there can be a notion that one is superior in some way to another. Some products have a 'natural' mode such as refrigerated goods for a supermarket on road, bulk coal to power stations on rail, or scrap steel by sea. However few rail or sea freight journeys are completed using only a single mode, though there are exceptions for (particularly) bulk commodities.

Goods arriving in Wales by sea or rail are often taken by road to their final destination. Likewise, freight originating in Wales may need a road leg to connect to a rail-head or port to complete its journey. As the focus on sustainable transport continues it is important to note that a short road leg may be necessary and complementary to a longer journey by rail or sea.

To get the most from the natural advantages of each mode, consideration of the need for efficient interchange is required; inter and intra-modal interchange is just as important for freight as for passengers. Modal transfers in some cases may be direct, for instance when a maritime container is transferred directly between ship, truck and train, but in other cases may involve intermediate storage or re-packing (for instance break-bulk activities). Inter-modal facilities within Wales need to be properly equipped to allow these transfers to take place, or there is a risk that movements will take the most 'convenient'

mode (often road) for the whole journey, rather than incorporating sustainable modes in the journey.

3.2 The Freight Industry



There are a number of issues affecting the freight transport industry as a whole, the impacts of which can be observed or felt across all of the modes.

Freight – the forgotten service

There is a risk that transport planners and politicians focus on the needs of passenger transport to the detriment of freight. The profile of the freight transport industry is low. There appears to be a distinction in public perception between the negatively viewed 'freight', largely based on sight of lorries (passing through towns and villages or judged to 'delay' journey progress for car drivers), and the more positively viewed 'shopping' or 'utilities' (such as heat and light), which will use that same 'freight' for some of its delivery. There is consequently a need to raise the profile of freight as being essential in a working and healthy economy, rather than something to be sidelined, and segregated away from people in both urban and rural areas. There is need to understand the impact of freight traffic on a working and healthy economy.

Who is the freight customer?

In the passenger transport business, it is readily possible to identify the customer. There are essentially two elements; the 'customer' who pays and the 'customer' who travels, and more often than not, these are one and the same person. The customer of a freight transport service is more difficult to identify. In transporting freight, a customer pays for the transport service, but it is the goods that actually travel. Furthermore the ultimate customer may be:

- a product manufacturer;
- another business user of the goods, such as a retailer or assembler of components;
- the end customer for the goods being transported; or
- a logistics and transport provider working on behalf of one of the other three categories.

Each of these 'customers' may place a different value on the key variables of time, cost and quality of the transport. For example, a retailer who operates with limited stocks in stores may regard on-time reliability of freight as fundamental. Perishable goods may have a greater requirement for speed of transfer. However, someone buying marble tiles may consider the quality and condition of the product on arrival to be more important than the length of time taken, though might also need delivery at a specified date and time to fit in with building schedules, thus also needing high reliability.

The costs of transport are typically passed on to a supplier or buyer of the goods, albeit not necessarily directly identified. For instance, the end customer for any product will seldom know how much of the price they pay for the product is made up of transport considerations, or what modes of freight transport are used.

Modal choice in freight

Understanding how the mode of freight transport is chosen is also important. Overall, an EU study of Freight Integrators (September 2003) identified that transport decisions are typically taken firstly on price, secondly on timescale, and thirdly by journey time and reliability. Choice or preference for a particular transport mode is not usually part of the decision.

However, notwithstanding that in some places there will be restrictions on the availability of options (such as alternatives

to the road network in rural areas), many 'decisions' on mode are not active decisions at all, but are passive decisions of habit and to 'do what happened last time'. This may be because of contracts with existing partners, or simply a form of inertia because of the convenience and effectiveness of previous or existing arrangements. The customer of the transport service will also generally have an idea of what transport costs are affordable, based on an historical view of 'what it cost last time'.

When a new freight movement is identified, a mode-choice decision may be made. However, even then, in many instances the 'choice' is often based on extending previous transport patterns, or using existing partners. For example, if a new delivery point 'B' is 100km further away from base than a current delivery point 'A', the customer is intrinsically prepared to pay a proportional amount more based on the cost of delivering to 'A' using the same method. Hence, the benchmark, and thus often the decision, is to place this extended movement with an existing transport partner (who are unlikely to vary the current mode of transport).

If there is a specific decision to change mode of transport, that decision may then not be immediately implemented. The EU Freight Integrators study also found that, for an existing freight movement, it can take 6 to 12 months to make a change in the mode of transport used. Hence it is a considered view that a new transport service needs at least three years of operation to reach a stable level of traffic.

Marketing and information distribution

Marketing freight transport can be a challenge given a habitual price-driven market that is slow to change. In price-driven consumer markets there is great transparency on product prices, but this is



not the case in the freight transport market. Freight transport pricing is generally kept confidential allowing providers to negotiate at the margins and transparency is limited.

This means that for transport operators, in whatever mode, getting information to new and potential customers can be difficult. Marketing and business development is often focused on existing routes and/or current customers, rather than developing genuinely new business. Potential customers often need to get in touch with service providers themselves. Further details of this sort of corporate behaviour can be found in the report: 'Wales and the Atlantic Arc: Developing Ports' (WTRC 2006).

There are agencies which can help with general or mode-specific marketing and information distribution, such as the Rail Freight Group. However, providing targeted information is difficult as, for example in the rail industry, a complex and generally bespoke set of agreements is needed to ensure provision of locomotive and wagons, train paths, and terminal facilities and handling at either end of a journey. All of these can affect the price, which is the key factor in decision-making. Rail freight operators carry out their own marketing activities, typically focussed on commodity categories such as coal or steel, rather than in a specific geographic area such as Wales.

There is scope for better information provision on the sorts of facilities and services for all freight transport services, but the deciding factor of price is likely to remain individually negotiated.

Logistics approach and distribution networks

As many companies have sought to reduce their storage and inventory levels, as well as transport costs, there has been a trend towards an 'end-to-end' approach, using logistics companies to manage the

inventory from component elements to final delivery. This has led to changes in industry structure with some companies previously specialising in a single mode becoming multi-modal logistics specialists, as they seek to make the most efficient use of all options available to them, particularly if large-scale trunk hauls are required. It has also meant that distribution networks develop on the basis of organisations, rather than commodities. For example the major retailers now have sophisticated supply chains to keep shelves full of the variety of commodities sold, often using distribution centres as central storage points. Whilst superficially there may be some additional tonne-km using centralised depots, the ability to manage the whole supply chain has generally led to overall efficiencies.

For so called 'just-in-time' supply systems, reliability and robustness throughout the whole supply chain is vital. Within a distribution network, modal choice becomes a multi-dimensional issue and the need to consistently supply a number of outlets can mean road haulage, typically the most flexible option, tends to dominate.

Resilience is also seen as important. Rail for example, can be seen as inflexible, with largely fixed timetable paths and a limited number of alternative routes in the event of network disruption, although UK rail freight reliability is generally good. However, the range of options available in response to a problem on the road network are significantly greater than those available on rail or sea. With road freight the smaller unit load per vehicle also means that an individual breakdown is likely to affect only one small part of the distribution, whereas other modes put much greater volume in a single movement unit.

There has however been a move away from hub and spoke operations using few, but very large, distribution centres particularly in the retail business. This is likely to continue

as pressures on the transport network, driver availability and changes in wider distribution systems occur.

The mechanism that this potential change in the distribution model could deliver is a move towards regional consolidation centres, feeding more 'local' distribution networks. This in turn could introduce opportunities to develop local sources of goods, delivered to the nearest centre for onward transmission through its network. In addition, movements between distribution centres are more likely to be practical by rail, though increasing the number of centres should not ideally increase the amount of trunk movement required.

Local Supply Chains – examples of the development of local supply chains reducing the need to transport goods long distances include Jaguar in Liverpool, which achieves just in time deliveries by encouraging co-location of suppliers 'across the fence'. This improves efficiency and strengthens particular industrial clusters. Another example is at the Hawarden Business Park in Flintshire, where suppliers can co-locate with Airbus at Broughton.

International trade

Creating a more robust and reliable logistics network (both in terms of the physical linkages and information flows required) will help to increase the competitiveness of existing Welsh industries, as well as to make inward investment opportunities more attractive. For example, improved links with deep sea shipping operations, perhaps via short-sea shipping through Welsh ports to hub ports such as Southampton or Le Havre) would bring Wales itself closer to main trade routes and offer new trade opportunities to Welsh businesses. Promoting this will also be important.

The eastwards shift of the so-called 'blue banana' (the area of the European Union with the highest GDP per head) and the recent entry of geographically near member states with low labour costs (such as Poland and Lithuania), means that existing peripheral nations such as Wales will seek to partly balance those lower labour costs with efficient freight operations, making an efficient and effective international freight network even more important. Particularly as, if the costs of freight movements change (up or down), there would be an impact on the producer as well as the mode to be used.



A specific tool that could be considered to enhance international trade opportunities are 'Free Zones'. These are designated areas for processing goods in which non-EU goods are treated as being outside the customs territory of the EU, which means that import duties are not due, provided the goods are not released for free circulation. Import VAT is also suspended until the goods are removed to the UK/EU market or used or consumed within the Free Zone.

There are a number of potential benefits that could result from such international changes:

Social – protecting and increasing investment in Wales should bring jobs to Wales; in addition there would be corresponding increases in port operations, logistics and haulage within the Welsh economy.



Economic – protecting and attracting business should encourage a rise in GDP per head. Changes that re-focus (short-sea) shipping to Welsh ports, even though the destination or source of the goods may not always be in Wales, would increase the freight transport industry's contribution to this.

Environmental – maximising the use of environmentally more efficient modes in developing an efficient international freight network should provide environmental benefits. However, as there could be more freight movement within Wales, there is a potential local environmental disbenefit, albeit with commensurate reductions in traffic and consequent benefits elsewhere.

Waste

A number of EU directives and other international treaties deal with waste. Prominent among these are the WEEE directive (discussed earlier) and the management of end-of-life vehicles. These initiatives seek to prevent waste from end-of-life electrical products and vehicles respectively, and to promote the collection, re-use and recycling of their components. The Sustainable Transport Resources and Waste Report (STRAW, May 2006) identifies a need for the whole life of all products to be considered in sourcing and production, with a linked waste and recycling system, making use of the most environmentally friendly freight transport available. The Welsh Assembly Government has a 40% recycling/composting target for local authorities to reach by 2009/10.

In effect, these and other initiatives are already placing different, and more complex, demands on the freight transport industry. While transport of waste is clearly part of the freight transport industry, it has typically in the past been carried out by specific waste-related transport organisations and vehicles, not least municipal refuse operations. However, these are typically geared to

collection and disposal of waste within local areas, often in land-fill or incineration, though with increasing amounts being recycled. This greater emphasis on re-cycling is leading in turn to a requirement to sort waste, and transport it to appropriate destinations, often further away than the more local disposal facilities.

While this is important element of re-cycling, the 'product' is of intrinsically low value has a low time imperative. On one level this makes it an unattractive prospect as a commodity to transport, but also supports development of opportunities for the carriage of waste by more sustainable modes, in particular through promotion of rail and water transfer terminals. An example of efficiency in transporting waste includes utilising the cheap transport available in vehicles (be it containers, rail wagons, ships or trucks) returning after delivery of goods.

Corporate social responsibility

Corporate social responsibility represents a key business contribution to sustainable development goals, which both the Welsh Assembly Government and the UK government see as important contributions that businesses can make.

Essentially, corporate social responsibility is about how business takes account of the economic, social and environmental impacts in the way it operates – maximising the benefits and minimising the downsides. Specifically, this relates to the voluntary actions that business can take, over and above compliance with minimum legal requirements, to address both its own competitive interests and the interests of wider society.

However, it is worth noting that in the context of freight transport, corporate social responsibility not only includes the specific effects of the industry itself (such as on its own people, wider society and

the environment) but also in procurement decisions made by the users of freight. Increasing emphasis on corporate social responsibility is likely to have an effect to encourage businesses to question procurement decisions in the widest context, including sources of goods and freight transport, as well as those of its suppliers and contractors.

The concept of corporate social responsibility runs as a thread through this strategy, suggesting that the procurers of freight should consider the consequent effects of their decisions on others, not least the effect that transporting their goods will have.

3.3 People in Freight Transport



Trends and developments

The logistics industry in Wales contains many small firms, of which around 50% are road haulage companies, with some 85% having less than 10 employees. There has been a trend in recent years towards larger companies, and some 66% of the workforce is now actually employed by organisations with over 50 employees (Skills for Logistics). This is in sharp contrast to Ireland, where a large number of small owner/operator road haulage companies still remain.

A number of employment and worker trends are common across all the freight transport modes:

- In some areas there are shortages of qualified staff. This is often for skills where an individual can be expected to finance their own training and qualification, such as (for example) goods vehicle driving, rather than train driving where staff are trained by their employer.
- Safety rules governing working time and hours have existed in the rail industry for many years. These have now been

extended to all areas of work through the European Working Time Directive, which has had particular effect on working practices in road haulage. In some instances this has led to an increase in staff numbers required.

- Pressure on costs has led to an increase in flexible employment contracts, for example based on a number of annual hours. These allow staffing levels to be adjusted to seasonal and short term variations in traffic without needing a permanent staff to cover peak levels.
- Flexible working and multi-skilling are increasingly common and have enabled efficiency savings to be made as well as in some instances providing job enrichment. For example, train drivers undertake duties on freight trains that were traditionally the responsibility of the shunter or guard, and dock stevedores can be transferred from port to port to meet work requirements.
- Low skilled jobs have disappeared as equipment and technology, such as cranes and computer tracking systems, have reduced the need for staff in terminals and changed the job requirements of those employed today.

Many freight infrastructure and service operators in Wales have indicated they experience problems recruiting and retaining suitably-skilled workers. This is experienced across the whole of the logistics industry to a greater or lesser extent.

This has resulted in, and indeed is also exacerbated by, an unrepresentative workforce. For instance, only 17% of those employed in the freight logistics industry in Wales are women, where workers are overwhelmingly male, white and have European ethnic origin. The workforce also has an increasingly ageing profile. In 2006 an estimated 33% of goods vehicle drivers in Wales were aged over 55, with only 9% being under 25. In addition, the number



of younger people entering the logistics workforce is disproportionately low in comparison with other Welsh industries.

While a shortage of recruits is well documented, more recent research has revealed that a major reason for this is the poor image that can be projected by the industry. Much of this is to do with working conditions, such as pay, long and generally inflexible working hours, shift patterns, stress factors, working environment and career prospects. In addition, role models for the industry depicted in the press and wider media are often stereotypical and negative. There are also problems at management levels in logistics industries, which have been linked to limited and inconsistent progression opportunities into management roles, limited success in attracting graduates into logistics and specific skills gaps among junior and middle managers.

Skills for Logistics

To help address these problems, 'Skills for Logistics' has been given the remit to represent the skills needs of freight logistics industries and companies involved in the moving, handling or storing of goods – covering freight transport by rail, road, air, sea and inland waterway. Skills for Logistics is the 'Sector Skills Council' for logistics industries, one of 25 similar organisations in the UK that seek to reduce skills gaps and shortages, improve productivity and increase opportunities to boost the skills and productivity of everyone in the workforce. Skills for Logistics' specific remit is to:

- Identify and address the skills and training needs of all companies involved in logistics;
- Present the development needs of employers to government and its agencies;
- Present the development needs of employers to the training supply industry in order to maximise the relevance of

training programmes;

- Design qualifications in response to the industry's needs;
- Collaborate with other industry bodies and other Sector Skills Councils;
- Raise the standards of training within the sector; and
- Improve the industry image to attract an increased and diversified workforce.

Research by Skills for Logistics demonstrated a need for the freight logistics industry to move away from typical current practices of ad hoc training, largely targeted at meeting statutory or regulatory compliance needs, to systematic and continuing professional development (CPD) for all staff. This has been demonstrated in the 'Professional Development Stairway', which it is intended will act as a potential careers path for everybody that works in the industry. (For more details of the 'stairway' concept see www.thestairway.org).

Skills for Logistics has prepared a Logistics Skills Agreement to reshape the supply of training to the industry to better meet its needs, by ensuring it is both relevant to the needs of the industry and has a consistency of provision and availability, and to ensure that it deals with specific problems and issues identified in the freight transport industry workforce. Agreements are being implemented region-by-region across the UK, including one for Wales. (for more information see www.skillsforlogistics.org)

The key issues addressed by the Logistics Skills Agreement include:

- Poor image of the logistics sector;
- Unrepresentative labour force;
- Deficiencies in basic skills;
- Skills gaps such as progression from operatives into management and poor operational management skills;
- Recognition of the business case for training; and
- Quality of training supply.

The Logistics Skills Agreement has three Strategic Objectives in Wales; these are to:

- (1) Ensure that 'The Stairway' is considered to be the framework on which careers planning, manpower planning, CPD, qualifications, training programmes, funding and public policy are based.
- (2) Develop an effective and responsive training supply industry which delivers programmes that are relevant and consistent across Wales, helping to make CPD support available to companies of all sizes.
- (3) Move logistics towards being a sector with a professional image, that people want to work in and stay working in and is seen as modern, progressive, attractive and central to the economic health of Wales.

To this end, it has been identified that logistics employers would benefit from a 'one-stop-shop' through which high quality relevant and consistent training can be sought and delivered; it is proposed that this be achieved through the development of a Logistics Skills Academy for Wales.

3.4 Key Growth Areas



Growth in container traffic

There has been significant recent growth in container traffic entering the UK, with an increase of some 16% in unitised cargo tonnage from 1997 to 2004 (including containers carried individually or on road trailers). Note though that the weights of individual units have fallen, resulting in an over 30% rise in the number of actual units carried over the same period.

Use of containers is projected to increase further over the next 10-20 years. Much of the growth is in goods produced in the Far East and brought to Europe by sea. There has also long been a trend towards increasing

containers sizes (so-called 'hi-cube' 9ft 6in tall containers) and larger ships. Ship sizes have had a concentration effect, with container liner shipping vessels sometimes only serving the major European container ports (such as Rotterdam and Felixstowe), which in turn serve an increasing proportion of all movements.

Within the UK, container shipping is concentrated at ports in South East England. Felixstowe alone deals with over 35% of all container movements in the UK; throughput at Welsh ports accounts for less than 1% of the UK total. Hence containers associated with Welsh industry typically enter Wales by road (with a few by rail), either direct from the port, or from a distribution centre in England.

Transporting the increasing number of hi-cube containers by rail can be a problem, as they do not fit within loading gauges on many existing lines when carried on standard deck-height wagons, including routes to/from Wales. Some routes are being modified to increase loading gauges, such as Felixstowe to the West Coast Main Line and destinations in the Midlands of England and Scotland. Alternatively, wagons are available with lower loading decks (and smaller wheels) that can carry hi-cube containers within conventional loading gauge. A limited number of containers reach Wales using these wagons. As rail routes elsewhere are modified, more of these wagons may become available for use on a wider range of unmodified routes, such as those to/from Wales.

Food and drink – 'food miles' and the battle between year-round & seasonal

Another trend of recent years is the increase in freight associated with food and drink, which currently represent some 30% of all goods moved (tonne-km) into Wales. A large proportion of this increase relates to



perishable goods, particularly as consumers are increasingly said to want a year round supply of a full range of fresh produce, regardless of local seasonality. For example, strawberries, grapes and green beans are now available every day of the year, from suppliers in places as diverse as South America, India and Kenya. A generation ago these were either confined to the summer growing season in the UK and Europe or preserved using freezing or canning.

It is also worth considering though that out of season supply is not just met using transport. Options can include artificially extended growing seasons using heated greenhouses, long-term cold storage and long-distance transport, as well as combinations of all three. Energy-use profiles will therefore vary according to choices made and product needs. In some cases this will actually favour (even long-distance) transport. In all cases though, it is apposite to note that out of season supply can only be met through greater use of energy than accepting seasonal availability only.

Consumer awareness of issues such as 'food miles' (the distance their food has travelled to reach them) is growing, and could ultimately affect retailers' responses. For instance, direct purchase by consumers from local suppliers at farm shops and local 'green markets' is available and popular in some places, and major supermarket chains often advertise when they are able to source produce or goods locally. However, in this respect reducing 'food-miles' can be compared with the growth in organic food products. Although there may be an increase in the supply of 'local' produce, such foods tend to be more expensive and (if so) can remain a niche market, with mass-market consumers preferring the predictability and (typically) cheaper supply that comes from a global approach to product sourcing.

Retailers can also continue to offer both 'premium' and 'budget' lines to customers.

Notwithstanding this, changes in distribution patterns outlined earlier that could result in more localised distribution systems being developed will if anything make it easier to 'localise' the sources of many products, particularly food. What would thus be required alongside this would be marketing initiatives to raise consumer awareness as well as to encourage the private sector to source locally.

There is also increasing use being made by consumers of internet shopping, which can improve access to cheap goods for those without access to a private car. However there is a resultant increase in delivery vans bringing the goods to people's homes.

3.5 Impacts and Outcomes



Social

Appropriate use of the various transport modes can have impacts on employment, although the numbers concerned are generally low. Inter-modal terminals employ small numbers of people although intensive operation can increase this number. There are shortages of trained staff such as goods vehicle drivers in some areas but it is likely that this is a temporary situation. When planning freight terminals, access for employees should be considered – it is not just access for the freight vehicles themselves that is relevant.

A rebalancing between the modes with greater use of sea or rail for long haul may marginally improve road safety.

Locally sourced produce has the potential to be fresher and more nutritionally sound, and can help in understanding of the role of

regional agriculture within Wales. Increased local sourcing can also help support jobs in the local economy, as well as in locally transporting the goods. For example, an emphasis on local sourcing could encourage community businesses to be developed to look at supply and distribution of local products. Another role for community businesses could be in considering the transport and processing associated with re-cycling.

Economic

The role of price in freight transport decisions must not be underplayed. As freight modal choice is generally price based, there needs to be consideration of financial rebalancing through positive measures such as revenue or capital grants to ensure that the most socially or environmentally acceptable methods of transport do not simply disadvantage freight users in Wales, to the extent that the economy is itself affected. Note that restriction measures such as parking charges or lorry bans at certain times may also have an impact on modal choice.

Careful planning of inter-modal interchange and links between the various modal networks can support economic development. Trends such as increasing levels of freight travelling from outside Wales need to be understood. In some instances planning authorities may wish to become involved in what are currently largely private sector decisions such as the location of distribution centres in or for Wales. It is important to seek a balance between the modes, not the pursuit of just one at the cost of another. Note that the inter-relationship between transport networks and the economies of Wales and England can have a distorting effect, with transport employment being based in England but delivery to areas in Wales, and vice versa.

The difficulty in obtaining information on freight transport options can mean that the overall 'best' decision is not always taken as social or environmental issues are ignored and prices from alternative transport providers may not be sought. There is a need to work with the distributors of major flows, such as food and drink, to understand their plans for future development as well as how they might be influenced.

Environmental

Improved connections between modes can allow use to be made of more sustainable transport where appropriate – such as rail for long distance haulage, connecting with road for local and regional distribution. If modes are not well integrated there is a risk that road, as the more flexible option, is always chosen for the full end-to-end journey. There can be local concerns about large trucks using rural roads through small villages, often decried as unsuitable but sometimes with no alternatives. More regionally focused distribution arrangements may reduce this, for example allowing loads to be transferred to smaller vehicles for final distribution.

In planning new developments, freight access and options for the potential use of different modes should be considered, as well as consequent transfer requirements between modes. If road is the best (or only) option for the first or last part of a journey this should not preclude the use of other modes to carry goods for perhaps a substantial part of the journey, and the development of inter-modal terminals and distribution centres needs to reflect this.

An increase in the volume of international freight by sea or air may require enhanced provisions at ports and airports to ensure the requirements of the 2005 World Health Organisation (WHO) International Health Regulations (as they apply to ports/airports)



are met and public health is protected. It is acknowledged that if freight items pose limited contamination risk and/or come from areas that have strict public health arrangements, then there would be a limited impact of increasing freight to Wales from a public health point of view.

Any new freight-related developments should be designed to the highest environmental standards and use more sustainable materials. In addition, efforts should be made to consider, and where possible enhance, habitats and diversity.

Addressing climate change, both in terms of its potential effects on freight transport and the affect of freight transport on it is another key environmental issue to be considered.

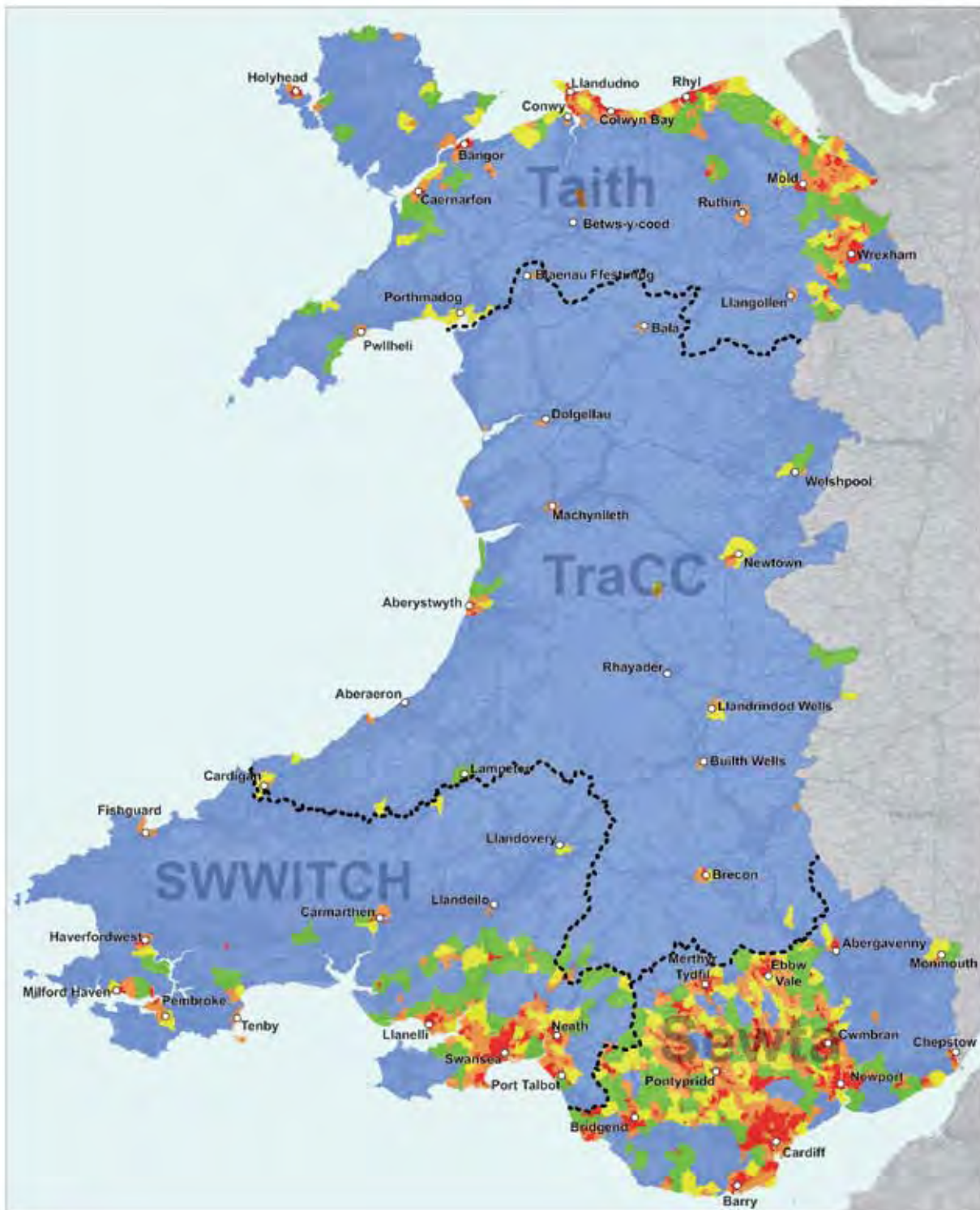
3.6 Steps Towards Delivery



Suggested 'steps towards delivery' that relate to wider issues that cut across more than one mode of freight transport include the following. These are related back to the hierarchy themes of the strategy as indicated – Spatial, Mode Split (MS) & Making Best Use (MBU):

SI1	Overall, promote policies that support the transport of freight in the most environmentally sustainable manner, and in particular encouraging freight to transfer from road to rail and water-borne transport wherever practical.	MS
SI2	Encourage an integrated multi-modal approach to regional freight transport planning that seeks to achieve a sustainable balance between environmental and economic operational objectives.	MS MBU
SI3	There is scope to review the current system of freight grants with a view to increasing availability of subsidies that encourage modal shift to rail and sea transport. This review could consider the relevance of both revenue and capital grants. This review could also consider the results from previously awarded grants with a view to identifying best practice.	MS
SI4	Land-use policy should take into account, and where necessary adapt, to ensure that opportunities for promoting environmentally sustainable freight facilities are protected (in particular rail and water-borne freight). This should be reflected through ongoing consideration of freight transport the Wales Spatial Plan (WSP) and Local Development Plans (LDPs).	Spatial
SI5	Consider the potential for developing inter-modal freight interchanges in Wales to facilitate and stimulate easier modal shift to more sustainable modes, in particular road to rail and road/rail to sea interchanges.	MS
SI6	In future investment and planning decisions about the rail infrastructure in Wales there may be a need to rebalance the focus and planning horizons between freight and passenger traffic to ensure that freight is accorded an appropriate priority. This should include renewals, and maintenance planning as well as longer term network developments.	Spatial MS MBU
SI7	The future development of ports and airports in Wales should be pursued for the overall sustainability of transport rather than looking at modes in isolation.	MBU
SI8	Develop a greater understanding of the patterns of demand for the movement of goods and the role of freight transport in Wales, to assist in targeting and planning for requirements/opportunities afforded by changing market-driven demands. This requires research into the activities of businesses and freight movers in and related to Wales, in particular evolving distribution patterns and the use of container and pallet-based networks and systems. This should also include consideration of the current and potential future movement of waste. The research in this 'step' also relates to a number of mode-specific suggestions.	Spatial

SI9	Related to this, there is a requirement for identification of suitable data sources to be monitored and subsequent collation of statistics.	Spatial
SI10	There also needs to be a greater understanding of the current and likely future role of distribution centres, including those in England, and freight transport in Wales. This could lead to the investigation of opportunities for additional distribution centres within Wales which could also generate related employment opportunities. This should be taken forward by working with the major retailers where possible, to understand their predicted future requirements.	Spatial
SI11	Consider the potential future impacts on freight movements by all modes, as a result of charging on the road network, including congestion charging, time/distance-base charging and specific charging (such as local tolling).	Spatial MS MBU
SI12	There are opportunities for joint work between national, regional and local authorities and the private sector to encourage more sourcing and consumption of locally sourced produce, particularly where this has the potential to reduce the distance travelled by freight and generate jobs. This could be linked to developments in the tourism sector.	Spatial
SI13	Options for the development and promotion of a 'Freight Direct' information service for Wales could be explored. This service could provide information on alternative journey options, and give information on how to go about sending goods by rail or sea. It is acknowledged that commercial sensitivity will have to be taken into account, and any resulting service set up accordingly.	MS MBU
SI14	Maintain appropriate stakeholder partnerships, such as the well-established Wales Freight Group, and seek to develop new partnerships where appropriate. Freight Quality Partnerships (FQPs) can be considered at a variety of different levels.	MBU
SI15	Different areas of Wales will benefit from different types and scales of ideas and solutions. For instance, a key difference may be apparent between rural and urban freight issues, where comparatively small-scale rural projects could provide locally very significant benefits to a rural economy and communities.	Spatial MBU
SI16	Implementation of the Sector Skills Agreement for Skills for Logistics, to reshape the supply of training to the industry to better meet the needs of logistics employers, by ensuring it is both relevant to the needs of the industry and consistently provided and available.	Spatial MBU
SI17	Consider the way that the freight transport industry and networks are affecting and will be affected climate change. As a key part of a continuing economy, climate proofing of the wider transport networks will be important, particularly in coastal areas, but the specific needs of freight should be addressed.	Spatial MBU
SI18	Consider seeking to expand the Welsh Assembly Government's powers relating to freight transport. In particular, relating to the rail network and ports	MS MBU



People per Hectare (2001 census)



Figure 3.1 Population Density



Regional Transport Consortia

- SEWTA
- SWWITCH
- TraCC
- Taith

Main Roads

- Motorways
- Trunk 'A' Roads
- Other 'A' Roads
- 'B' Roads
- Trans-European Transport Network (TEN-T) Roads

Figure 3.2 Road Network



Regional Transport Consortia

- SEWTA
- SWWITCH
- TraCC
- Taith

Railways

- Passenger routes
- Freight only
- Stations
- Key rail link to/from Wales
- Trans-European Transport Network (TEN-T) Rail

Figure 3.3 Rail Network



Regional Transport Consortia

- SEWTA
- SWWITCH
- Taith
- TraCC

- Port
- Car Ferry

- International Airport
- Other Airports/Airfields
- Heliport

Figure 3.4 Ports and Airports



Chapter 4: Road Freight

Strengths

- Most flexible freight mode, with greatest geographical coverage
- Good motorway and trunk road network in North & South Wales that is mostly free flowing
- Comprehensive highway authority road network offering high service standards of access and flexibility compared to other modes
- Good supply of road hauliers

Weaknesses

- Significant traffic congestion in key locations on the strategic and local road network
- Rural road network is not always well-suited to freight movement
- Lack of co-ordinated and comprehensive signing for freight-specific locations
- Current provision of lorry parks and drivers' rest areas is patchy, and quality is mixed
- Road freight has previously failed to secure adequate consideration in local transport planning
- CO₂ emissions and other environmental impacts greater than other surface modes
- Significant skills shortages in the road freight industry
- Can be a lack of take up of initiatives to improve the industry

Opportunities

- Working time directives may force a re-examination of current supply chains
- A co-ordinated approach to the 'freight road network' across boundaries
- Better traffic information for freight vehicles
- Consistent air quality action plans
- Partnerships delivering solutions
- Consider priority for goods vehicles
- Better coordination and take-up of national government initiatives
- Consistent national policy for lorry parking
- Dissemination and uptake of operational and environmental best practice

Threats

- Continued driver shortage and a lack of other skilled staff
- Growth in use of foreign registered vehicles – especially if operating standards are not followed
- Poor goods routeing practice leading to disturbance and excessive road wear
- Increased indiscriminate goods vehicle parking
- Air Quality Management Areas that could require goods vehicle restrictions
- Increasing number of timed delivery restrictions decreasing road freight efficiency
- Increased pressure on capacity of motorway/trunk road network
- Impact of road user charging and other forms of demand management, in particular a lack of clarity over future potential road charging mechanisms and timescales
- Rising cost of fuel

4.1 Background



Road transport dominates the movement of freight, accounting for some 83% of goods lifted and 64% of goods moved in Wales in 2005. However, whereas these statistics convey the significant role that road-based freight transport plays overall, they fail to indicate the importance that lorries and vans play in the overall supply of goods, in particular at the ‘human’ scale of goods being provided to people. In a similar way that walking forms part of virtually every passenger trip, road-based freight transport is responsible for at least part of the supply chain of virtually all foodstuffs, industrial and consumer goods, and waste.

The story of freight over the last 50 years is mostly related to the rise in the importance of road freight to modern economies, to the extent that transporting goods has reached a point where it is seen as part of the production process. This has primarily been possible as a result of the inherent flexibility of road freight, in turn aided by continuing development of road networks. This has also been assisted by vehicle technology advances, and in particular in recent years of enhancements to heavy goods vehicles (with a gross weight of over 3.5 tonnes) and light vans. It is important to note though that whereas there has clearly been a shift away from (for example) railways for many goods, a significant amount of road-based freight in the modern era simply did not exist as ‘freight’ beforehand.

4.2 Current Situation



Movements

Around 63 million tonnes of freight were transported by road between places within Wales in 2006, with a further 57 million tonnes moving between Wales and other parts of the UK, and some 1.2 million

tonnes to/from places outside the UK. Road freight originating in Wales generated almost 7 billion tonne kilometres of freight movements. Also important is the transit of freight to/from Ireland, though this is a comparatively small amount within the overall figures, with around 2 million tonnes in UK and Irish registered trucks using ferries at the Welsh ports.

The amount of road freight (tonnes lifted) to and from Wales has increased over the period 1990-2006. Goods imported to Wales from elsewhere in the UK rose by over 30%, and doubled from outside the UK. Exports to the rest of the UK have risen by 7%, and internationally by 43%. However, the amount of road freight wholly within Wales declined by around 9% over the same period. There is also comparatively little freight between North/Mid and South Wales; only some 5% of the total freight lifted in South Wales is destined for locations in Mid and North Wales, and less than 3% of freight arriving in South Wales originates in Mid and North Wales.

An origin-destination matrix of road freight (goods lifted in 2006) is shown in Table 4.1, highlighting movements to/from and within areas of Wales, along with typical commodities carried in Table 4.2 (goods lifted and goods moved in 2006).

‘Crude & manufactured minerals and building materials’ is the single largest category of goods recorded, accounting for almost 40% of all goods lifted in Wales. These are indicative of ‘heavier’ commodities that tend to travel shorter distances, and as such this category accounts for just over 13% of goods imported into Wales. The largest single category of road-based freight imported into Wales is ‘food, drink and tobacco’, which is most representative of the amount of road freight transport that is inherent in supermarket and other retailers’ distribution systems.



	Bridgend & Neath Port Talbot	Cardiff & Vale of Glamorgan	Central Valleys	Conwy & Denbighshire	Flintshire & Wrexham	Gwent Valleys	Gwynedd	Isle of Anglesey	Monmouthshire & Newport	Powys	South West Wales	Swansea	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorkshire & the Humber	Scotland	Total
Bridgend & Neath Port Talbot	5,184	518	169	-	-	-	70	15	-	1,153	61	742	1,370	4	27	8	-	93	213	299	776	77	-10,779
Cardiff & Vale of Glamorgan	817	7,171	397	-	19	360	-	-	-	1,212	9	102	52	66	104	90	27	178	636	399	338	21	117,113
Central Valleys	125	481	3,406	-	59	388	-	-	-	254	47	98	86	72	157	138	3	36	134	375	129	128	3 6,119
Conwy & Denbighshire	-	-	-	3,266	236	6	55	175	-	-	23	5	-	79	36	-	18	772	5	19	126	18	- 4,840
Flintshire & Wrexham	104	-	44	565	5,523	63	80	203	-	63	64	45	41	452	103	51	127	5,151	260	171	1,991	809	5615,965
Gwent Valleys	139	127	187	-	37	2,549	-	-	-	282	101	46	50	127	105	41	8	164	219	595	314	103	19 5,212
Gwynedd	-	9	-	40	15	-	1,120	30	-	-	32	22	-	8	34	-	-	111	-	-	94	26	6 1,549
Isle of Anglesey	-	-	-	108	74	-	236	766	-	-	-	1	17	39	26	19	-	412	7	16	31	-	13 1,765
Monmouthshire & Newport	541	856	535	-	19	911	-	-	-	3,813	105	253	183	322	393	127	27	290	715	2,118	1,060	190	-12,456
Powys	43	89	9	21	247	19	18	30	69	1,375	150	54	54	14	143	26	-	242	91	242	1,527	-	- 4,410
South West Wales	396	147	80	8	295	143	8	12	66	621	8,049	671	671	42	162	37	1	96	146	492	438	56	3111,996
Swansea	362	170	107	-	71	33	-	-	-	104	19	508	1,069	22	19	9	41	32	39	209	153	2	- 2,967
East Midlands	179	345	70	40	376	133	19	28	663	136	125	42	42	-	-	-	-	-	-	-	-	-	2,156
East of England	15	246	324	53	228	296	28	-	819	57	82	75	75	-	-	-	-	-	-	-	-	-	2,222
London	33	197	22	-	23	15	-	16	186	-	3	48	48	-	-	-	-	-	-	-	-	-	544
North East	-	-	15	20	158	77	3	46	26	-	-	48	1	-	-	-	-	-	-	-	-	-	394
North West	3	134	73	1,071	3,798	30	680	257	456	676	420	40	40	-	-	-	-	-	-	-	-	-	7,639
South East	155	382	45	3	299	185	5	42	493	65	116	51	51	-	-	-	-	-	-	-	-	-	1,842
South West	772	1,144	216	-	235	694	30	13	2,215	84	958	263	263	-	-	-	-	-	-	-	-	-	6,625
West Midlands	471	1,153	359	101	1,156	453	142	182	751	631	229	315	315	-	-	-	-	-	-	-	-	-	5,943
Yorkshire & the Humber	19	37	59	105	733	90	93	91	421	112	69	117	117	-	-	-	-	-	-	-	-	-	1,948
Scotland	-	8	-	45	271	48	8	-	187	17	7	-	-	-	-	-	-	-	-	-	-	-	591
Total	9,357	13,217	6,116	5,447	13,873	6,563	2,540	1,890	13,233	4,234	12,079	4,545	1,247	1,308	545	252	7,576	2,464	4,935	6,976	1,431	245	

Table 4.1 Road Freight lifted to/from and within Wales
(GB registered vehicles, '000s Tonnes lifted,
DfT Continuing Survey of Road Goods Transport, 2006)

2006	within Wales		from Wales		to Wales	
	Lifted ('000t)	Moved (m t-km)	Lifted ('000t)	Moved (m t-km)	Lifted ('000t)	Moved (m t-km)
Agricultural products	2.1	147	1.8	246	3.3	567
Beverages	0.2	17	0.8	171	0.9	184
Other foodstuffs	3.9	278	4.3	684	4.3	749
Wood, timber and cork	2.5	232	0.8	130	0.9	286
Fertiliser	0.1	8	0.4	36	0.1	28
Sand, gravel and clay	4.8	112	0.7	42	0.2	31
Other crude minerals	16.8	421	3.9	383	1.5	214
Ores	0.5	14	0.2	47	0.7	140
Crude materials	0.5	40	0.3	59	0.6	171
Coal and coke	0.4	28	0.2	73	0.0	0
Petrol and petroleum products	1.4	85	0.3	52	2.7	284
Chemicals	0.8	63	1.0	268	1.0	174
Cements	2.7	57	1.6	113	0.7	93
Other building materials	4.1	162	0.7	156	1.6	352
Iron and steel products	4.1	173	2.0	484	1.3	319
Other metal products	0.7	33	0.4	75	0.4	81
Machinery and transport equipment	2.2	118	1.4	270	1.5	353
Miscellaneous manufactures	2.7	116	2.7	524	2.5	569
Miscellaneous articles	12.6	391	3.7	726	5.7	1,004
Total	63.2	2,496	27.0	4,538	29.9	5,598

Table 4.2 Road Freight Commodities

Data taken from DfT's 2006 Continuing Survey of Road Goods Transport (CSRG T) thousand tonnes lifted, million tonne-km moved

Growth in goods vehicle traffic in recent years has been driven by increased use of larger articulated vehicles and light vans. Volumes of other types of goods vehicle have been steady or falling.

Networks

There is no formally designated lorry route network within Wales, other than the trunk road network and the Trans-European Networks (TEN-T) designated by the EU. The extent of the trunk and TEN-T road networks in Wales can be seen on Figure 3.2.

4.3 Road freight interacting with other modes



Road vehicles are utilised in transporting at least part of the supply chain of virtually all goods, even if some elements of the chain involve shipping or rail, as use of road vehicles offers a degree of network coverage and flexibility of response to demands that other modes can seldom match.

As such, while it is desirable to seek alternatives to using road vehicles, particularly where distances and/or commodity flows could require significant numbers of vehicles, it is still generally the case that road vehicles play a role in part of the journey.



4.4 Future Prospects



The road freight industry is constantly evolving to meet the challenges presented to it by its customers. There are thus many opportunities and prospects for positive change, including opportunities both to deal with existing problems and issues, and seeking to develop new initiatives.

Patterns of movement of road freight are driven by a number of factors, simplistically in the first instance to match the requirements of customers, but moreover to provide logistics in as efficient a way as possible. As such the locations of depots and distribution centres, and even production sites, have evolved and developed to service requirements within operational regulations. Although initial indications are that revisions to working time directives relating to the transport industry have not had as significant an effect as could have been observed, it is still likely that they could force a re-examination of current supply chain patterns in the longer term, especially when set alongside other considerations such as traffic congestion, fuel prices and possible future distance-based charging.

Better traffic information for freight vehicles is becoming available, and development of a co-ordinated approach to what constitutes the 'freight road network' (in particular across jurisdictional boundaries) will assist in advising road hauliers of the most appropriate routes to use, in planning and making a journey. Related to this, priority routes for goods vehicles could also be considered and developed. This can help operators' efficiency within an evolving regulatory framework and tackle sometimes inappropriate network usage by goods vehicles, which can be a contentious issue with members of the public. For example, the Vale of Glamorgan Council is trialling signage to prevent use of inappropriate roads by large vehicles caused by drivers following

instructions from satellite navigation systems that do not contain restrictions for such vehicles. Systems are also evolving to include details of restrictions.

Tesco return loading – an example of logistics efficiency to reduce unproductive and empty running is 'supplier collection', which involves Tesco vehicles travelling from regional distribution centres (RDCs) to stores, making a delivery, and then travelling onto suppliers to collect a primary load before returning. Related to this, 'onward delivery' involves vehicles operated by suppliers or third parties that used to deliver goods to the RDC and return empty. With 'onward delivery', these vehicles can be used to take goods from the RDC to stores near to the supplier's depot.

There have been a number of initiatives to improve the specific environmental impact of road freight vehicles, ranging from compulsory European directives on engine emissions to voluntary participation initiatives. However, consistency of approach between initiatives is not always clear, and take-up by the industry can also be patchy. Better coordination and take-up of such initiatives, as well as dissemination and uptake of operational and environmental best practice, presents the industry with a clear opportunity to generate improvements over the longer term. Alternative propulsion (such as gas, hydrogen and hybrid power) also has the potential to generate improvements.

The road freight industry is well suited for making use of partnerships in seeking and delivering solutions, particularly given its comprehensive geographical coverage and the sometimes disparate nature of the industry. A key issue that partnerships could be well-suited to consider includes consistency of approach, such as policies related to routeing and lorry parking

facilities (the latter identified as a weakness in many areas) and in outlining and dealing with air quality action plans (in particular where they pertain to road freight), as well as in dealing with other local impacts such as noise and fuel spills.

Freight Best Practice – The Freight Best Practice programme promotes operational efficiency and disseminates best practice to freight operators. It was initially set up in England by the DfT, and has subsequently been extended to cover Wales by the Welsh Assembly Government. Freight Best Practice publishes information free of charge through its website www.freightbestpractice.org.uk. The programme aims to help the industry to reduce fuel use, develop staff skills, select and use the best equipment and systems and measure, monitor and achieve targets for operational performance. For example, specific initiatives have considered the effects of aerodynamics on fuel consumption and a benchmarking system for hauliers to compare their operations with industry averages.

4.5 Impacts and Outcomes



Social

‘Connecting the nation’ seeks to improve access to life opportunities. These outcomes are focused on people, and do not directly relate to freight transport, but there is a need to support the opportunities and facilities involved, in which road freight transport in particular plays a part. There may be circumstances where the road freight industry, as a potential employer, can also play a part in improving opportunities for employment in key areas of need.

Public health effects of freight transport are limited, but can be specific where there are air quality issues related to road traffic. In addition, the health and welfare of workers in the industry can be improved through skills initiatives.

There are safety impacts associated with road freight, as with any form of transport. Nevertheless, goods vehicles have much lower accident involvement rates than cars. When all personal injury accidents are considered the heaviest goods vehicles are involved in 42 accidents per 100 million vehicle kilometres (26 for light goods), compared to 71 for cars (2005 statistics). However, while goods vehicles are involved in far fewer accidents than cars, the severity of accidents involving them tends to be higher. For instance, goods vehicles are involved in almost twice as many fatal accidents per vehicle kilometre as cars (at 1.8 per 100 million vehicle kilometres, compared to 0.9 for cars). Goods vehicles with a gross vehicle weight over 3.5 tonnes are involved in around 15% of all fatal accidents, and some 7% of accidents involving either serious injury or death.

A related safety issue concerns fuel spills from goods vehicles, which in some circumstances can be a cause of accidents for others.

Routeing strategies for goods vehicles can help to address concerns by residents about local severance and intimidation. Personal security issues for goods vehicle drivers can also be a problem, particularly related to a lack of suitable rest area provision in some areas.

Economic

As the biggest contributor to the movement of goods, road freight is clearly important for the Welsh economy, and as described in earlier, movement of goods is essential to almost every aspect of a modern society.



Facilitating the efficient and reliable movement of freight and connecting Wales with its markets are key outcomes of the 'Connecting the nation'.

Environmental

Road freight operations give rise to some environmental disbenefits in terms of pollution, noise and vibration, as well as other impacts such as safety. Road freight vehicles have higher emissions per tonne-km of freight moved than other modes such as rail.

Intrusion, noise and vibration caused by large vehicles are particular issues in smaller communities and on lower standard routes. Restrictions can be considered to address these issues, though it is often not practical to restrict all freight movement as local access may be required. Restrictions can also simply transfer traffic to another location.

The heaviest vehicles are responsible for the vast majority of wear and tear to road surfaces. This is essentially because the wear and tear caused by a vehicle is proportional to the 4th power of the axle weight. For example, passage of a 2-tonne axle will cause approximately 16-times the wear and tear of a 1-tonne axle. Hence, wear and tear due to cars and light vans is negligible by comparison to heavier vehicles, in spite of the main body of traffic on most roads being cars and light vans.

Particular environmental impacts can arise with freight deliveries in dense urban areas, due not only to pollution and congestion, but also to the intrusion caused by large vehicles in perhaps constrained centres. One way of addressing these issues is to set up a 'consolidation centre' on the edge of the urban area, where goods are rationalised into a smaller number of vehicles, thus

reducing impacts on urban roads. In historic centres such facilities could be used to avoid the need for the largest vehicles to enter the urban area at all. Such arrangements generally impose an additional cost on operators and customers, and at least the start-up costs of such facilities generally need to be found from the public sector. The consolidation centre concept is equally applicable to sensitive rural areas.

Bristol Freight Consolidation Centre

– In a partnership between Exel and Bristol City Council (with additional funding from CIVITAS), a freight consolidation centre has been set up outside the city centre to reduce the number of delivery vehicles serving the main shopping area. This is one of the few examples of operating freight consolidation centres, being the first of its kind in Europe to serve an urban area. It builds on the successful Heathrow Airport Consolidation Centre that opened in 2001.

An issue relating to both safety and environmental impacts is the provision of appropriate and suitable parking places for drivers (particularly of larger vehicles) to take breaks as required under drivers' hours regulations; so-called 'rest areas'. This can be within the day or overnight, as it is not unusual for journeys to span more than one day which can require a driver to sleep in the cab. Drivers' hours regulations can limit flexibility over the location of stops, particularly longer overnight stops. In many parts of Wales, and indeed the UK as a whole, a lack of suitable rest areas is an increasing problem. Lorry parking sites can be controversial due to environmental impacts (mainly noise, pollution and visual intrusion). As such, particularly 'unpopular' sites have closed, and provision of new sites has been limited due to local resistance and planning constraints.

4.6 Potential Issues



As the dominant freight transport mode, road haulage is often seen as the ‘main problem’ in freight terms rather than the ‘main provider’. This sort of assertion can mean that the benefits associated with road freight can be missed and its specific needs side-lined. For instance, local road damage can be a problem, but it may be the consequence of a locally-based freight user with no alternative routes. While this is also related to other issues such as whether the users’ location is suitable, there are many such sites with ‘legacy’ rights of access by large or heavy vehicles.

One barrier to achieving greater efficiency in road freight and reducing any adverse impacts is the relatively fragmented nature of the haulage industry, characterised by large numbers of small operators. In addition, trends tend to be driven by commercial pressures rather than decisions made by public bodies (more so than for passenger transport). Initiatives such as Freight Quality Partnerships (FQP) can help to bring together local authorities with the business community and other stakeholders to seek agreement on measures such as routeing changes. In addition, major users of freight can influence the industry as a whole.

Operators argue that a barrier to cost-effective freight transport is the system of charging and taxation for goods vehicle use in the UK. It has been claimed that higher-than-average fuel taxes unfairly penalise UK operators, and it had been hoped that a new distance-based charging (DBC) system for goods vehicles would address this. However, the DBC scheme has been shelved pending further work on a national charging system

for all vehicles. It should also be noted that any form of DBC could lead to significant impacts on vehicle routeing, with potential consequences in terms of environmental impacts (both positive and negative).

A higher proportion of foreign vehicles fail to comply with UK safety regulations and, as well as potentially dangerous practices going undetected, such operators can also have an unfair competitive advantage when not caught. To combat this, the DfT has set out clear cabotage rules and already taken action against some cabotage operations. Work is also being undertaken to explore ways of delivering more targeted enforcement on foreign vehicles, and the feasibility of doing so. A possible way this could be achieved is using a ‘vignette’ – a time-based charge for the use of UK roads issued at the point of entry/exit, designed to make foreign hauliers pay for some of the wear and tear they cause on UK roads. Such a scheme could be administered through the existing Vehicle Excise Duty (VED) registration process.

One way of reducing unreliability for freight operations is to allocate priority lanes for goods vehicles. This has been introduced in some locations in England (e.g. Newcastle-upon-Tyne). Such lanes should be shared by other classes of vehicle, such as buses; indeed, they are often described as ‘no-car’ lanes. Effective signage can also assist in reducing unreliability.

4.7 Steps Towards Delivery



Suggested ‘steps towards delivery’ specifically related to road freight include the following, relating back to the hierarchy themes of the strategy as indicated – Spatial, Mode Split (MS) & Making Best Use (MBU):



Ro1	Stakeholders and the freight industry work together to seek to improve the efficiency of road freight where possible, such as considering the amount of empty running.	MBU
Ro2	Allied to this, the potential use of intelligent transport systems (ITS), such as variable message signing (VMS) and telematics, to improve efficiency in the freight sector should be explored further. These technologies have the potential to improve traffic conditions for all road users, and reduce emissions, and potential specific linkages of ITS and VMS to freight users' needs should be considered. Specific freight-related examples could include increasing knowledge of opportunities for return loading or provision of in-cab route information.	MBU
Ro3	There is considerable scope to work across the industry and beyond to reduce the environmental impact of road freight vehicles, in particular the effects of emissions, as well as localised impacts which could include safety-related issues caused by fuel spillages. For instance, operators should be encouraged to rapidly introduce cleaner vehicles in line with forthcoming European regulations. Sharing best practice across the industry and an emerging emissions accreditation scheme will go some way to encouraging this, similarly research into use of alternative fuels for distribution. At a more local level, authorities should consider introducing Low Emission Zones in areas such as city centres that are subject to poor air quality, potentially in conjunction with a consolidation centre. The Welsh Assembly Government already endorses the Renewable Transport Fuel Obligation (RTFO) which ensure that by 2010, 5% of all road transport fuel sold in the UK will be from a renewable source.	Spatial MBU
Ro4	There is a need to identify a strategic lorry route network for Wales, and key links across borders. This is both to provide consistent routeing advice to operators and with a view to considering and implementing measures to improve freight operations (such as through priority lanes for freight vehicles). This can build on existing routeing suggestions, such as the FTA members' identified 'Trade Routes'.	Spatial MBU
Ro5	Subsequently, local authorities and/or regional consortia should seek to develop more localised lorry route maps, in particular to confirm where goods vehicles should be accommodated and where they should be restricted. These should specifically include consideration of access to key freight generating sites.	Spatial MBU
Ro6	Allied to routeing issues, making the most efficient use of the road network would be aided by a consistently maintained network. This can be a particular issue in rural areas, where the road network is the only option, and sometimes of a lower standard than is ideal for heavier vehicles. For instance, two elements of the economy of rural Wales routinely require freight transport include forestry and agriculture. Livestock movement in particular has increased as a result of less abattoir facilities being available.	MBU
Ro7	The role of parking for road freight transport should be examined at a national and regional level as current arrangements may not be fully adequate. This could examine optimum locations, the facilities required and the pricing structure that is appropriate for them.	MBU
Ro8	A specific issue within parking relates to drivers' rest area provision in Wales. These should be reviewed, as the availability of facilities has been identified as a potential issue that adversely affects operations and can lead to localised tensions and problems. This should also take into account impacts of EU directives. Regional consortia should work with local authorities to address gaps in provision.	MBU
Ro9	Consider a pilot scheme for a freight consolidation centre in Wales, working in partnership with a local authority and the private sector. Related to this, seek to understand the role of distribution centres in (and serving) Wales.	Spatial MBU





Chapter 5: Rail Freight

Strengths

- Modern locomotives and rolling stock are generally available
- Competition between major rail freight operators in Wales
- Good rail infrastructure – providing rail links to most of the main centres in Wales, and links to the main markets in the rest of the UK and Europe
- Low CO₂ and other emissions compared to road freight
- New rail business is being won by all the existing freight operators in the region with the majority of rail freight running without subsidy

Weaknesses

- Short-term variability for some freight movements contrasts with stability of passenger services, and high fixed costs can make it difficult to respond to short-term business changes
- Some network constraints (such as potential capacity pinch-points, 24 hour access not always available and some gauge restrictions)
- Availability of specialist stock (such as wagons for hi-cube containers) can be limited
- New developments often fail to fully consider rail – for example, distribution sites next to the rail network typically do not make provision for possible rail access
- Availability and choice of rail terminals is not particularly well-understood by the wider freight industry
- Funding for network improvements and capital assistance for operators is scarce

Opportunities

- Road congestion may work in favour of rail freight services
- Working Time Directives could have less affect on rail operation (than road)
- Competition and investment by operators can improve reliability and service to users
- Growing acceptance of the need to reduce emissions from transport, and hence making more use of environmentally friendly modes of transport such as rail
- Grants are available to assist developments in rail freight use

Threats

- Funding for network improvements and grant support for infrastructure is still uncertain; lack of long-term funding commitment undermines new interest in rail from industry
- Passenger train aspirations could impact on freight path availability
- Potential increase in freight track access charges
- Future distribution locations not taking long term rail potential into account
- Perception of rail freight (by some in industry) as not sufficiently customer focused
- Road transport and short sea shipping feeder services provide intense competition for longer distance rail-based container flows

5.1 Background



Rail freight in Wales developed historically around the coal and steel industries, and indeed many railways in South Wales in particular were originally built to take coal from the mines to customers and ports. Much of the rail freight business in Wales is still centred around those same commodities, although imports are now as likely to be carried as exports.

Modern rail freight businesses are structured differently to rail passenger businesses. In particular, whereas passenger services are run through franchises and generally receive some form of subsidy, rail freight services are owned and operated commercially, paying an access charge to use the rail network. Passenger services are also relatively stable, operating broadly the same services for several years at a time, where rail freight responds to its customers needs. There are also some key operational differences. In general, rail freight services are far less frequent than passenger services, and may run on a less than daily basis. Also, freight services typically operate Monday-Friday and are often limited at weekends.

There are two main types of rail freight operation:

- Freight services for bulk products generally run with limited intermediate stops, with origins and destinations in specific rail terminals (such as power stations and steel works). Trains are scheduled to meet customer requirements although may follow an established pattern. Services can be seasonal and/or relate to industrial output or import/export patterns; and
- Inter-modal services generally have a schedule onto which wagon space can be individually booked. Some are scheduled overnight to permit a morning delivery at final destination. However, operating

overnight can conflict with maintenance, which tends to be scheduled outside peak passenger periods.

Rail Industry Issues

A number of rail industry strategy initiatives could impact on rail freight in Wales:

Rail Planning Assessment (RPA): 11 RPAs cover England and Wales, linking spatial planning and planning for the railway by both government and the rail industry. They were initiated by the SRA, and have been taken forward by the DfT and Welsh Assembly Government, to look at the challenges and options for development of the railway over 20 years, in the context of forecasts for population, the economy and travel behaviour. The Wales RPA has been published. The RPA does not commit to specific proposals, but sets out current thinking on how the railway might be developed relating to wider planning objectives, and identifies priorities for further development.

Route Utilisation Strategy (RUS): a programme of 18 RUSs are seeking to balance capacity and passenger/freight demand with the operational performance and cost of the rail network. Network Rail is developing RUSs in conjunction with rail industry partners and wider stakeholders, to inform the development and delivery of timetables, infrastructure maintenance and renewals. Two RUSs are of particular relevance to the rail network in Wales:

- Freight RUS – (completed in March 2007) covers freight issues across the whole of Network Rail (including Scotland) and informs other area-based RUSs; and
- Wales RUS (including lines in the Borders) – this will also consider the results of the Wales RPA and relevant Local/Regional Transport plans, and is due to be completed towards the end of 2008.



5.2 Current Situation

Periodic Review 2008: the Office of Rail Regulation's (ORR) 2008 periodic review (PR08) will set Network Rail's outputs, revenue requirement and access charges for the fourth 5-year 'control period' (CP4) from 1 April 2009 to 31 March 2014. PR08 determines the appropriate financial and incentive framework for Network Rail and reviews the potential for efficiency savings in its expenditure. It is the first periodic review to take place since the Railways Act 2005, which introduced a new process based around High Level Output Specifications (HLOS) and Statements of Funds Available (SOFA) produced by the Secretary of State for Transport and by Scottish Ministers. This also requires the need for a detailed understanding of whole-industry costs and benefits when undertaking the review.

Strategic Freight Network: The DfT's 2007 White Paper 'Delivering a Sustainable Railway' proposed a 'Strategic Freight Network' (SFN) for England and Wales; the SOFA allocated up to £200m for developing the SFN in CP4. Overall, the SFN should have sufficient capacity for growth, with limited conflicts between passenger and freight traffic, and include defined diversionary routes for core routes (with the objective of ensuring availability), as well as minimise freight movements via London. The network should provide for longer trains with appropriate axle loads and loading gauge. SFN routes relating to Wales could include the South Wales main line to Swansea (from both Gloucester and the Severn Tunnel) and the Marches line from Newport to Crewe and Shotton.

The EU is also promoting policies aimed at a pan-European rail network giving priority to freight, and member states are being urged to contribute actively to the development of a rail network that facilitates efficient flows of international rail freight. This is linked to overall EU connectivity and transport networks policies.

The UK rail freight industry has grown significantly in the last 10 years, since privatisation, increasing its market share and largely reversing the long-term decline in demand for rail freight observed over the preceding 40 years or more. Furthermore, rail freight traffic is forecast to continue to grow, with the biggest increase forecast in the volume of maritime containers, which is predicted to double over a 10-year period.

Most rail freight services in Wales run in South Wales, with some services in North Wales but very limited operations in Mid Wales, and by far the majority of rail freight movements are between places in Wales and England/Scotland. Over 8 million tonnes of freight uses the South Wales main line between Newport and Swansea; less than 1 million tonnes is carried by the North Wales Coast line. The Marches line carries over 2 million tonnes per annum. There are commensurately fewer movements in North Wales, with regular services approximately 10% of the number in South Wales. The main UK rail freight operators, EWS and Freightliner, are active in Wales, and some more limited traffic is carried by other operators. The largest rail freight operator, EWS, runs around 500 services per week in South Wales. The vast majority of rail freight services in Wales run without direct subsidies.

Freight currently using rail in South Wales includes steel, coal to power stations from sources within Wales as well as other parts of the UK and overseas, coal to other destinations, automotive traffic, aggregates, oil and petroleum products, scrap metal and containers. Steel-related rail freight represents around half of all services. North Wales rail freight activity includes aluminium products, steel, nuclear waste, stone and aggregates, coal and timber.

Although rail freight services are regularly scheduled, there can be significant variations in demand. For example, as steel prices increase, there can be increased demand for scrap steel.

5.3 Rail freight interacting with other modes



The interaction between rail freight and other modes is dependent on the commodity transported. For instance, rail haulage of bulk items is typically between dedicated rail-linked terminals, which could be located at the original source, the final destination, ports and/or distribution depots. Good examples of this are coal which is typically transported directly between coal mines or ports and power stations, and aggregates travelling between quarries and storage depots.

Where dedicated terminals do not exist at origins and destinations rail freight relies on transshipment to/from road vehicles. The availability or otherwise of facilities to enable this to happen is important to the ability of rail to be considered as an alternative to road for at least part of a journey. In particular, this includes rail-connected terminals to enable transfer between road and rail (especially using inter-modal equipment such as containers and swap-bodies), as well as connections to ports so that incoming or outgoing freight can use rail for direct access.

Wentloog International Terminal

– example of an existing international inter-modal freight terminal. Located to the east of Cardiff, the terminal opened in February 2001 and is operated by Freightliner. The main aim of setting up the terminal was to help move products to/from key European markets by rail, over land and through the Channel Tunnel, though in the event it caters more for domestic movements within the UK.

5.4 Future Prospects



Freight Forecasts

Rail freight traffic in the UK is forecast to continue to grow. Network Rail's Freight RUS outlines forecast scenarios for the main commodities carried by rail, which includes forecasts produced by the industry on a 'top-down' and 'bottom-up' basis. These forecasts for 2014/15 rail freight demand in the UK, alongside corresponding rail freight lifted in 2003, are shown in Table 5.1.

The forecasts identify the potential for an overall increase of over 25% in UK rail freight demand, with more significant increases in some commodities. For instance, the volume of maritime containers in particular is predicted to increase by 70-80%, and international (Channel Tunnel) and inter-modal traffic considered to more than double.

When these forecasts are assigned to the key freight routes on the rail network in Wales, the South Wales main line is forecast to carry over 12 million tonnes of freight in 2014/15, with freight using the Marches line increasing to more than 3 million tonnes.

External Issues

There are a number of specific issues and opportunities that could affect rail freight development or in which the industry could participate. For instance, road congestion may work in favour of rail freight services in making competing options less cost effective. Similarly, although the effect to date has been limited, revisions to the working time directive could alter the economics of road freight. It is possible that the rail freight industry itself could also be directly affected, albeit to a lesser extent.

Changing distribution models and markets create opportunities for rail freight and rail connected terminals. For example, port



Commodity	Actual	Forecasts (2014/15)		Index
	2003	'Bottom-up' ¹	'Top-down' ²	
Coal ³	46.0	50.5	43.1	94-110
Metals	10.5	14.6	12.1	115-139
Ore	6.1	5.9	6.0	93-98
Other Minerals	19.7	23.6	31.5	120-160
Waste	2.2	1.8	2.3	82-105
Petroleum and chemicals	6.8	7.1	7.0	103-104
Channel Tunnel	2.0	6.0	6.5	300-325
Domestic inter-modal/wagonload	0.9	2.5	6.5	278-722
Maritime Containers	11.1	20.3	18.8	169-183
Auto	0.4	0.5	0.6	125-150
Total ⁴	105.7	132.8	134.1	
Index (compared to 2003)	100	126	127	

Source: Network Rail Freight Route Utilisation Strategy (2007)

Notes

- (1) 'Bottom-up' forecasts were prepared by the Rail Freight Operators' Association (RFOA), based on the operators' experience of their own markets, using a combination of market intelligence, trends and economic and other drivers.
- (2) 'Top-down' forecasts were prepared by the Rail Freight Group (RFG) and Freight Transport Association (FTA), using analysis based on the GB Freight Model, an established tool employed by the DfT (and formerly the SRA) to forecast freight movements.
- (3) Earlier (pre-publication) 'top-down' forecasts for Coal were 52.9mt.
- (4) Network Rail's own rail freight haulage for track maintenance and renewals is not included; in 2003 this was 7.4mt; forecasts suggest this will be around 6.5mt per annum by 2014/15.

Table 5.1: UK Rail Freight Industry Forecasts (annual million tonnes lifted)

based distribution centres in both North and South Wales could be linked by rail to markets in the North West, Midlands and South West England. This would reduce overland haul lengths by bringing overseas cargo as close as possible to the origin and destination of goods.

There is a growing recognition of a need to reduce emissions from transport, and hence making more use of environmentally friendly modes of transport where practicable becomes a greater imperative. Rail freight is an environmentally efficient mode. Grants are available to assist in this, but a degree of uncertainty surrounds their longer-term availability. Industry trends such as increasing

staff flexibility, multi-skilled workers and annualised hours contracts also all seek to increase the viability of rail freight, and continued competition and investment by freight train operators can improve reliability and the service to end users.

Infrastructure

The current round of rail strategy development and HLOS will feed into the Periodic Review of rail access charges, framing the funding regime for the railways and determining the track access charges that the operators must pay to use the rail network. The Welsh Assembly Government is already working with DfT and Network

Rail and there is clearly merit in other stakeholders working within this process and participating in the forthcoming Wales RUS.

A variety of network enhancements that are not specifically targeted at freight should be exploited. For instance, there are opportunities for rail freight in re-signalling schemes, which could include enhancements to the benefit of both passenger and freight services. The existing network also presents opportunities for future rail freight movements, particularly in rural areas. Such initiatives could include use of innovative technology or practices, re-invigoration of moth-balled lines and developing new diversionary freight routes to provide resilience and security of supply of services.

5.5 Impacts and Outcomes



Social

‘Connecting the nation’ seeks to improve access to life opportunities, and these outcomes are focused on people, and not directly related to freight transport. However, there may be circumstances where the rail freight industry, as a potential employer, could also play a part in improving opportunities for employment in key areas. In addition, another indirect consequence could be observed in the potential to reduce road accident rates with the transfer of existing road-based movements to rail.

There could be some tension between a desire to develop passenger services to assist in meeting social (or economic) outcomes. For instance, in situations where rail capacity is scarce, increased demand for passenger services could impact on the availability of freight, unless sufficient paths are protected.

Economic

Facilitating the efficient and reliable movement of freight and connecting Wales with its markets are key outcomes of the ‘Connecting the nation’.

Rail freight is a key over-land mover of bulk goods, in particular for energy, raw materials in heavy industries and some part-finished and finished products. In the movement of bulk goods in particular, rail has clear economic (as well as environmental) advantages over road transport. Making efficient use of the rail network is enshrined in ‘Connecting the nation’, though there is some scope for tension between aspirations to transport people and freight.

Environmental

The positive environmental impacts of transferring goods from road to rail are clear, where a typical freight train can remove 50 goods vehicles from the road network. Although varying by commodity and with load factors, compared with carrying the same tonnage by road, rail typically produces less than 10% of the carbon monoxide; around 5% of the nitrogen oxide; less than 9% of the fine particulates and around 10% of the volatile organic compounds. Similarly, a tonne of freight carried by rail produces at least 80% less carbon dioxide than by road. There is also significant public support for freight traffic being moved by rail. Table 5.2 provides a comparison between road and rail freight for key emissions.

In addition, apart from the environmental benefits, moving freight by rail can represent a more efficient use of available infrastructure, especially where spare capacity exists on the rail network, and/or there are capacity constraints on the road network. Moving freight by rail should also contribute to improved transport safety, as a



Mode	PM10	CO ₂	CO	NO _x	SO ₂	VOC
Rail	0.004	15	0.032	0.31	0.016	0.021
Road	0.048	180	0.33	1.74	0.005	0.15

Source: SRA February 2005

Key: PM10 particulate matter of less than 10 microns; CO₂ carbon dioxide;
CO carbon monoxide; NO_x oxides of nitrogen; SO₂ sulphur dioxide;
VOC volatile organic compounds

Table 5.2: Comparison of Emissions of Road and Rail Freight
(emissions in g per tonne-km)

result of the very good safety record of rail. The Rail Freight Group estimates that over the past 6 years rail freight has saved two million tonnes of pollutants, 6.4 billion lorry kilometres and 31.5 million lorry journeys.

As with all 'heavy' transport, there are negative environmental effects of rail freight. For instance, encouraging rail freight can give rise to some local environmental impacts, such as noise in the vicinity of rail lines. Also, freight interchanges can have an impact, as they require large areas of land and can give rise to landscape and noise intrusion.

5.6 Potential Issues



Key barriers and success factors in promoting rail freight relate to infrastructure issues, costs, and the structure of the industry itself.

Infrastructure

In order to encourage rail freight, it is clearly necessary for paths to be available for running freight trains, but in some parts of the rail network, capacity pinch points have an adverse effect on both passenger and freight operations. The available capacity is determined by a combination of signalling and track infrastructure, overlaid with the demand from passenger and freight operators, as well as maintenance and renewal requirements. Regular interval

services which are desirable for passengers can have an impact on the number or timing of freight paths. This can in turn impact on freight operators' flexibility, though there is usually scope to include paths for freight if timetabling is carefully managed.

Another important factor is loading gauge. This determines how wide and high are the rail vehicles that can safely travel a route, clear of platform edges, bridges and tunnels, and other railway infrastructure installations. Whereas the loading gauge on key lines in Wales is adequate for the majority of traditional freight (generally it is 'W8' on the main lines), there is an increasing use of larger 9ft 6in tall 'big box' and 'hi-cube' containers by maritime shippers that require a larger loading gauge (known as 'W10' or 'W12'). Wentloog international terminal currently has a very small number of large size containers running into the terminal, but given existing loading gauge constraints, these are carried on specialised low-level wagons.

While low-level wagons clearly offer a solution, they are currently of limited availability, though there is scope to secure the use of more low-level wagons as routes elsewhere in the UK are improved and their use is no longer required. However, they can suffer from technical issues relating to the small diameter of the wheels, and a capability to fully cater for the growing number of (larger) maritime containers using conventional wagons is the primary driver

behind measures to increase loading gauge. This needs to be explored with the major retailers and their UK distribution plans.

Although Network Rail's Freight RUS includes the longer-term aspiration to provide W12 clearance to South Wales via Gloucester and the Severn Tunnel, there are no specific plans to improve loading gauges in Wales. The proposed SFN includes the South Wales main line with 'at least' W10 gauge to Cardiff (from both Gloucester and the Severn Tunnel), though less than W10 beyond. The Marches line from Newport to Crewe and Shotton is also less than W10 in the SFN. It is worth noting that much rail freight to/from South Wales uses the Severn Tunnel, and work required to increase the loading gauge of the tunnel would be very significant. There have been extensive studies of the North Wales main line to Holyhead, considering both electrification and increasing the loading gauge to carry piggy-back lorry traffic, particularly looking at land-bridge potential for Irish movements.

Line speed (track speed limit) is another issue affecting freight services, though freight trains typically travel at lower speeds than passenger services. Most of the Welsh main line rail network has line speeds between 130km/h and 170km/h, though there are a number of locations where specific structures or curves impose a lower speed limit. Off the main routes, speeds are below 130km/h, and as low as 50km/h on some freight-only branch lines. Newer wagons with speeds of 100-120km/h can travel as fast as stopping passenger services. Older wagons typically have vehicle speed limits of below 100km/h. There are no current plans to undertake any work to improve line speeds in Wales. The priority for routes in Wales is to maintain existing standards.

Other infrastructure limitations can be train length and weight. Occasionally length can be an issue for freight trains, as they are

typically longer than passenger services. However, this is not currently an issue in Wales or expected to become one. The 'route availability' defines the types of rolling stock that can use a particular route based on the axle weight. The key lines in North and South Wales have a route availability which allows most types of standard rail wagons to be used.

Rail freight gauge enhancement in Scotland

– the Scottish Executive is promoting a £4 million investment to enhance the rail gauge and permit larger containers and other rail freight movements between Mossend, Aberdeen and Elgin. The project, devised by the North East Scotland Rail Freight Development Group in partnership with the Scottish Executive, Network Rail and the Strategic Rail Authority, allows the transfer of an estimated 1.3 million tonnes of freight from road to rail.

Costs

Although most rail freight flows run without any form of subsidy, a common barrier to development of rail freight is cost, in terms of infrastructure development and in moving goods. In particular, the need to tranship goods between rail and road vehicles for part of many journeys impacts on costs. As haul lengths in Wales (and the UK in general) are comparatively short, this increases the proportional effect transhipment can have on total costs.

Infrastructure work within terminals or sidings can generally be implemented at fairly modest cost, but schemes affecting main line operation have been difficult to achieve, particularly as the testing and commissioning regime can be onerous. While Network Rail's priority focus is on maintaining and renewing the infrastructure, it will also consider enhancement and



development. However, there have been examples of where schemes that appeared modest at the outset have in fact ended up being much more expensive, or taking longer to achieve than originally expected.

Rail freight has been successful at attracting and retaining traffic, but the situation varies according to market sector. In some markets, especially inter-modal movements, the cost to customers of rail can be an expensive way to move freight in comparison with road haulage in a market where decisions are made primarily on price. One way to overcome this is for public bodies to provide grants to offset these differences. Although revenue subsidy schemes are common in passenger transport, they have been more limited for freight. Grants have traditionally been awarded for ongoing operations, but it may be more appropriate to take a funding decision for a single year, or the period of a one off contract.

Three types of grant are currently available to help meet the extra cost that may be associated with moving freight by rail.

- Freight Facilities Grant (FFG) – helps offset the capital cost of providing rail and water freight handling facilities; and
- Rail Environmental benefit Procurement Scheme (REPS) – this is in two parts, and currently is set to run from April 2007 to March 2010:
 - REPS Inter-Modal – for the purchase of inter-modal container movements, which has replaced the previous Company Neutral Revenue Scheme (CNRS); and
 - REPS Bulk – for the purchase of other rail freight movements, which has replaced Track Access Grant (TAG).

Details of administration and guidance for the use of the revised grant procedures, as well as the on-going role of the Welsh Assembly Government in administering the new grant regimes in Wales, are to be confirmed.

Celsa, Cardiff, 2005 – an example of freight grants already at work in Wales is the £2.2m Freight Facilities Grant awarded by the Welsh Assembly Government to support the development of rail freight facilities at the company's Cardiff sites. Rail facilities will handle inbound train loads of raw materials and outbound train loads of finished steel products, removing over 300,000 lorry journeys from roads over 10 years (nearly 80 million road freight kms).

Structure of the Industry

Although many organisations, such as the Rail Freight Group, Network Rail and the rail freight operators, offer support for those seeking to put freight on rail, it remains a complex business. In contrast to road haulage where start up is very easy, it is complex to organise access to terminals and paths, as well as hire of locomotives wagons and crews. Traditional road or shipping organisations sometimes employ specialists to attempt to grow the rail part of their business, but this is seen as a long process. Many possible developments are planned and prepared but relatively few are ultimately developed to an operational status.

Furthermore, although the structure of the rail freight industry is intended to facilitate open access, in practice, existing operators often continue to use their own terminals and those of their customers. Cost can prevent other companies from using the facilities, meaning that open access can exist more in theory than in practice.

5.7 Steps Towards Delivery



Suggested 'steps towards delivery' specifically related to rail freight include the following, relating back to the hierarchy

themes of the strategy as indicated – Spatial, Mode Split (MS) & Making Best Use (MBU):

Ra1	The Welsh Assembly Government and other stakeholders should continue to work with Network Rail/DfT to ensure that the needs of the freight industry in Wales are taken into account in making decisions about rail infrastructure and train path allocation in Wales.	MBU
Ra2	The principal aim should be to increase the carrying capacity of the railway as cost effectively as possible, focusing on the passenger and freight links which make the biggest contribution to competitiveness and productivity, and reduce whole systems life cycle carbon emissions per tonne-km. This needs to reconcile the potential for conflict between the demands of freight and passenger services where pathing capacity is limited, as well as consider technical requirements such as signalling and take into account potential future changes such as electrification. As part of this, specific needs and issues for rail freight should be considered, such as loading gauge, train weights and lengths, and operating speeds.	MBU
Ra3	The Welsh Assembly Government will seek to develop its role further in the specification of rail infrastructure use and development. In addition, consider how the organisation of Network Rail can best respond to the rail freight needs of Wales, including perhaps options for a Wales based route organisation.	MBU
Ra4	Continually review the way that grants and subsidy schemes are implemented in Wales, with a view to encourage modal shift to rail, as part of considering the grant regime for attracting freight to use more environmentally friendly modes. Changes to grant regimes are currently being implemented at Welsh Assembly Government, DfT and EU levels.	MS
Ra5	There is a specific need to identify potential options for multi-modal terminals.	Spatial MS
Ra6	Following on from this, land-use policies should seek to ensure that opportunities for promoting rail freight facilities are protected, particularly relating to protection of former railway lands that could potentially be returned to use as direct rail connections or road-rail interchanges.	MS
Ra7	Where Regional Transport Consortia identify potential opportunities for passenger and/or freight rail developments, the promoters should carry out outline capacity studies prior to detailed negotiations with Network Rail and potential operators. It is suggested these studies could use scenario planning to put the proposals in a variety of contexts, as well as consider the cost and potential timescale of implementation. Outputs should also include the potential environmental benefits, for instance calculating 'sensitive lorry miles' saved (making use of standard methodologies where available).	MBU



Chapter 6: Ports and Shipping

Strengths

- Good natural assets and land availability at existing ports
- Good road and rail links to most ports (and rail development capability)
- Capacity for further growth in existing and new trades
- Generally lower environmental impact of water-borne freight than other modes
- Well positioned gateways to North West England and the Midlands
- Key features of Welsh ports include deep water access, land at and locations of ports, facilities for cruise ships and ro-ro traffic, and strong presence many sectors

Weaknesses

- Poor road and rail links to some ports
- Shipping contracts are often short term
- Deep water to attract the largest ships only available at a few locations in Wales
- Poor supply of training for a career in shipping
- Traditional flows have difficulty justifying reinvestment with declining industry
- Growing burden of bureaucracy affecting shipping, ports and forwarding in UK
- Limited navigable inland waterway network in Wales for freight

Opportunities

- Promote the environmental benefits of water-borne freight
- Encourage distribution changes to make more use of 'local' ports in Wales
- Growth in cabotage and/or short sea shipping
- Linkages across the EU: land bridge to/from Ireland, initiatives such as Atlantic Arc ro-ro and 'Motorways of the Sea' and expansion of EU
- Energy imports and on-site generation
- Industry trends in liner shipping and opportunities for container feeder shipping
- Ports developed as multi-modal sites with improved rail links
- Increased use of ITS and telematics in tracking goods through 'intelligent ports'
- Other activities increasing intensity of port usage (cruise vessel visits and servicing)

Threats

- Competition with local rivals and major hub ports
- New vessels in short supply
- Investment in water freight industry is often unattractive to banks and investors
- Recruitment, training and retention of staff with core skills
- Road links to ports (congestion pinch points, signing and height/weight limits)
- Rail links to ports (capacity and competition for paths with passenger services)
- Increased costs as a result of more Customs & Excise protocols for UK shipping
- Planning process for port development and dredging

6.1 Background



Ports in Wales, like many elsewhere in Europe, were developed to meet the needs of 18th and 19th century trade and industry. For instance, those in South Wales such as Cardiff developed initially as outlets for coal and steel industries, and were intrinsically linked to the development of the railways that connected them with the mines and steelworks. Ports further west, such as Holyhead and Fishguard, developed primarily to serve travel and trade with Ireland. Welsh industry also uses ports in England, not least the major hub deepwater ports in southern England, but also major ports 'local' to north east Wales, including those on the Mersey.

Today many Welsh ports are in transition. Changes in manufacturing and patterns of trade in the wider economy, and more specific developments in the use of supply chains, are altering the nature and extent of their hinterlands.

Ports & Shipping Policy

Ports policy for Wales (other than for small fishery harbours) is not devolved, so the Welsh Assembly Government works closely with the UK Government on ports issues for Wales. A key on-going initiative is a review, led by the DfT, of Ports Policy in England and Wales. This considers the role of the UK Government in the port industry, and provides it with the structure and support to enable it to plan for the long term. It is anticipated that Government intervention in the industry should be confined to when the market isn't able to deliver what is needed, but a review is necessary because patterns of world trade are changing fast and the policy framework must reflect this and allow the industry to respond effectively.

The Welsh Assembly Government is supporting the pan-European Marco Polo II Programme, which has recently been

renewed by the European Parliament for the period 2007-2013. While this potentially provides support to moving freight from road to both rail and sea, a particular initiative in the programme is to support development of 'Motorways of the Sea', a key route of which is between ports in the Atlantic Arc, which has particular resonance for Wales in its position at the northern end of the Arc (see 'Wales and the Atlantic Arc: Developing Ports').

Inland Waterways

It is estimated that freight equivalent to some 64,000 lorry journeys are carried on British Waterways' canals and rivers (which include about half the total navigable waterways in England and Wales). Conveniently located inland waterways are typically being used to carry freight in specific circumstances, though tends to include low-value or non time sensitive cargoes. Inland waterway transport is particularly suited to the carriage of waste, aggregates or abnormal loads (where feasible).

However, a negligible amount of this freight is in Wales. While many inland waterways were developed in Wales in the early days of the industrial revolution, railways subsequently became far more significant trade routes, and navigable inland waterways in Wales are today very limited. As a result, there are few opportunities to promote use of inland waterways for freight in Wales.

Airbus wings on water – an example of innovative use of water-borne freight, that actually carries a both time-sensitive and valuable cargo, is the carriage of wing sections for the Airbus A380 manufactured at Broughton in North Wales. As a result of the size of the wing sections, existing freighter aircraft could not be used, prompting the development of a bespoke vessel to carry wing sections to Mostyn, for transhipment and onward carriage to France.



Water-borne freight elements of the Wales Freight Strategy thus focus on coastal and international shipping of freight through maritime ports. Notwithstanding this, use of inland waterways for freight movements is encouraged and to be promoted if the opportunity arises, as there can be significant environmental benefits in doing so. This is shown by comparative CO₂ emissions and energy use by waterway, rail and road freight transport in Table 6.1.

Mode	Energy Indices			CO ₂
	(comparative use in kJ/tonne-km)			
	Average	Minimum	Maximum	(kg/tonne-km)
Waterway (push-tow barges)	1	1	1	0.044
Rail (trainload bulk)	1.42	1	1.71	0.033
Road (25t-38t)	3.08	2.57	3.57	0.193

Source: STRAW (Sustainable Transport Resources and Waste) Report, May 2006

Table 6.1: Inland waterways energy use and CO₂ emissions

6.2 Current Situation



Most international freight arrives or leaves the UK by sea (431 million tonnes in 2006 – some 95% of all trade by weight), with a further 138 million tonnes of domestic freight also using ports. Wales' share of UK port traffic was just over 10% at 56.7 million tonnes in 2006. Although there are some 120 commercial ports in the UK, with 15 in Wales, major ports dominate the UK market with the top 20 ports catering for almost 90% of all traffic. In Wales, the top three ports by volume (Milford Haven, Port Talbot and Holyhead) carry over 80% of all Welsh throughput. Indeed, Milford Haven is the 5th busiest port in the UK as a whole, and alone handled 61% of all port traffic in Wales (34.3 million tonnes in 2005).

The UK port sector is largely privatised and deregulated and mainly in private ownership, though port and harbour authorities are established by Act of Parliament and have statutory powers and responsibilities. In Wales, private ports predominate. Milford Haven is a notable exception as a Trust port. As well as being nodes for transfer of goods from land to water, ports also support a range of related industries and functions, ranging from full scale manufacturing and processing to storage and consolidation of cargo in transit. In Wales a few large port facilities are almost single-function ports whilst others cover a wide array of traffic types.

Milford Haven is a deepwater harbour dominated by gas, crude oil & oil products, which make up 96% of the traffic at the port. Crude oil is also processed in refineries contiguous to the port. As a result of the dominance of Milford Haven in overall figures, bulk fuels made up some 68% of all cargo in the major ports in Wales. On-going developments of facilities to handle Liquid Natural Gas (LNG) at Milford Haven are likely to increase throughput, particularly as these facilities may ultimately cater for 25-30% of all UK gas imports (currently just over 8%). Most outward traffic is taken from the port by pipeline and ship, the latter of which counts as both inward and outward traffic at the port but does not actually penetrate the hinterland.

Port Talbot is the other main deepwater facility in Wales, and is focused on dry bulk cargoes, principally in supplying the adjacent Corus steel works with coke, iron ore and limestone. It also handles imported coal for electricity generation, which is typically hauled to power stations by rail. Other ports servicing manufacturing on or close to the port include Barry, which has substantial liquid bulk traffic supplying local chemical industries and Holyhead, which caters for imported dry bulk cargoes for aluminium smelting.

The key ferry routes to/from Wales are important links to the Irish Republic. The main routes link Holyhead with Dublin/ Dun Laoghaire and Pembroke Dock/ Fishguard with Rosslare. The ferry services are important roll-on/roll-off (ro-ro) freight facilities, and carried more than 450,000 units (including accompanied and unaccompanied trailers) in 2006. In addition, some 3 million passengers and 700,000 accompanied passenger cars used these ports to travel to and from Ireland in 2006.

While the major ports specialise to a high degree in the ro-ro markets and liquid/dry bulk trades, there are other important multi-purpose ports in Wales, notably Swansea, Barry, Cardiff and Newport in South Wales, with Mostyn and Penrhyn in North Wales. Between them, these ports handle liquid fuels and chemicals, dry bulks such as coal, aggregates and fertilisers, timber, steel, other general cargo and containers.

6.3 Ports & Shipping interacting with other modes



With the exception of supplies and products related to industries located on or immediately adjacent to port estates, ports themselves are inter-modal staging points for goods in transit between an initial origin and a final destination. As there are few viable inland waterways in Wales, this is almost exclusively between shipping using coastal and deep sea vessels and road or rail freight for inland movements. A key exception is Milford Haven, which as well as road and rail uses extensive onward shipping and pipelines. The availability of appropriate road and rail links to/from ports are of particular importance to the successful operation of ports.

ABP & Sims Group Rail facilities, Newport, 2003 – in another example of freight grants in operation in Wales, Freight Facilities Grants totalling £1.7 million awarded by the Welsh Assembly Government to support investments by ABP and Sims Group for the refurbishment of a rail link, the provision of handling equipment and quay strengthening works. The facility is projected to handle 60,000 tonnes of scrap per annum and eliminate the need for 52,000 lorry journeys over 10 years, representing a saving of over 11 million lorry vehicle km.

6.4 Future Prospects



Changing Distribution Models & Markets

Distribution of import/export freight within the UK is predominantly undertaken by road from centralised distribution centres. However, road transport costs are rising in response to a number of internal and external factors, and distribution (of retail goods in particular) may therefore shift away from a model with the primary facilities centralised in the North West and Midlands of England to a more regionally-located distribution format.

Use of feeder ships is increasingly an option for delivering containers to customers, albeit there can be time and cost implications. This is in part due to inland distribution pressures as outlined above, but also because deep-sea container ports are themselves subject to congestion at peak times. Significant shifts in world manufacturing capacity (to Asia in particular) are increasing world container volumes, and these could double within the next decade. This in turn is driving an increase in vessel size beyond the capability of many existing ports. Hub ports capable of serving these vessels will increasingly need to tranship containers to feeder vessels even



to serve existing container ports, at the same time increasing the potential to directly serve more 'local' ports.

This opens up the possibility of linking regionally-located distribution centres and regional ports and to reduce overland haul lengths by bringing cargo closer to origins and destinations, including possible co-location of distribution centres on port estates. Hence, there is significant potential for increasing use of coastal shipping, which could see an increase in Welsh-destined cargo using Welsh ports.

The potential for greater volumes to be fed into regional ports by sea as opposed to long haul road transport brings with it the benefit of closer links to liner services, connecting Welsh ports with both deep sea UK and continental ports. Services from Wales into hubs provides Welsh exporters with new options to route their products and increases connectivity to Europe and globally. In addition, connectivity direct to deep sea hubs may also enhance Wales' attractiveness to inward investors. Similarly, proposals such as the 'Motorways of the Sea' seek to encourage long haul road freight from Southern Europe and the Iberian Peninsula to use sea-borne transport, with trailers being transported in ro-ro vessels to UK west coast ports, including ports in Wales.

Restitution of containers to production areas may also provide new opportunities for ports to consolidate and sort waste as recycling levels increase which, if not incinerated for energy production, could ultimately use low-cost container freight bound for South East Asia for recycling.

Finally, changes in energy supply also bring new demands on and other possibilities for Welsh ports. For instance, Milford Haven is central to major initiatives to import gas for use throughout the UK. More innovative energy concepts include use of biomass fuels, met by importing fuel grown around

the world. For example, this could include development of biomass-fired electricity generation on port estates, potentially focused at specific clients for electricity, and/or as part of refining bio-diesel for eventual transmission to wider markets.

Potential Effects of Supply Chain Shifts and new Markets on Ports – Future Opportunities

There are a number of changes in supply-chain and distribution practices and potential new markets for freight through ports, that could result in a number of future changes and hence opportunities for the ports and shipping industries in Wales.

Wider distribution and supply chain changes are likely, with changes in the current practice where the cargo destined for Wales passes through a small number of major ports largely outside the country. There is scope for some of this to be moved via Welsh ports, and for cargo destined for some places in England to be moved through Welsh ports. Related to this, container feedering and deep-sea container hubs could be developed, such as using deep water harbours as transshipment centres. Increases in cabotage and short-sea shipping could see more conventional cargo transferred from road to sea. All of which is likely to lead to increasing demand for inter-modal rail heads and port-related rail operations.

This could also lead to an increase in demand for distribution centres to be developed on dock estates, particularly for non-food retail goods. Partly related to this, there is also significant potential for development of value added industry on land on/contiguous to port estates (such as logistics, processing and manufacturing and previously discussed waste and energy-related schemes), which can be particularly effective as part of packages for attracting inward investment.

Greater emphasis on links to Ireland is another issue, both the Europe-UK-Ireland 'land bridge' and the potential to serve Ireland from Welsh ports. The potential for Atlantic Arc 'Motorways of the Sea' have already been discussed.

Although not specifically freight-related, there is scope to develop port facilities and increase their intensity of use to attract local departures for UK-based cruise ships and/or visiting vessels, which would have both a tourism benefit and overall profile-raising effect for Welsh industry and ports.

Short Sea Shipping – in a specific example of grants to assist shipping, the Scottish Government provided grant funding for a scheme to shift round wood log movements from road to sea transport, removing lorry miles from roads along the Kintyre Peninsula in Argyll, providing shipping links to mills, including local mills in Ayrshire. Around 100,000 tonnes left by ship from Argyll ports in 2005 (almost 15% of the total harvested in the Argyll forests per annum).

Potential Capability Gap & Threats to Sustainable Growth

There is clearly significant potential to alter the dynamics of port and shipping operation in Wales, but a number of issues exist that could affect the success or otherwise of making the most of changes.

For instance, there are some infrastructure limitations at Welsh ports, such as access to the quayside through vessel width or draft restrictions. The availability of land can be limited, particularly if there has been a loss of multi-modal or inter-modal capability through land use changes. Specific transport problems are sometimes cited, with capacity or other restrictions on some roads to/from ports. Rail capacity issues more often relate to the wider issue of freight path availability.

Competition in the privately operated shipping industry is clearly intense, and a lack of customer awareness of port facilities and services in Wales in places outside the country can adversely affect the ability of Welsh ports to attract business. Allied to this, a lack of market intelligence (such as areas of regional output, market size and typical cargo movements) can also be a factor.

Planning constraints, specifically related to environmental issues affecting dredging and land development on port estates, can restrict opportunities. In addition, the grant regimes can be poorly targeted or under-resourced for shipping. Another more general issue raised by the freight industry as a whole is a general shortage of people with appropriate skills, which can be a particular problem for some of the highly specialised elements of port operations.

6.5 Impacts and Outcomes



Social

'Connecting the nation' seeks to improve access to life opportunities. These outcomes are focused on people, and not directly related to freight transport. However, there may be circumstances where the ports and shipping industries, as potential employers, can also play a part in improving opportunities for employment in key areas.

Economic

Facilitating the efficient and reliable movement of freight and connecting Wales with its markets are key outcomes of the 'Connecting the nation'.

Ports represent strategic assets which are playing a growing role in inter-modal transport networks and logistic supply chains, and facilitate a significant amount of trade, allowing Welsh firms to export their



goods, as well as import critical components and other remotely-sourced goods. In particular, ports can have a role in improving the overall location of a region in the world, and induce new inward investment, as well as provide a physical conduit for the transfer of new technology and ideas. They can also play a role in improving access to tourists.

Environmental

Goods moved by sea result in CO₂ emissions per tonne-km comparable or less than those of rail, which are in turn around 80% less than those generated by road transport.

Road movements to and from the ports can give rise to environmental impacts such as noise, vibration and pollution. However, environmental disbenefits need to be considered alongside the potential overall environmental benefit of using sea-borne freight, and opportunities should also be sought to maximise rail distribution from/to ports where achievable

Port development activities can also give rise to negative impacts, such as visual intrusion, noise, dust and spillage leading to sea and land contamination. Most ports in Wales are in, or adjacent to, Areas of Outstanding Natural Beauty (AONB), Sites of Special Scientific Interest (SSSI), conservation areas or national parks. The Countryside Council for Wales (CCW) has a role to provide advice on the implications of proposed developments and ongoing port operations upon nature conservation interests. It works with port authorities with respect to raising awareness of their environmental role under the Habitats and Birds Directives and Wildlife and Countryside Act. In general, port authorities are encouraged to identify how port development and port related activities can be carried out with minimum impact to the environment; for example,

identifying options for the most beneficial use of dredged material and working with port authorities to develop long-term plans for maintenance dredging activities.

6.6 Potential Issues



A key issue in the promotion of ports and shipping is the deregulated nature of the freight industry. Choice of a particular port or port-related service typically hinges on cost, the price and service package and habit. Price is the dominant factor in making modal choices, and this tends to favour existing practices and road transport.

Without suitable investment in ports and supporting infrastructure, throughput may not be able to increase in the places at which this is desired. However, it should be noted that simply providing enhanced facilities and infrastructure does not guarantee growth of traffic; few decisions will always 'guarantee' an outcome, and a poor investment decision will generally turn out badly regardless of circumstances. Note though that this applies equally to all other freight terminals including multi-modal road and rail terminals. The reasons behind investments, the terminals' locations, perceived desirability, existing traffic and competitors will all have an influence. There are already examples of ports where major investment has failed to yield as much increase in usage as projected.

Marketing can, however, be successful, as shown from research into the 'Atlantic Arc' ports. Raising awareness of the Welsh ports and their facilities, with both shipping and rail operators and with other ports, could enhance the basis on which future business can be built, although this can be difficult, given the mix of ownership and competition issues between ports.

6.7 Steps Towards Delivery



Suggested 'steps towards delivery' specifically related to ports and shipping include the following, relating back to the

hierarchy themes of the strategy as indicated – Spatial, Mode Split (MS) & Making Best Use (MBU):

PS1	Promote use of inland waterways and coastal shipping wherever practicable.	MS MBU
PS2	In order to make the most of Welsh ports and shipping assets, elements of enhanced promotion (particularly in overseas markets) is suggested, to raise awareness of Welsh port facilities with both public bodies and freight customers. This should particularly target the potential environmental benefits to be gained. Freight market intelligence, including demand studies and potential freight origin/destination movements would aid this.	MS MBU
PS3	Further promotion is suggested at local and international levels, to include the potential benefits of added-value activities at ports (including manufacturing, processing and logistical development close to or on port estates), again identifying if particular environmental benefits can be achieved.	MS MBU
PS4	Identify port locations where new facilities could be developed, including in particular potential multi-modal and port-based inter-modal sites.	MS MBU
PS5	Consider port-related rail freight path availability, in particular with respect to potential future port generated rail freight demand.	MS
PS6	In conjunction with wider lorry routeing initiatives, specifically review routes to ports for road freight, including signage, limitations and standards.	MS
PS7	Continue to monitor and support improvements to skills in port and logistics, to consider future recruitment, training and skills demand.	MBU
PS8	Continually review the way that grants and subsidy schemes are implemented in Wales, with a view to encourage modal shift to shipping, as part of considering the grant regime for attracting freight to use more environmentally friendly modes. Changes to grant regimes are currently being implemented at DfT and EU level.	MS
PS9	Given the UK (and wider) nature of ports and shipping policy, the Welsh Assembly Government should continue to work with the DfT to develop an active policy on the future of ports, in order to help ensure that future development takes place in a sustainable way	Spatial MBU
PS10	Review the sea freight market for Wales – related to SI8. In particular, to consider the international shipping and the interaction of Welsh ports with others in Europe. Other issues could include identifying the amount of freight that leaves or enters Wales and makes use of sea freight for an international movement using a port outside Wales, considering the overall CO ₂ impact of movements.	Spatial



Chapter 7: Air Freight

Strengths

- There are no significant airport infrastructure or operational barriers to the development of air services carrying freight to/from Cardiff International
- Air freight offers an efficient and reliable service for (particularly) high value freight and small consignment sizes
- Reasonable motorway and trunk road network connections to Cardiff International

Weaknesses

- Currently there is very limited belly-hold capacity using passenger services to provide links to major international air freight hubs
- Cardiff International is the only viable airport for significant air freight within Wales
- Cardiff's runway is not long enough for the biggest freight aircraft on the longest trips
- Aircraft is the least environmentally friendly of any freight mode
- Air freight is only viable if the customer is prepared to pay a premium

Opportunities

- Road traffic may be reduced locally if more air freight can be flown from local airports rather than driven.
- Regular passenger services to an international hub with associated freight capacity
- The economic development opportunities related to new air freight facilities and services may bring substantial new employment
- More companies (particularly in high-tech industries) are trading on a global basis and as such are demanding fast and efficient freight services
- An international air freight hub within the region may assist inward investment

Threats

- Air freight has a high environmental disbenefit compared to other modes, with a resulting environmental impact of increased air freight services, including air pollution, noise and visual intrusion
- The easily accessible freight hubs at Manchester, Heathrow and East Midlands Airports may continue to offer competitive alternatives to Wales' businesses
- High security risk of damage or disruption to international services
- Rising fuel costs

7.1 Background



The development of air freight has broadly followed that of passenger aviation, particularly as a substantial amount of freight travels in the same aircraft as passengers. There are some discontinuities in this trend however, as the advent of 'low-cost' passenger airlines (who typically do not carry much if any freight) has suppressed rises in the average amount of freight per aircraft movement (and also slowed the growth in the number of passengers per flight).

7.2 Current Situation



The UK air freight sector experienced sustained growth in the 1990s, with a doubling of freight lifted nationally from 1.1 to 2.3 million tonnes from 1988 to 2000. Following a dip in 2001 to around 2.2 million tonnes, traffic subsequently increased to 2.4 million tonnes in 2004, though dropped back to 2.3 million tonnes in 2006. Note that while these figures only represent around 1% of UK exports in terms of tonnage lifted, it is estimated that air freight accounts for around 25% of exports by value (DfT, Focus on Ports, 2006).

Welsh air freight is essentially confined to Cardiff International, the only international airport in Wales, although there are flows of freight by road to other airports elsewhere in the UK. Although a small amount of overall freight tonnage, freight handled at Cardiff rose sharply from 506 tonnes in 1991 to 2622 tonnes in 2004, though reduced to 2,212 tonnes in 2006 (17th in the UK). This growth stems largely from an increase in belly hold freight by KLM-Air France and the start of an integrated carrier service to a European hub by TNT. There have been some corresponding reductions though; for instance a postal service operated by an air charter operator has been discontinued by the Royal Mail.

However, virtually all air freight consigned or received within Wales as an origin or final destination is serviced by airports outside the country. This is graphically illustrated in that London (Heathrow, Gatwick and Stansted), Manchester and Nottingham East Midlands airports accounted for almost 95% of all UK air freight in 2006. Over 60% of this travels in the belly-holds of passenger aircraft, which is in turn dominated by traffic through Heathrow (which alone accounts for over 50% of UK air freight and around 80% of UK belly-hold cargo). To put this in context, it is worth considering the reasons why the air freight market in the UK is dominated by a small number of key airports:

- Belly-hold capacity in passenger flights is generally (sometimes only) available from main gateway airports (Heathrow, Gatwick & Manchester). However, airports that have seen such flights begin to or increasingly serve them (Glasgow and Birmingham) have seen consequent increases in air freight.
- Services using freighter aircraft use airports that suit their markets best. For instance, 'fast parcels' operators schedule regular flights by freighter aircraft, typically within Europe, but in the first instance seek a single location in the UK (most use Nottingham East Midlands).
- Other long-haul freight typically focuses on London, with Stansted being the most popular airport.

In summary, throughput at Cardiff is low because:

- Cardiff is too far from the main markets for bespoke freight users;
- There is no integrated carrier hub, because the overall operating charges would be too high as a result of long road distances;
- The runway is too short for the largest freighter aircraft to operate with full loads on a long-haul basis; and



- Limited belly-hold cargo availability in passenger flights (there is some belly-hold cargo capacity from Cardiff that operators often decline to sell due to the effect on turnaround times).

There is one exception in Wales, with significant air freight relating to the Airbus wing factory at Broughton near Wrexham, making use of aircraft to transport wing parts for Airbus models for further assembly at other facilities in Europe. However, Broughton is a private airfield and operations are run by Airbus subsidiary Airbus Transport International (ATI), with scheduling integrated into the overall production process. ATI uses bespoke aircraft specifically designed to carry bulky aircraft parts.

There are no other air freight movements to/from North Wales. Manchester is the main airport for North Wales related air freight, which accesses the airport by road. Manchester is particularly important to industries in North Wales that use air freight, and can be an important factor in location decisions, in particular as it can be possible to achieve a better overall international freight service through Manchester than via London airports.

7.3 Air freight interacting with other modes



Most air freight travels to/from its final destination by road, and indeed much 'air' freight in Wales actually uses the M4 to access Heathrow airport and the A55/M56 to get to Manchester. This should be considered in assessing the relative benefits of freight that is going to travel by air under any circumstances, in potentially directly using airports more local to the origin or destination. Only in the particular circumstance where the origin or destination is actually located at an airport will transfers

not be required – such as Airbus wings at Broughton.

The sorts of high value, low volume and low weight commodities that predominate in air freight do not lend themselves to use of rail.

7.4 Future Prospects



Opportunities exist for more air freight to use airports in Wales, mostly at Cardiff International, though with some limited potential for commercial air freight at other airfields. The Cardiff Airport Master Plan forecasts a throughput of cargo at Cardiff of 9,000 tonnes per annum by 2015, and 18,000 tonnes by 2030. These figures would further rise if another integrated carrier is attracted and Royal Mail resume flights. In these circumstances, total cargo could rise to 16,000 tonnes per annum in 2015 and 32,000 tonnes by 2030.

Regular longer distance international passenger services would probably attract additional air freight to Cardiff, particularly if such flights linked Cardiff to a major international freight hub using wide-body airliners with significant belly-hold capacity. Some of this could be existing air freight attracted to travel through Cardiff, which would not necessarily increase air freight overall. As a consequence, road traffic could be reduced if freight can be flown from a more local airport rather than being taken longer distances by road. Cardiff International already provides for some parcels cargo on this basis.

The European Commission will be including aviation in the EU Emissions Trading Scheme in the near future, this will regulate emissions of CO₂ from air transport, and in turn this could impact on the air freight industry. Other transport might also be included at some stage.

7.5 Impacts and Outcomes



Social

The aviation industry, as a potential employer, plays a part in improving opportunities for employment in key areas, though it is acknowledged that air freight is a small part of commercial aviation in Wales. In addition, the aviation industry has significant knock-on effects in support industries in areas around airports.

Economic

Facilitating the efficient and reliable movement of freight and connecting Wales with its international markets are key outcomes of 'Connecting the nation'.

Airports can have considerable impact on their surrounding hinterland, and the economic development opportunities at or near air freight facilities may bring substantial new employment. These impacts are argued to go beyond the direct impact of operations to include less tangible benefits that air services can have on business interests and consumers. The role of air freight in this is perhaps less clear-cut, though its use for high value, low volume goods is significant, and it is estimated that, if the value of the goods is taken into account, up to one third of world trade in merchandise travels by air (OECD).

More companies are trading on a global basis and as such are demanding fast and efficient freight services, and air cargo is best placed to cater for this. Access to an international air freight hub from Wales may assist inward international investment.

Environmental

While air freight is an integral part of a modern economy, increasing levels of air travel also cause significant negative environmental impacts, particularly in relation to:

- climate change; CO₂ emissions due to air freight are estimated to be around 10-15 times those of road transport (per tonne-km), and more than 50 times greater than rail or sea transport;
- noise and vibration in the vicinity of airports; and
- use of chemicals, e.g. for de-icing, and run off of fuel or chemicals to ground water supplies.

7.6 Potential Issues



As with ports, commercial factors tend to drive the development or otherwise of air freight, and some economic benefits arising from further expansion of air freight activity in Wales. Aviation activity itself can cause significant environmental impacts, but there could be some environmental benefit of reducing truck movements to other airports, although with some increase in local road movements. Levying Aviation Duty by flight rather than passenger could however have an effect on route developments.



7.7 Steps Towards Delivery



Suggested 'steps towards delivery' specifically related to air freight include the

following, relating back to the hierarchy themes of the strategy as indicated – Spatial, Mode Split (MS) & Making Best Use (MBU):

Ai1	Consider air freight in Wales in the context of need and efficiency, in particular overall CO ₂ emissions of freight travelling by air, and to encourage alternatives to air where speed is not a determining factor.	MS MBU
Ai2	Consider airport surface access, including access to airports outside Wales, as part of assessing and minimising the amount of road movements generated by air freight.	MS MBU
Ai3	Review the air freight market for Wales – related to SI8. In particular, to identify the amount of freight that leaves or enters Wales and makes use of air freight for an international movement using an airport outside Wales, considering the overall CO ₂ impact of movements.	Spatial
Ai4	Consider the potential for multi-modal import/export facilities using air and other modes. For example, co-locating cold-storage facilities to take advantage of air and sea imports of perishables.	MS MBU



Chapter 8: Pipelines

Strengths

- Pipelines are a safe and (once operational) environmentally friendly form of transport
- Pipelines operate around the clock without impacts on surface modes
- The high operating efficiency of pipelines means they represent one of the most energy efficient modes of transport. Cost per tonne moved is one of the lowest for any mode

Weaknesses

- Generally, pipelines are only suited to transporting liquids or gases
- Pipelines are a fixed link and hence only suited to medium and longer-term traffic
- Initial infrastructure cost is high and maintenance costs potentially expensive
- The planning process for new pipelines can be protracted and construction unpopular
- Pipelines do not generally receive the same recognition as other forms of transport

Opportunities

- Inland distribution of LNG imports
- New opportunities, such as sending products in solution or multiple product separation within pipelines using specific gravities, can grow market opportunities
- Increased use of pipelines can minimise environmental impact of transport of appropriate commodities
- New pipelines are being manufactured from even more long lasting materials
- Use as part of potential future developments in Carbon Capture and Storage

Threats

- Fluctuations in demand may prejudice long-term viability for some products
- Major service interruptions can be difficult to overcome

8.1 Background

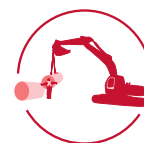


The use of pipelines to transport goods around the UK has a long history, and is particularly related to the transport of oil and oil-based products. The pipeline network developed significantly following the discovery and exploitation of North Sea oil reserves from the late 1960s onwards.

Pipelines are also an intrinsic part of the networks for water delivery and sewage

disposal and treatment, as well as local delivery of gas to households. These elements of pipeline use are not covered by the Wales Freight Strategy.

8.2 Current Situation



In the UK as a whole, pipeline traffic increased by almost 80% between 1980 and 2002, from 83 to 146 million tonnes per annum, peaking at 168 million tonnes p.a. in 1995. Currently, the share of goods lifted by pipeline is 7% of total goods

lifted nationally by all modes. Products transported by pipeline typically include natural gas, liquid gas, ethylene and oil based commodities including fuels and lubricants.

There are a number of pipelines across Wales, the most significant of which transport oil and gas products from Milford Haven, linking into the wider UK pipeline networks in the Midlands. Recent developments at Milford Haven to cater for increased imports of gas have the potential to supply some 25% of the UK's gas needs in the future. This has included construction of a significant (and controversial) new pipeline linking Milford Haven to distribution depots and other pipelines, near Swansea and in Gloucestershire.

8.3 Pipelines interacting with other modes



Pipelines provide fixed links between specific sites. The need to transfer to/from other modes is dependent on the product and site concerned. For example, crude oil is likely to arrive at a refinery by sea, and refined fuel products may then transfer between refineries and bulk storage sites by pipeline or rail. Onward transfer to final destinations could involve further pipelines, rail, road or a combination of modes depending on the type and scale of the next and final destinations involved.

8.4 Future Prospects



Specific opportunities for pipeline use in Wales include (UK-destined) imports of LNG at Milford Haven as discussed, product separation and non-oil commodities within pipelines (possibly using specific gravity or sending products in solution) and carbon capture and storage. In general, increased use of pipeline can minimise environmental

impact of transporting relevant products, with environmental credentials of pipelines being enhanced by improvements in pipeline technology, such as new pipelines being manufactured from even more long lasting materials.

The future of pipelines is currently seen as very commodity specific, i.e. suitable for large volumes of mainly liquid or gas products. As such, movements by pipeline are relatively static year on year.

Although most pipelines are dedicated to one particular product, this specialisation is no longer necessary. There has been a trend to using pipelines as multi-product lines where different products can be transported along the same line. There are even trials to send different products at the same time without fear of contamination because the products have different relative specific gravities, which enable them to settle separately at the destination. This means pipelines can be used more efficiently without the need for a 'flush', to clean before another product is sent.

The prospect of using pipelines for different product flows is therefore a possibility. Building further spurs off the existing pipeline network could feed additional substations and terminals and help to remove the need for onward transfer by road. New 'trenchless technology' that does not use conventional construction methods may help reduce the prohibitive initial costs of construction. Furthermore, 'futuristic' ideas including sending solid freight in containers enclosed in cylindrical vacuum capsules along pipelines using pneumatics or magnetism have also been suggested.

Carbon Capture and Storage

Carbon abatement technologies (CATs), which enable fossil fuels to be used with



substantially reduced CO₂ emissions, are being studied as methodologies to contribute to overall policies on reducing emissions. The most radical CAT option is carbon capture and storage (CCS) in which CO₂ is captured and committed to long-term storage (sometimes referred to as sequestration) to prevent it entering the atmosphere. This is as yet a largely untried proposal, but could make significant use of pipelines in the process.

Capture involves isolating and capturing CO₂ either prior to fuel combustion (pre-combustion) or post-combustion by separating it from the flue gases. Potentially, CO₂ might be captured from power plants and other large stationary sources. The gas is then transported to its storage location, with pipelines being particularly effective for larger volumes, where storage aims to prevent it from entering the atmosphere. CO₂ could be stored for the long-term in geological formations, such as depleted oil reservoirs or natural gas fields, deep saline aquifers and un-mineable coal seams.

8.5 Impacts and Outcomes



Social

‘Connecting the nation’ seeks to improve access to life opportunities. These outcomes are focused on people, and not directly related to freight transport. There may be some limited circumstances where the pipeline industry, as a potential employer, can play a part in improving opportunities for employment in key areas.

Economic

Facilitating the efficient and reliable movement of freight and connecting Wales with its markets are key outcomes of ‘Connecting the nation’. Pipelines are

particularly important to the transport of fuels, both primary fuels and those used in the generation of electricity. As such, in a modern economy, they are of particular importance in maintaining energy supplies. A specific advantage of pipelines is that they do not contribute to traffic congestion. Operationally, pipelines are a low maintenance and reliable mode, moving large volumes very economically. Providing preventative maintenance checks are done periodically a good performance can be expected 24 hours a day, although repairs are expensive if things go wrong.

Environmental

Once a pipeline is built there is little environmental intrusion or risk when compared to other modes of transport. Pipelines are a safe form of transport, do not generally come in contact with the general public, and seldom cause problems. There is a small risk of being targeted for terrorist attack (although this is perhaps less likely in Wales where the majority of pipeline runs are underground, and detailed routes are not generally known). Seismic conditions in Wales are generally conducive to pipeline developments.

However, there can be considerable disruption when pipelines are built. This can generate significant objection when plans are submitted for proposed pipelines, both because of disruption during construction, and on-going concerns that people may have about having a route running underground beneath land and property, in particular in relation to leaks.

8.6 Potential Issues



There is a high initial capital cost of building pipelines and these have increased because of stringent requirements to avoid

possible contamination of the ground and water courses. In addition, although non-productive, the cost of closure and recovery of a pipeline at the end of its useful life needs to be included in evaluation.

There is strong modal competition for the movement of oil and oil-related products in the UK. Both road and rail transport have developed more efficient payloads, through larger road vehicles and longer and heavier trains. Inland waterways and coastal shipping also offer competition for some movements.

Not all oil based products are suitable for moving through pipelines without the use of heat and insulated pipework. Light oils such as petrol, diesel and aviation fuel are generally suitable while the more viscous heavy oils are harder to move without using additional energy. Another constraint is the speed of product flow, which is typically less than 10 km/hr (similar to inland waterways).

Pipelines are very effective at moving large volumes of goods economically and safely over a fixed route with little operational impact on the environment and the minimum use of energy resources. However, since pipelines are a fixed link they are generally only economically viable for traffic that is likely to continue for the medium to long term. The initial cost of pipeline infrastructure can be very expensive and the planning process for new pipelines can be protracted and developments unpopular. Owing to its very nature, general awareness of pipeline transportation is relatively low, particularly in relation to its significance as a mode across several key distribution sectors.

8.7 Steps Towards Delivery



Suggested 'steps towards delivery' specifically related to use of pipelines include the following, relating back to the hierarchy themes of the strategy as indicated – Spatial, Mode Split (MS) & Making Best Use (MBU):

Pi1	Promote the potential role of pipelines among possible users, in particular in seeking to make innovative use of pipelines or seeking new opportunities.	MS MBU
Pi2	Support expansion of the pipeline network where appropriate, especially where it can be developed to avoid other infrastructure construction.	MS

Chapter 9: Actions and Partnerships

9.1 Delivering the Strategy



'Connecting the nation' sets out the long-term outcomes for transport in Wales, providing the focus for the plans which follow. The Wales Freight Strategy sets out objectives and options for freight transport. Delivery of 'Connecting the nation' at the national level will take place through a mix of a National Transport Plan and specific consideration of transport issues by other high-level Welsh Assembly Government policies. This will include trunk roads, rail, public transport and air travel, with freight-related schemes of national importance considered therein as appropriate with reference to the Wales Freight Strategy.

The four Regional Transport Consortia, made up of local authorities in Wales, will have responsibility for delivering 'Connecting the nation' in their areas. Their Regional Transport Plans will contribute to strengthening inter-authority co-operation, whilst helping to ensure local transport planning is consistent with 'Connecting the nation'. The Regional Transport Plans will elaborate details of the transport policies, schemes and other interventions that the Consortia wish to develop in their respective regions, as well as contributing to transport planning at a wider level and including elements taking forward 'steps towards delivery' of the Wales Freight Strategy. The Regional Transport Plans will identify appropriate more local issues and problems, in line with the policy direction given by 'Connecting the nation' and the Wales Freight Strategy. Solutions and schemes that are right for one location will not always be right in another.

Furthermore, planning advice to local authorities and developers will ensure that the outcomes of 'Connecting the nation' are taken into account when Local Development Plans are drawn up or new development is considered. This should include reference to the Wales Freight Strategy for freight-related issues.

There is a need for entrepreneurial flair in the freight transport sector, to drive forward the innovative measures and solutions required.

Key Delivery Messages

A number of key delivery messages apply to the 'steps towards delivery' identified in the Wales Freight Strategy. These reiterate the link between the Wales Freight Strategy and 'Connecting the nation' and include:

- All schemes and measures need to contribute towards the outcomes of 'Connecting the nation', the Wales Transport Strategy;
- All schemes and measures need to be publicly acceptable, if necessary with a programme of education and information;
- There is an imperative to work together effectively and support should be gained early in the process from all relevant bodies;
- Funding sources need to be fully explored to allow contributions towards achieving the outcomes to be maximised;
- There is a need to be realistic in what is achievable; and
- Regular review – to ensure the strategy is in line with current needs, requirements, and acceptability and to measure how well outcomes are being met.



9.2 Priorities



The Wales Freight Strategy is part of the overall transport policy approach of 'Connecting the nation', and is intrinsically linked to its long-term outcomes, guiding principles and implementation. In considering implementation, 'Connecting the nation' sets out a series of strategic priorities to focus on in its first phase, identifying a number of key areas and actions for early progression. These are the 'strategic priorities' of 'Connecting the nation' and include:

- Reducing greenhouse gas emissions and other environmental impacts from transport;
- Integrating local transport;
- Improving access between key settlements and sites;
- Enhancing international connectivity; and
- Increasing safety and security.

There are clear linkages to freight in the strategic priorities and actions of 'Connecting the nation', and these linkages have subsequently helped to identify priority 'steps towards delivery' of the Wales Freight Strategy, in particular in the short and medium terms. The main linkages are set out below:

'Connecting the nation' strategic priorities...	Key 'Connecting the nation' actions and relationship to freight transport...
Reducing greenhouse gas emissions and other environmental impacts from transport	<p>Actions include:</p> <ul style="list-style-type: none"> • Making more use of carbon efficient modes • Making sure that policies on land use take account of carbon equivalent emissions • Aiming to reduce the environmental impacts of transport <p>Specific actions targeted at freight are identified:</p> <ul style="list-style-type: none"> • Shift freight from road to rail; freight facilities grants; support for inter-modal transfer facilities; freight quality partnerships • Encourage short sea shipping; improve access to ports; support for port development
Integrating local transport	<p>Actions include:</p> <ul style="list-style-type: none"> • Plan for better integrated transport (including supporting the implementation of the Regional Transport Plans) • Support the integration of more sustainable modes <p>No actions are identified that specifically target freight transport, but some have the potential to have an effect:</p> <ul style="list-style-type: none"> • Detailed feasibility studies of options for rail improvements set out in the Wales Rail Planning Assessment



'Connecting the nation' strategic priorities...

Key 'Connecting the nation' actions and relationship to freight transport...

Improving access between key settlements and sites

Actions include:

- Improving access between north and south Wales
- Improving links between settlements
- Improving links into key settlements
- Make sure that all people have access to the transport system

The ethos of this priority is very much related to aims for freight transport, but no actions are identified that specifically target freight; some have particular links:

- Improve north-south links by public transport and road (where journey times and reliability are the priority)
- Improve the reliability of the road system especially between key settlements

Enhancing international connectivity

Actions include:

- Improve connectivity; and
- Support the more efficient movement of freight

All of the actions for this priority have some links to freight transport, and indeed an action specifically identified is to implement the Wales Freight Strategy; other examples include:

- Improvements to the infrastructure and reliability of the main east-west road and rail routes
- Better links (especially by public transport) to Cardiff airport and other airports serving Wales, including preparing a surface access strategy for Cardiff Airport
- Better road and rail-freight connections to main freight ports

Increasing safety and security

There are no specific links to freight transport. Actions include casualty reduction strategies, measures to improve security on the public transport network and safeguarding against terrorist and environmental threats.

9.3 Partnerships



The need to work together effectively is a constant theme in the delivery process of 'Connecting the nation' and the Wales Freight Strategy. Partnership working across the public, private and voluntary sectors will be crucial for the success of 'Connecting the nation' overall, and particularly so in delivering the Wales Freight Strategy.

The objectives of the Wales Freight Strategy will be delivered through the actions of the Welsh Assembly Government, Regional Transport Consortia and their members, the transport industry (including operators and network providers), freight transport users, organisations that can address environmental concerns and others, including where relevant those outside Wales (such as the Highways Agency, DfT and EU). It would be desirable for reciprocal

consultation to occur, so that the Wales Freight Group, Welsh Assembly Government and Welsh local authorities can consider relevant cross-border freight issues.

There is considerable enthusiasm to progress the Wales Freight Strategy. Much can be achieved by working together, sharing knowledge and looking for opportunities to add value. Different stages of delivery will manifest in schemes that best meet the outcomes of the strategy and are acceptable to the public. There is an on-going need for wider stakeholder and community involvement in the development of more detailed plans and schemes to ensure that proposals are acceptable in the locality they are being implemented, as well as consistent with national and local policy.

Partnership working is thus vital if knowledge and capacity are to be used to best effect and if opportunities to add and provide best value in taking the steps towards delivering the Wales Freight Strategy are realised. Stakeholder partnerships are of particular relevance to freight transport as it is an industry principally driven and organised by the activities of the private sector. As such, the well-established Wales Freight Group should continue to engage fully in consultation, and work on studies and policy initiatives by relevant organisations both in Wales, and where appropriate across the border. It is essential that the partners necessary for delivering proposals are involved throughout the entire process of appraisal, design and implementation. Furthermore, all policy areas of the Welsh Assembly Government have a part to play in maximising these outcomes. Of particular relevance to freight, absorption of Welsh Development Agency's economic development functions into the Welsh Assembly Government is helping the integration of overall policy making in transport.

As a result, a specific suggestion in the Wales Freight Strategy is that Freight Quality Partnerships (FQPs) or specific 'Task-and-Finish' partnerships be set up, with the location, need, scale and operation determined by local issues and requirements. There are a variety of potential roles for such partnerships across Wales. For instance, the strategies and action plans of local FQPs could be used to help further disseminate freight-related best practice throughout Wales.

Links with Other Policy Areas

A number of specific links with other policy areas are highlighted below, including some of the less obvious linkages, which may need to be included in considering delivery partnerships:

- **Regeneration** – for example, locational decisions of the distribution sector. Encouraging the distribution industry to consider locations in regeneration areas, where best use can be made of existing high quality transport infrastructure and that have the potential for small-scale local distribution centres.
- **Development planning** – for example, travel plans. Workplace travel planning could be used to consider opportunities for sustainable journey to work patterns for their employees of transport operators. Also, freight travel plans could be considered for industrial and other sites both during construction and in final use, particularly when choosing new site locations.
- **Skills** – in addition to addressing skills shortages through 'Skills for Logistics' initiatives, this could also include informing planners and procurers to appropriate levels of detail, especially in the public sector, on the role of freight and logistics – an example could be to consider the impact of loading restrictions on scheduling operations.



- **Waste strategy** – support potential opportunities for carriage of waste by more sustainable modes, in particular through promotion of rail and water transfer terminals. The STRAW study (Sustainable Transport Resources and Waste Report, May 2006) identifies a need for the whole life of products to be considered with a linked waste and recycling system, and furthermore making use of the most environmentally friendly freight transport available.
- **Environment** – for example, inputs into any noise or air quality assessments where freight traffic is a primary cause of concern.
- **Tourism** – for example, to minimise the impact of freight movements on tourism and the quality of the experience of tourist destinations.
- **Sustainable procurement** – such as assessing the freight transport implications of procurement decisions and to support complementary policies related to procurement strategies.
- **Road safety** – The Wales Road Safety Strategy covers specific issues of road safety, with the aim to reduce casualties, though this focuses on cars and motorcycles. The road freight industry has a good safety record.

technically focused, partnerships may be required.

The following tables outline some of the potential partner groupings that could be involved in developing ways forward to take the steps towards delivery. Note that in the tables:

- **Assembly** – relevant function or department of the Welsh Assembly Government.
- **Regional** – principally refers to roles that are likely to be undertaken by the Regional Transport Consortia, but could additionally include other functions and departments of local authorities, such as land use planning.
- **Industry** – includes owners and operators of infrastructure and services, as well as potential and existing freight customers.
- Some specific partners are identified where a role is defined, such as the DfT, EU and Network Rail.

Partners in **red** are the potential lead partners for each 'step'.

The 'steps towards delivery' have also been afforded priorities of 'Short', 'Medium' and 'Long' term. These are broadly defined as:

- **Short term** – commence in the period to 2010, though many will include on-going initiatives that carry on beyond this initial period
- **Medium term** – this brings in the remaining 'steps towards delivery' that encompass strategic priorities set out as the first phase of implementing 'Connecting the nation'
- **Long term** – steps towards delivery that look further into the future

In addition, steps towards delivery that effectively form themes running throughout the life of the strategy and beyond are indicated as **On-going**.

9.4 Steps Towards Delivery - Partners and Priorities



The Wales Freight Strategy will be best taken forward through a series of partnerships between the Welsh Assembly Government, the Regional Transport Consortia, freight transport industry and other bodies. Some of the multi-disciplinary partnerships that could be developed are FQPs, as noted above, though these may be too general to deal with some of the more specific, and potentially more technical, 'Steps Towards Delivery' identified in the strategy. In these instances, bespoke, and perhaps more

Strategic Issues: Steps Towards Delivery		Partners	Priority
S11	Promote the transport of freight in the most environmentally sustainable manner, in particular encourage to transfer to rail and water where practical	Assembly Regional Industry	On-going
S12	Take an integrated multi-modal approach to regional freight transport planning that achieves a sustainable balance between environmental and economic operational objectives	Assembly Regional Industry	On-going
S13	Review the current system of freight grants	Assembly Regional Industry DfT & EU	Short
S14	Review land-use policy to take into account opportunities for promoting and protect environmentally sustainable freight facilities (and feed into the Wales Spatial Plan and LDPs)	Assembly Regional	Medium
S15	Develop inter-modal freight interchanges in Wales; road/rail and road/rail/sea	Assembly Regional Industry	Medium
S16	Create a balance between freight and passenger on rail to ensure freight is afforded appropriate priority	Assembly Regional Industry Network Rail DfT	Long
S17	Work with others to develop integrated freight policies for ports and airports	Assembly Industry DfT	Long
S18	Develop a greater understanding of the patterns of movement of goods and role of freight in Wales (including waste transport)	Assembly Industry DfT	Short
S19	Identify suitable data sources to be monitored and collation of statistics	Assembly Regional Industry	Short
S110	Understand the current and likely future role of distribution centres and freight transport in Wales, including those in England that serve Wales	Assembly Regional Industry	Medium
S111	Consider the potential future impacts of charging on the road network	Assembly Regional Industry	Long
S112	Encourage more sourcing and consumption of locally sourced produce	Assembly Regional Industry	Medium
S113	Develop and promote a 'Freight Direct' information service for Wales	Assembly Regional Industry	Medium
S114	Encourage appropriate stakeholder partnerships; such as the Wales Freight Group and Freight Quality Partnerships (FQPs) at a variety of different levels	Assembly Regional Industry	Short



Strategic Issues: Steps Towards Delivery		Partners	Priority
SI15	Consider the scale of ideas and solutions; comparatively small-scale rural projects could provide locally very significant benefits in rural areas	Assembly Regional Industry	On-going
SI16	Implement the Sector Skills Agreement for Skills for Logistics	Assembly Regional Industry Training Bodies	Short
SI17	Consider how freight transport and networks are affecting and will be affected by climate change	Assembly Regional Industry	On-going
SI18	Consider seeking to expand the Welsh Assembly Government's powers relating to freight transport	Assembly Industry	Long

Road Freight: Steps Towards Delivery		Partners	Priority
Ro1	Improve the efficiency of road freight transport	Assembly Regional Industry	Medium
Ro2	Use ITS and telematics to improve efficiency	Assembly Regional Industry	Medium
Ro3	Reduce the environmental impact of road freight vehicles, in particular the effects of greenhouse gases emissions and pollutants	Assembly Regional Industry	Long
Ro4	Identify a strategic lorry route network for Wales, and key links across borders	Assembly Regional Industry	Short
Ro5	Develop localised lorry route maps	Assembly Regional Industry	Medium
Ro6	Maintain consistent network (particularly in rural areas)	Assembly Regional Industry	On-going
Ro7	Provide parking for road freight transport (locations, facilities required, pricing)	Assembly Regional Industry	Long
Ro8	Consider specific parking for drivers' rest area	Assembly Regional Industry	Medium
Ro9	Identify pilot freight consolidation centre and understand role of distribution centres in (and serving) Wales	Assembly Regional Industry	Short

Rail Freight: Steps Towards Delivery		Partners	Priority
Ra1	Work with Network Rail/DfT to ensure that the needs of the freight industry in Wales are taken into account	Assembly Regional Industry DfT Network Rail	On-going
Ra2	Increase the carrying capacity of the railway as cost effectively as possible, focusing on the passenger and freight links which make the biggest contribution	Assembly Regional Industry DfT Network Rail	Medium
Ra3	Develop the Welsh Assembly Government's role in rail infrastructure use and development and consider how Network Rail can best respond to the rail freight needs of Wales	Assembly Regional Industry DfT Network Rail	On-going
Ra4	Review the way that grants and subsidy schemes are implemented in Wales	Assembly Industry DfT & EU	Short
Ra5	Identify potential options for rail-road facilities	Assembly Regional	Short
Ra6	Ensure that land-use policies protect opportunities for promoting rail freight facilities, particularly potential road-rail interchanges	Assembly Regional Industry Network Rail	On-going
Ra7	Carry out scenario planning of rail proposals, identifying potential environmental benefits	Regional Industry	On-going



Ports and Shipping: Steps Towards Delivery		Partners	Priority
PS1	Promote use of inland waterways and coastal shipping where practicable	Assembly Regional	On-going
PS2	Promote Welsh ports and shipping overseas and assess the potential through associated international freight market intelligence	Assembly Regional Industry	On-going
PS3	Promote added-value activities at ports, identifying environmental benefits	Assembly Regional Industry	On-going
PS4	Identify port locations where new facilities could be developed, including potential multi-modal and port-based inter-modal sites	Assembly Regional Industry	Short
PS5	Consider port-related rail freight path availability	Assembly Regional Industry DfT Network Rail	Short
PS6	Review road routes to ports for freight (signage, limitations and standards)	Assembly Regional Industry	Medium
PS7	Continue to monitor and support improvements to skills in port and logistics	Assembly Industry Training Bodies	On-going
PS8	Review the way that grants and subsidy schemes are implemented in Wales	Assembly Industry DfT & EU	Short
PS9	Work with the DfT to develop an active policy on the future of ports, in order to help ensure that future development takes place in a sustainable way	Assembly Regional DfT	On-going
PS10	Review the sea freight market for Wales – related to SI8	Assembly Regional Industry	Short

Air Freight: Steps Towards Delivery		Partners	Priority
Ai1	Consider air freight in Wales, in the context of need and efficiency, in particular overall CO ₂ emissions and alternatives to air freight	Assembly Regional Industry	Short
Ai2	Consider airport surface access for air freight, including access to airports outside Wales	Assembly Regional Industry	Short
Ai3	Review the air freight market for Wales – related to SI8	Assembly Regional Industry DfT	Short
Ai4	Consider the potential for multi-modal import/export facilities using air with other modes	Assembly Regional Industry	Long

Pipeline: Steps Towards Delivery		Partners	Priority
Pi1	Promote the potential role of pipelines among possible users	Assembly Regional Industry Innovators	On-going
Pi2	Support expansion of the pipeline network where appropriate	Assembly Regional	On-going

9.5 Monitoring



The aims of the Wales Freight Strategy will be monitored as part of the Wales Transport Monitoring Strategy. This will set out a range of measures and indicators that relate to 'One Wales' and the other policies, plans and programmes of the Welsh Assembly Government, in particular the outcomes of 'Connecting the nation', and including environmental impact monitoring.

Monitoring the effectiveness of the Wales Freight Strategy will essentially take place at three levels:

- National – primarily related to the outcomes of the Wales Transport Strategy;

- Regional – relevant indicators developed through the Regional Transport Plans; and
- Statistics – examination of relevant freight statistics.

'Connecting the nation', the Wales Transport Strategy

The Wales Freight Strategy seeks to contribute to the outcomes of 'Connecting the nation'. The broad monitoring areas for each of the outcomes are outlined in 'Connecting the nation' itself, and will be developed in more detail in the Wales Transport Monitoring Strategy. Note that a key element of this process will be to take advantage of data collected for other purposes, such as sustainable development data and the annual 'Living in Wales' survey.



Most of the outcomes in ‘Connecting the nation’ are indirectly related to freight transport, and as such the sorts of indicators that can be used to monitor these outcomes do not apply to freight transport particularly well (if at all). However, two outcomes have closer links to freight, and the indicators for these outcomes likewise connected. These are:

Outcome 7: Improve connectivity within Wales and internationally

Indicators:

- Domestic and international connectivity. A measure of the range of destinations and the frequency of services.

Outcome 9: Improve the efficient, reliable and sustainable movement of freight

Indicators:

- The number of goods vehicle kilometres and associated CO₂ saved through the transfer of operations from road to rail in Wales.
- Travel time variance on key sections of the road network serving freight.

Regional indicators

The Regional Transport Consortia can identify freight-related indicators as part of developing the Regional Transport Plans as appropriate.

Freight statistics

A variety of freight statistics are collected by the Welsh Assembly Government, and on its behalf by the DfT and others, some of which are used in the indicators outlined above.

An appropriate digest of Welsh freight statistics will be published on a regular basis. This should include measures of freight activity across all modes, in particular highlighting the amount of freight transported in Wales and use of more environmentally sustainable modes such as rail and sea transport. Examples of statistics could include the amount of freight lifted in, transiting or delivered to Wales and the vehicle kilometres travelled and mode used.

