### 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.
Table 4.1 Road Freight lifted to/from and within Wales

<table>
<thead>
<tr>
<th></th>
<th>East Midlands</th>
<th>East of England</th>
<th>London</th>
<th>North East</th>
<th>North West</th>
<th>South East</th>
<th>South West</th>
<th>West Midlands</th>
<th>Yorkshire &amp; the Humber</th>
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<td>2,540</td>
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(DT: Continuing Survey of Road Goods Transport; 2006)
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):
<table>
<thead>
<tr>
<th>Ro1</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ro2</td>
<td>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.</td>
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<tr>
<td>Ro3</td>
<td>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.</td>
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<tr>
<td>Ro4</td>
<td>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’.</td>
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<tr>
<td>Ro5</td>
<td>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.</td>
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<tr>
<td>Ro6</td>
<td>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.</td>
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<td>Ro7</td>
<td>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.</td>
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<tr>
<td>Ro8</td>
<td>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.</td>
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<tr>
<td>Ro9</td>
<td>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.</td>
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