

Rail Freight Review 2010

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1 Introduction

1.1 Purpose of Freight on Rail Study

The Partnership has previously undertaken two studies on rail freight, the Baseline Assessment of April 2007 and the Rail Freight Assessment of April 2009. This report brings the findings of those reports up-to-date and draws from other studies including the Leamside Line Final Report November 2007 produced for Nexus (the Tyne and Wear Passenger Transport Executive) to develop a strategy for which the partnership can look to encourage appropriate freight to rail.

1.2 Summary of Previous Reports

1.2.1 2007 Baseline Assessment - Summary of Findings

This assessment shows that the future scope for increasing the volume of rail freight moved in Tyne and Wear may be constrained by a shortage of available paths on the East Coast Main Line (ECML). However, Network Rail's view is that there is some spare capacity as not all of the paths reserved for freight are used every day and extra paths can be found during periods of disruption to the West Coast Main Line (WCML) or to the Settle and Carlisle lines.

With respect to capacity issues, the route section between Tyne Yard and TurSDale junction is identified as a significant constraint in the Freight RUS with respect to rail freight. The Durham Coast line is an alternative route and re-activation of the Boldon East Curve is recommended as the best short term option for addressing this constraint and use of this curve will simplify access to and from the Port of Tyne.

The RUS suggests that the short/medium term recommendations (including the Boldon East Curve) will be sufficient to handle the industry's 2014/15 base case demand for the east coast ports. If further growth takes place beyond the industry forecast for the Port of Tyne and more generally for the ECML between Ferryhill and Newcastle, the RUS states that it may be sensible to look again at the re-opening of the Leamside line for freight traffic. At present it is considered that freight traffic alone would not support the necessary investment, but that the route should be protected.

It is likely that potential additional freight trains would consist of more coal, intermodal and aggregates. These are the types of commodity that had been growing in volumes across the national rail network. Certain retailers are experimenting with running intermodal freight trains as part of their supply chains and if reliability remains high then this type of traffic could be expanded. There is potential for additional port related traffic both from Tyneside and Teesport to run through the area as both ports look to expand volumes of containers in particular.

Key findings from this baseline assessment, valid in 2007, can be summarised as follows:

- The majority of rail freight movements in Tyne and Wear pass through Tyne Yard;
- Recent rail freight timetables record 307 train movements per week through Tyne Yard, with 51% taking place at night and 49% during the day (07:00 -19:00);
- 85% of the weekly total of freight trains operate between Monday and Friday;
- Approximately 32 freight trains run in both directions on a weekday;
- There are 40 freight train paths in each direction on a weekday;

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- 52% of loaded freight trains are carrying imported coal. This follows the curtailment of coal exports from the Port of Tyne in 1998 and coal imports commencing in 2004. 1.6 million Tonnes of coal were imported in 2006 and this is expected to grow to 2.5 million tonnes in 2007;
- Coal is moved from the Port of Tyne and a number of places in Scotland, including Inverkeithing, Knockshinnick, Hunterston deep sea port, Ayrshire coalfields, Millerhill and Mossend;
- Coal is primarily moved to power stations in Teesside, South Yorkshire and the Midlands;
- Other significant movements include Petrochemical (12 per week) and Steel (9 per week), Automotive (9 per week) and Enterprise (8 per week);
- Oil and Petroleum is delivered to Jarrow from Lindsey in Humberside; and
- Aluminium is moved from Lynemouth Smelter in Northumberland to the ECML for onward shipment north and south.
- Bauxite, alumina and aluminium are moved between Port of Blyth, Lynemouth and Fort William to service the Rio Tinto smelters at Lynemouth and Lochaber.

1.2.2 Rail Freight Assessment Report 2009- Summary of Conclusions and Way Forward

The main conclusions of this report covered the implications of developments in rail freight at a national and regional level, but it does highlight some implications for the local network that are discussed below:

1.2.2.1 Leamside Line

Re-activation of this line would be effective in addressing capacity and diversionary issues for passenger services on the ECML. There would be additional benefits to freight, particularly in relation to the Port of Tyne and potentially Nissan, with its recently announced expansion in accordance with the company's plans for mass production of the Nissan Leaf (a battery electric car). The line would subsequently open up connectivity to Teesside from Tyne and Wear, reducing journey times significantly. However, the line is currently out of use and consequently the infrastructure has deteriorated substantially.

Opening up a small number of stations for a local train service would benefit road users by reducing congestion and through the resultant reduction in carbon emissions. If freight trains were to run on the line, then this would open a trade corridor to the estates in Washington and Follingsby for Nissan. This has the potential to reduce the HGV-kilometres travelled and reduce the number of lorries on the A19 and A1. Furthermore, Durham County Council has an aspiration to open a freight terminal at Tursdale.

In the November 2007 report (submitted by AECOM formerly Faber Maunsell) it is stated that Nexus and the other stakeholders wish to protect the reopening potential of the line and the remaining infrastructure should be left intact. It recommended that the case for reopening the Leamside Line be further developed. In terms of next steps, it was suggested that further contact be made with Nissan Motor UK (NMUK) and the Port of Tyne to ensure that both of these significant businesses are able to engage fully in this process. It may prove useful to have private sector advocates and supporters. The identified 'Low Cost' options were recommended for further development and analysis, including analysis of wider economic benefits.

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1.2.2.2 Port of Tyne

If the proposal to develop a clean burn Power Station at Blyth, (Northumberland) were to proceed, the Port of Tyne would become a strategic point to augment the coal imported through Blyth port. Additional rail paths will be required for the transportation of the coal by rail via the Blyth and Tyne line. This complements the statement from the FTA emphasising their “support for the development of more terminal capacity in locations driven by the market that make best logical sense” (Rail Freight Terminals: FTA Policy, October 2009), which could be applied to the Port of Tyne.

There are also proposals to increase the capacity of Nissan and develop the site further. It is worth mentioning that any increased output would impact adversely on the road infrastructure. The opening of the Leamside line would enable the distribution of the cars, not only to the rest of the country on the existing rail infrastructure, but to the Port of Tyne for export.

The Network Rail RUS argues that the Boldon East Curve should be opened up, allowing trains from the port direct access to the Durham Coast Line in the direction of the Tees Valley, Northallerton and the ECML. As of September 2008 there was no publically available timescale for the reinstatement of the curve but subsequent enquiries to Network Rail show that they are aiming to complete the work in 2011. Nexus are in agreement that the curve should be reinstated but have concerns regarding the possibility of it interfering with the Metro line at Pelaw, potentially delaying the trains to South Tyneside.

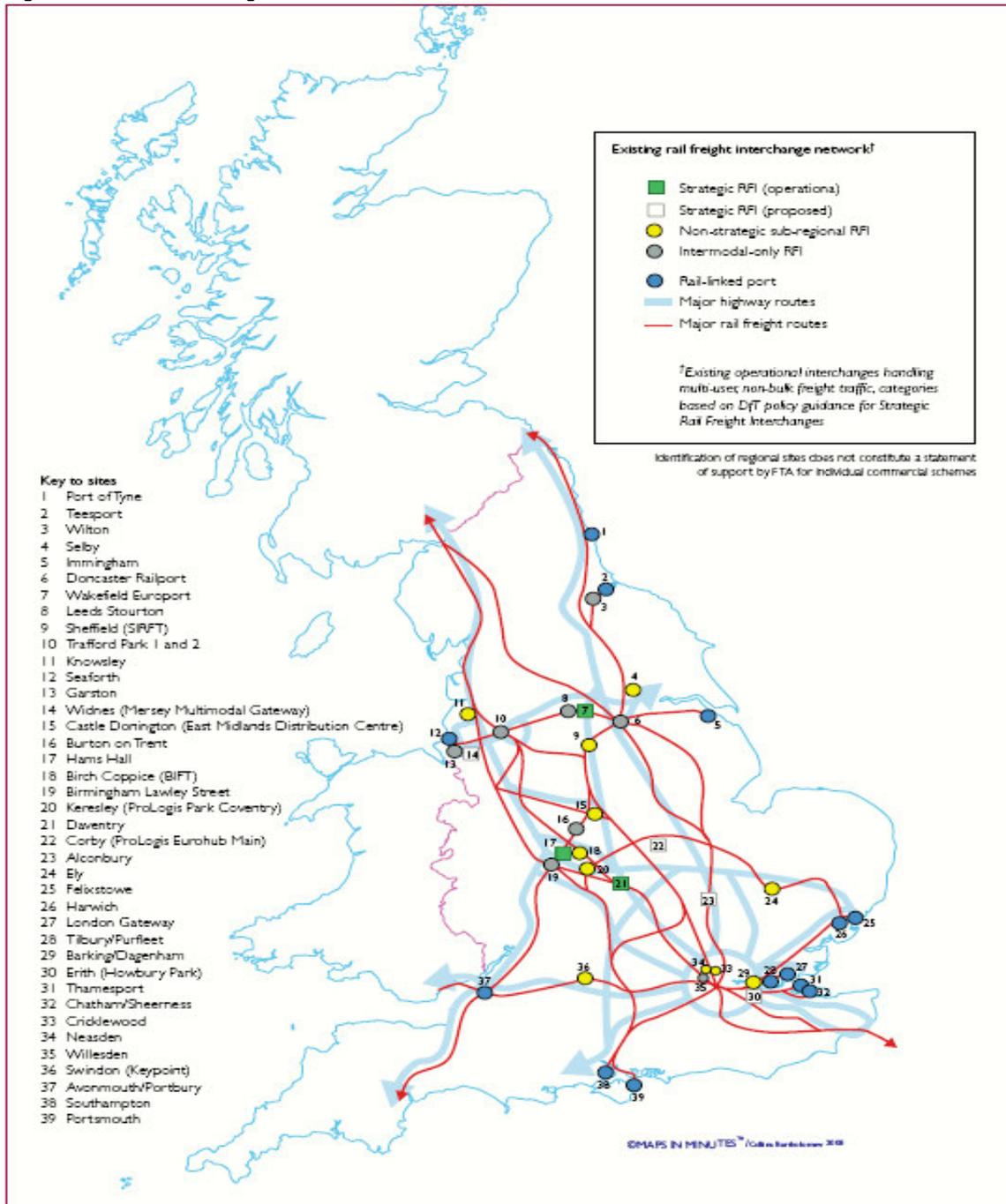
In August 2008 the link between the Port of Tyne and the ECML was upgraded in loading gauge to allow the transportation of 9' 6" cube containers. The link (connecting at Gateshead) provides easier access to the ECML, ensuring a healthy future for the industry, which is forecasted to grow over the coming years. There is a real opportunity for additional rail freight to move from the Tyne to other freight terminals across the country.

The Department for Transport's Freight Best Practice programme has developed an interactive Multi-modal map that details locations of Rail Connected Ports, Sea and Water Ports and Rail Terminals. The Multimodal Map is designed to show only 'Open User' Terminals meaning that terminals can be readily accessed by any company wanting to move freight.

Figure 1 details the current English Rail Freight Interchanges, of which the Port of Tyne is included, and highlights Strategic Rail Freight Interchanges that have been proposed.

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Figure 1 – Rail Interchange Terminals



Source: Rail Freight Terminals: FTA Policy, October 2009

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1.2.2.3 Ashington, Blyth and Tyne Line (ABT Line)

The ABT line is fully maintained to a standard for use by heavy haul trains. If the Blyth Power Station proposal becomes a reality then coal could be supplied from the North Harbour at Blyth. Due to capacity restrictions at the Port of Blyth, the coal will need to be shipped in from other ports such as Hunterston in Scotland and closer links with the Port of Tyne will be required. To enable the ABT line to reach its full potential, additional rail paths would be required. The route from Benton to Newsham would require extra lines to be installed to make it double track. Newcastle City Council, Northumberland County Council, Network Rail, Nexus and other partners are in discussions as to the economic outcomes and benefits of such a venture, which would provide increased freight and passenger connectivity for the whole of South East Northumberland. Nexus pointed out that the plans by NPower (the energy company) to build a new coal fired power station at Cambois has the potential to increase freight traffic over the Blyth and Tyne network and adjacent ECML, of course depending on the origin and direction of coal.

Rail freight can play a significant role in reducing lorry miles and the overall carbon footprint of the freight hauled. A number of schemes in the region have been identified that can contribute to a shift from road to rail, but the schemes are required to compete for finite resources.

1.2.2.4 Overall Conclusion

At a local level there are three schemes that would expand the network appropriately and that already have the backing of the local authorities, Nexus, and One North East. These are the:

- Leamside Line;
- Ashington Blyth and Tyne (ABT) line; and
- Re-instatement of the Boldon East Curve.

The Leamside line would provide an alternative route from the ECML in periods of congestion, and would extend to the industrial areas of Washington and East Gateshead to allow modal shift from road to rail. It would also provide connectivity for passengers to Newcastle and Durham through Houghton le Spring and Washington. The Network Rail RUS states that the projected increase in traffic does not currently give a strong enough case for re-instatement. However, if all other factors are taken into account, such as the wider economic benefits, the forecasted increase in coal and container traffic from the Port of Tyne, the possible mode shift by industries in Washington, the forecast increase in passenger traffic and use of the line as an ECML diversionary route, then the business case would be improved significantly.

In the case of the ABT line, there are currently a number of rail paths in use by the Alcan Smelter (Northumberland) and open cast coal mines. The upgrade from Newcastle to Ashington would include opening up sections of the line from single to double track, but is still heavily dependent on the opening of the proposed coal fired Power Station at Cambois (on the other side of the Harbour from Blyth town). Approximately 40% of the coal supply to the power station would come from the Port of Blyth - the remainder would be supplied through Hunterston Port via Mossend in Scotland and the Port of Tyne, significantly increasing the number of paths needed on the line. The latest Regional Funding Advice (RFA) includes a scheme to further upgrade the ABT line as part of the South East Northumberland Public Transport Corridor. The upgrade will consider rail passenger traffic between Newcastle and Ashington.

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The Boldon East Curve was identified in the Network Rail Freight RUS as having a business case to re-open to assist the increased demand from the Port of Tyne for additional rail paths. Network Rail has indicated that the latest projected completion date is 2011.

1.3 Overview of Rail Freight in Tyne and Wear

Understanding the current position provides a springboard to look at the scope for increasing the volume of rail freight. This section assesses the existing situation with respect to the variation in the number of movements during the day and night, industry type and origins and destinations. The National Railfreight timetable (Freightmaster 2009) has been used as the main source of information to enable comparison with figures provided in the 2007 report. It should be noted that rail freight movements are subject to a high level of variation within a relatively short time span.

1.3.1 Origins and Destinations of Movements

Table 1 (on page 8 of this report) shows the origins and destinations of the key rail freight movements through Tyneside in 2009. Rail (Issue 638: page 52) reports that “industrial users of coal have reduced in recent years, and the residual demand is mainly from metals, cement and chemical producers”. As a result, the prime destination for coal still remains the Yorkshire and Trent Valley power stations in Drax, West Burton and Cottam, but there is also demand from the cement works at Clitheroe, Ketton, Hope, and Wilton Chemical Works (Rail Issue 638:52). Coal is no longer moved from Inverkeithing, Mossend and Millerhill. Tyne Dock and Redcar remain as sources of coal along with the new sources of Ravenstruther, Leith Docks, Chalmerston, and Hunterston. Apart from coal from the open cast mines in Chalmerston and Ayrshire, the rest is imported from mainland Europe. Taking into consideration the Port of Tyne, “the volume of coal traffic in 2008/9 amounted to 47 million tonnes out of the total 103 million tonnes lifted by the freight operators, and the increase in the length of haul following the almost complete elimination of deep mining means that the traffic accounts for 38% of total tonne km movements” (Rail, Issue 638:page 52). Such imported coal forms a regular flow through the Port of Tyne, which has resulted in the port becoming active in the coal importing business. According to Rail (Issue 638: page 52),

“longer-term demand for coal-fired generating capacity has prompted plans to prolong the intended life of the base load power stations. At many sites the emission of pollutants would have meant a rundown in use, to conform with the European Large Combustible Plant Directive, and complete closure by 2015. Instead, a number of generators made decisions to invest in flue gas desulphurisation (FGD) equipment”.

Overall, the article in Rail (Issue 638: page 53) concludes that “although coal flows have changed out of recognition in recent years, demand for rail haulage will remain for the foreseeable future, given the supply needs for electricity generation until such times as new nuclear and wind-powered plant comes on stream”, indicating a future demand for rail services at the Port of Tyne. However, there are some power stations that are using other commodities to burn alongside coal. Such commodities include biomass, and as one example trains carrying woodchips are starting to run from the Port of Tyne to Drax Power Station.

Automobiles and parts are taken through Tyne Yard from Portbury Bristol to Mossend in Scotland. The movement of bauxite, coal, alumina and other materials involved in the aluminium manufacturing process takes place between Blyth and Fort William. According to an article in *Modern Railways* (February 2010), First GBRf are running the trains from Blyth ship unloading facility, Port of Tyne and Steadsburn to Lynemouth and Lochaber (Fort William). As

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part of the agreement with Rio Tinto Alcan (a global aluminium business), the article states “First GBRf will be developing a solution to transport finished products from Lochaber (Fort William) to Lynemouth and Port of Blyth”. This in turn will enable Rio Tinto Alcan to “reduce its transport emissions by up to 80%” (Modern Railways, February 2009: 12).

Loaded steel from Lackenby in Teesside has historically been taken by rail through Tyne and Wear to Dalzell in Scotland, but this has been affected by the economic downturn and the closure of the Lackenby steelmaking plant in January 2010.

Enterprise trains run nationally – movements include Mossend to Fort William, Tees Yard to Tyne Yard, and Tyne Yard to Mossend. There is also the recently started container movement from Tees Yard to Carlisle Yard. Furthermore, the second largest category of traffic in the Port of Tyne is “domestic intermodal (mainly containers from ports), which amounts to 25%” (Rail, 638: 52).

Bogie tank wagons bearing Oil and Petrochemicals are delivered to the petroleum terminal at Jarrow, in Tyne and Wear from Lindsey in Humberside.

One movement through Tyne and Wear not found on the Freightmaster 2009 timetable is the nuclear waste to Sellafield in Cumbria – the service runs via Sunderland from Teesside.

Table 1- Origins and Destinations by Industry Type

Industry Type	Destination	Origin			
Coal	Drax	Leith Docks	Ravenstruther	Tyne Dock	
	West Burton	Chalmerston		Tyne Dock	
	Lynemouth	Hunterston			
	Yorkshire	Leith Docks			
	Cottam			Tyne Dock	
Automotive	Mossend	Portbury			
Aluminium	Tyne Yard	North Blyth	Bedlington		
Enterprise	Tyne Yard	Fort William		Tees Yard	
	Mossend			Tyne Yard	
	Carlisle	Tees Yard			
	Tees Yard	Carlisle			
	Tees Dock			Tyne Yard	
	Grangemouth	Daventry			
Oil and Petrochemicals	Jarrow	Humber	Lindsey	Tyne Yard	Humber
Steel	Dalzell	Lackenby			

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Lime	Tees yard	Shap			
	Lackenby		Hardendale		
	Tyne Yard		Hardendale		

1.3.2 Number and Time of Movements

The 'economic downturn' is reported to have reduced the volume of freight traffic nationally across all modes. According to the Office of Rail Regulation (ORR), in 2008-09 (a second consecutive year of decline) total freight moved by rail was 20.63 billion net tonne kilometres; a 2.6% decrease compared to 2007-08. Total freight moved is at its lowest level since 2004-05. ORR figures in December 2009 also show a fall in UK rail freight of 10% last summer and this has impacted on the level of freight through Tyne and Wear. Between July and September 2009 rail freight fell nationally by 9.7% with coal leading all commodities with a 17% fall. Intermodal containers however rose by 4.2% and 1.1% for international and domestic traffic respectively.

As noted in the 2007 report, freight timetables do represent an advisory guide because they are very susceptible to change in the form of delay or outright cancellation, unlike passenger trains. In essence, while passenger trains use a planned path to run, irrespective of the number of passengers on the train, freight services only run if the demand exists, in accordance with the needs of the end customer.

Figure 2 presents the number of rail freight movements through Tyne Yard during the day (07:00-19:00) and the night (19:00-07:00) for each day of the week and by direction (north/south). The Q symbol denotes a reserved path when a freight train might run according to demand.

From looking at figure 2 it is apparent that there is still an almost even split between the day and night freight train movements in Tyne and Wear in 2007. For reasons of capacity this report has considered the empty train movements to have a clearer picture of the number of train movements on the network. For example there are trains loaded with coal travelling from Tyne Yard to the power station in Drax and empty trains going in the opposite direction to Tyne Yard.

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Figure 2 - Rail Freight Movements at Tyne Yard (Day and Night) in 2007

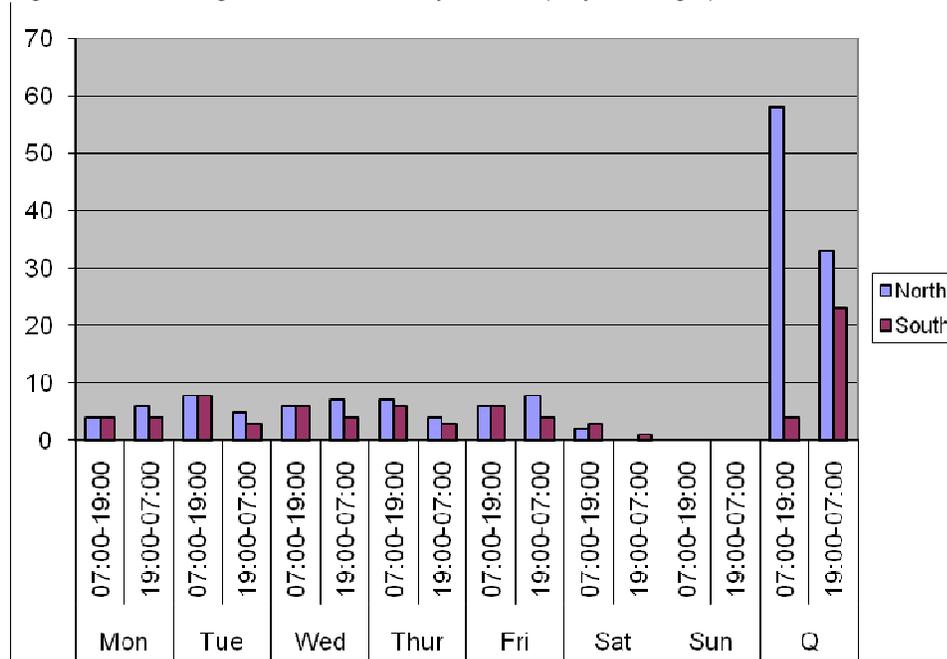


Figure 3 shows a comparison chart that has been drawn for each commodity between 2007 and 2010. One thing that is very obvious is the reduction in total train movements and services between 2007 and 2010 from 307 to 233. Of the loaded trains (138 in total), 80 are regular booked services and the other 58 are reserved path services dependent on demand. Referring back to figure 2, 46 trains (representing 57% of the regular loaded freight trains) move during the night compared to 34 (43%) in the day. The majority of the freight train movements (95%), inclusive of empty trains, occur on weekdays, as opposed to 5% during the weekend. It should be noted that there are more services running northbound than southbound.

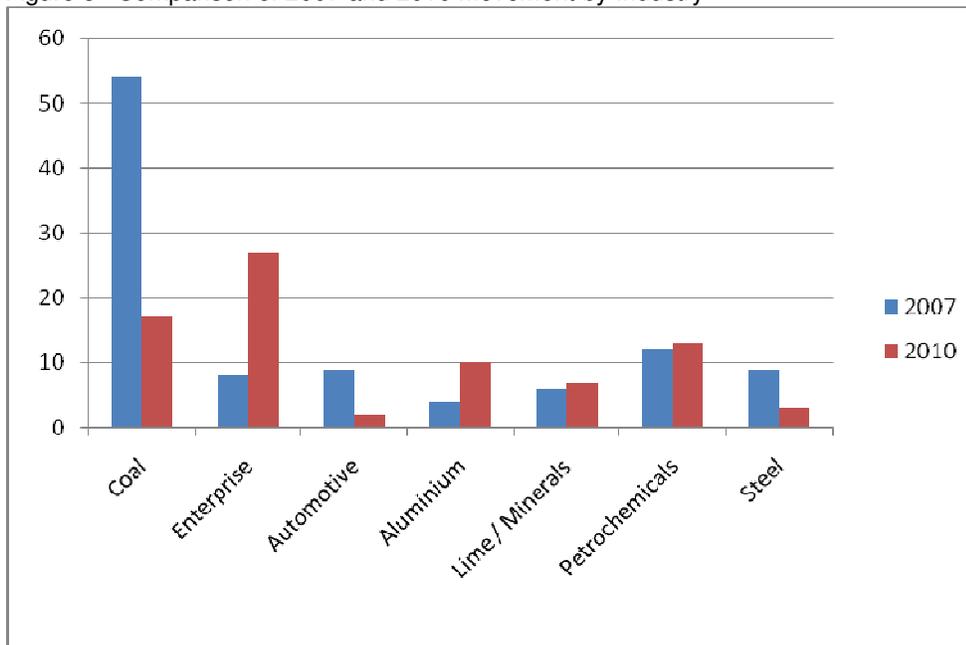
Figure 3 shows a decline in the movement of some commodities, namely coal, automotive and steel. It also shows an increase in enterprise goods (boxed goods, mixed freight, parcels); aluminium, lime/minerals and petrochemicals. The reason for the decline in coal trains can be attributed partially to the economic downturn, which has affected every mode. Presently there is a reduced level, (approx -25%), of coal traffic across the entire rail network due to high coal stocks at power stations and current low gas prices. According to Network Rail sources, it is likely that the current reduced levels will remain during 2010 and then return to previous levels during 2011.

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One interesting fact is that the length of coal trains has recently increased from an average 19 wagons to 23 wagons which has resulted in a reduction in the number of coal trains required and an improvement in productivity. It is suggested that DB Schenker have experimented with double length coal trains from the Ayrshire open cast and Hunterston deep sea facilities through the Tyne Valley at least as far as Tyne Yard.

The growth in enterprise freight can be directly linked to the opening of new origins and destinations of enterprise goods and also the increased interest in rail freight for the perceived sustainability benefits. One item not listed in the 2007 report was aggregates, which were historically carried at higher levels. This reduction in aggregate freight can be directly attributed to the decline in the building industry, which has impacted on the volumes moved all over the country.

Figure 3 - Comparison of 2007 and 2010 movement by Industry



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2 National Initiatives

2.1 Network Rail Route Plan 2009

The Network Rail North East Route comprises:

- East Coast Main Line through Newcastle;
- Freight only lines: the through line from Norton Junctions - Ferryhill (sometimes used for passenger train diversions), the Blyth and Tyne network and a selection of freight branches in the region;
- Northallerton - Newcastle via the Durham Coast through Stockton, Hartlepool and Sunderland including the South Hylton branch;
- Newcastle – Hexham – Carlisle route;
- Darlington – Middlesbrough – Saltburn, extending to Boulby potash mine; and
- The single track branches from Darlington to Bishop Auckland and Middlesbrough to Whitby.

A key Network Rail aspiration stated in this report is to enable access to Teesport and the Port of Tyne by intermodal traffic including 9'6" deep sea containers. Direct access to Teesport from the ECML requires gauge clearance works on Yarm tunnel (although an alternative exists via Darlington and Dinsdale); the Eaglescliffe – Stockton – Norton South Junction – Ferryhill is a key diversionary line for plans for gauge sensitive traffic to the Port of Tyne. Loading Gauge improvement work would also be needed on the line through Sunderland and the Newcastle to Carlisle line would need significant structural works to facilitate the use of standard flat-bed wagons for hi-cube 9'6" containers.

This report also stated that the possible reintroduction of passenger services on parts of the Blyth & Tyne freight network is another area currently under consultation with local stakeholders.

Of particular note is the announcement by the Government of the creation of High Speed 2, a new high speed rail route from London to the Midlands and eventually Scotland. The Northern RUS Scoping Document details that "should such a high-speed line be built, it would have a significant effect on long-distance travel patterns on the West Coast, East Coast and Midland Main Lines and to and from the North of England".

2.2 Strategic Rail Freight Network (SFN) : The Longer Term Vision

In May 2009 the DfT published its Rail Network Strategy. This document touched on many key issues affecting the rail freight industry, including the need for a European-gauge freight link, the need for a 'seven day railway', the need for early diversionary and resilience benefits and incentives for the use of electric freight traction, and the need for new capacity particularly on key intermodal routes to meet industry growth forecasts to ensure this additional traffic is not to be forced onto the congested road network. To secure this, the SFN project team will consider selective electrification schemes and Network Rail is undertaking two freight routing studies to make recommendations on the Routes to the North and an optimal Cross-London Freight Strategy (CLFS).

Interventions will be required to:

- Optimise freight trunk routings to minimise passenger/freight conflicts;
- Make the network available 24-hours a day, all year round;
- Eliminate pinch points; and
- Upgrade network capability.

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Such interventions incorporate the fact that “Rail Freight Terminals are to be included by the Government in the new planning process with National Policy Statements” as identified in ‘Rail Freight Terminals: FTA Policy’ (October 2009), as a means to improve the capacity of the network.

The Strategic Freight Network (SFN) investment in Rail Control Period 4, which will be complete by 2014, is focused on gauge enhancement to W10/12 and where possible train lengthening. Longer-term action and investment in the SFN will be required to deliver the following key elements:

- Longer and heavier trains;
- Efficient operating characteristics;
- Seven-day/24-hour capability;
- W12 loading gauge on all strategic container routes;
- European (UIC GB+) loading gauge from High Speed 1 (HS1) to the Midlands;
- Increased freight capacity;
- Electrification of freight routes;
- Development of strategic rail freight interchanges and terminals; and
- Protection of strategic freight capacity.

2.3 Network RUS Electrification Strategy – Draft for Consultation

This RUS released in 2009 outlined Network Rail’s strategy for rail electrification and identified the Tyne Dock branch as a route with significant level of freight traffic that could be hauled by electric traction if the route were to be electrified. It also stated that there is a significant level of adjacent freight traffic that could be beneficially rerouted to take advantage of the electrification. Another route in the region mentioned is the Tyne Valley route from Newcastle to Carlisle; if electrified this route would provide a viable diversionary route for linking the East Coast routes to the West Coast Main Line, which is already electrified. Other possible schemes in the region will be the electrification of the Northallerton to Middlesbrough line, Thornaby to Sunderland and the conversion of the London to Sunderland and Middlesbrough to Newcastle services to electric traction. The document also mentioned Network Rail’s aspiration for a seven day railway delivering a more reliable passenger and freight service. The March 2007 Freight Route Utilisation Strategy (Freight RUS) identified some rail routes that Network Rail would like to be W12 gauge cleared for freight operation. Network Rail has adopted the Freight RUS as a policy for implementing any modification on these identified routes.

3 Regional Initiatives

3.1 Delivering a Sustainable Transport System DaSTS

This was a submission to the DfT from the North East region in June 2009 on strategic priorities and a work programme to deliver a sustainable transport system to the region. This report highlighted the difficulty the regional rail network is having with access to national and international markets. The main reason identified was the inadequate loading gauge in most parts of the region, which limits the accommodation of high cube containers. In the proposed work programme to deliver the DaSTS initiatives the report identified the regional aspiration to contribute to the national freight modal shift study by addressing these issues:

- Seek to increase freight transported to/from the region particularly through the ports;
- Seek to raise the mode share of freight transported by rail;
- To reduce the adverse impacts of road freight on the region; and
- Seek to be part of a national initiative to shift freight onto rail.

It also highlights the aspirations of the region to contribute to a national study to look at:

- The proportion of freight that terminates, originates and passes through the region;
- Understanding the added value to the region from increasing the amount of freight transported to/from the regions and through the ports;
- Understanding and, where possible, quantifying the excessive road and rail miles of freight not using the nearest ports; and
- The potential for increased rail freight to/from key destinations in the region and through the region and the potential this gives in terms of national and international freight movements.

3.2 East Coast Main Line (ECML) Route Utilisation Strategy

The improvement of the regional rail network in the North East is essential towards achieving significant shift from road to rail in line with wider economic, social and environmental objectives. The ECML is an essential part of the transport links between the North East and London as well as other parts of the United Kingdom. A key content of this RUS is the reinstatement of the Boldon East Curve rail line, thereby allowing trains from the Port of Tyne direct access through Sunderland to the southbound Durham Coast Line; freeing up capacity on the main line through Durham and the section between Port of Tyne and Tursdale Junction. With a possible completion date of 2011, Network Rail hopes this will remove the restriction on the Durham Coast Line for freight by the absence of direct connection to the Port of Tyne from the south, and allow imported coal services from the Port of Tyne to be routed via the Durham Coast, avoiding the congested section of the ECML between Northallerton and Newcastle. The Durham Coast Route capacity will also be increased by signalling works due for completion in mid 2010.

The ECML RUS also recognised that the reopening of the Leamside Line would provide robust freight paths through the region, while stating that it would involve a major capital expenditure very unlikely to be justified with network flexibility benefits alone.

3.3 Planned Network Rail Northern Route Utilisation Strategy

Of particular relevance to this report is the Northern RUS Scoping Document which is part of the Network Rail Freight Route Utilisation Study (RUS), which was published in March 2007 (Network Rail is nearing the completion of its first generation of Route Utilisation Strategies and this is estimated to be completed by the Autumn of 2010),

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The Northern RUS document includes outputs from the Manchester Hub Study, Strategic Freight Network study, Cross boundary work stream, DfT's National Network output and the Freight Routes to the North Study.

According to the Network Rail 'Northern RUS Scoping Document' the purpose of the RUS is:

"to achieve the route utilisation objective, as defined in Condition 1 of the Network Rail's Network Licence: namely, the effective and efficient use and development of the capacity available, consistent with funding that is, or is reasonably likely to become, available during the period of the route utilisation strategy, and with the licence holder's performance of the duty" (p3).

The Northern RUS brings together all of the key strategic issues facing the future of rail freight and identifies a strategy for accommodating growth and changes in current demand on the network, which looks towards a 30-year planning horizon to comply with the Transport White Paper published in 2007. The strategy has been developed with the involvement of freight operators and other key industry players (such as DfT, Passenger Focus, ORR, Local Authorities, Regional Development Agencies, Rail Freight Group, Regional Transport Forums and ATOC). With respect to the Northern RUS, Network Rail states that "it will assume a 2014 baseline and will update industry passenger demand forecasting where appropriate and use freight demand forecasts from the Strategic Freight Network process" (Northern RUS Scoping Document, p3). The Northern RUS Scoping Document identifies how in the freight sector, emphasis has been placed on projects 'involving capacity enhancement schemes and gauge clearance for 9'6" containers on conventional wagons' (p4), in order to produce a baseline for freight and predict trends by utilising the Strategic Freight Network demand forecasts for 2019 and 2030 (p4).

A Route Utilisation Strategy (RUS) for Northern England was recently announced by Network Rail to be published before the end of 2011 covering the North West, parts of Yorkshire & Humber, and the North East to build upon the work of the East Coast Main Line (ECML) RUS. The area covered by the RUS also sits well with the area covered by The Northern Way initiative. Tyne and Wear Integrated Transport Authority has identified that the new RUS will provide a useful pan-Northern strategy to test the aspirations for future ECML and freight services. Nexus will be making inputs into the production of this strategy and this is an opportunity for the Tyne and Wear Rail Partnership to liaise with Nexus to make rail freight aspirations in the area a significant part of the report.

4 Mode Choice

4.1 Factors That Affect Modal Choice

Mode choice for freight transportation within the UK is governed by a number of factors. With a good knowledge of the pertinent operational and other characteristics as they affect each market segment, a freight manager/decision maker should start the process by considering the following physical factors;

- Infrastructure availability (freight terminals and interchanges)
- Access to rail network and waterways;
- Volumes;
- Commodity Type; and
- Distances.

Before making any decision, essential commercial questions are asked, how much will it cost and when does the customer want the goods?

The following factors are also important as specific considerations for each type of operation:

- Fuel pricing variation;
- Staff resourcing including Working Time Directive issues;
- Supply chain resilience;
- Reliability and punctuality;
- End to end journey time;
- Customer service;
- Flexibility of services offered;
- Carbon agenda/environmental issues

The FTA makes a good point when it states “the UK needs more rail freight capacity if we are to get as much freight off the roads as possible. Rail Freight Terminals are the stations of the freight railway: a network of them that meets both existing demand and forecast growth is essential” (Rail Freight Terminals: FTA Policy, October 2009).

4.2 Why Should we Shift Modes in our Supply Chain?

There are many benefits to be derived by the public and private sectors from greater utilisation of rail freight. One such benefit is the potential to reduce significant amounts of carbon dioxide emissions and as a result reduce carbon footprints. The Freight on Rail (FoR) partnership, founded in 2000, aims to promote the use of rail freight to take goods off the road. The FoR group works with regional and local authorities, as well as central government, to increase the volume of freight carried on the railways. One of its aims is to protect transport corridors for future rail use, for both short and long term rail freight forecasts, within Local Development Frameworks using ‘PPG13 safeguarding policies’ (Rail, issue 637: pg 43).

“Rail offers a carbon dioxide reduction solution to government. Transport is responsible for 28% of carbon dioxide emissions in the UK, and 92% of domestic transport emissions are from road modes – tonne for tonne carried, rail freight creates 70% less carbon dioxide than the equivalent road journey” (Rail, 637: 43).

Capabilities on project:
Transportation

As mentioned previously, the agreement between First GBRf and Rio Tinto Alcan to ship raw materials between the Port Of Tyne and Fort William and backload the finished products has the potential to reduce “transport emissions [for Rio Tinto Alcan] by up to 80%” (Modern Railways, February 2010: 12), highlighting the potential benefits of modal shift. There are existing opportunities in the Tyne and Wear rail network for modal shift for retailers, logistics operators, and consumers of bulk goods. Experience has shown – with plentiful case studies - that companies who shift some or all their supply chains to rail can achieve improved reliability. Apart from the environmental benefits of emission reduction, other benefits that could be derived include:

- Reduction in road traffic volume impacting on congestion;
- Improved journey time, reliability of delivery and collection with less delays caused by road congestion;
- More delivery options and building resilience into your supply chain;
- Minimised exposure to drivers’ hours and working time directive issues;
- Reduced impact from fluctuations in fuel price;
- Reduced number of vehicles required in the fleet; and
- Improved road safety by reducing the number of vehicles on UK roads, hence reducing accident rates.

Such benefits are compounded by the FoR partnership, who argue that rail is safer than road transport, can also help to relieve road congestion, and can offer a reliable alternative to road transport as road congestion worsens. As a result, they are “campaigning for the right policies and upgraded infrastructure to get more freight transferred to rail” (Rail, issue 637: pg 43). This has involved them lobbying the Government to provide the planning framework at national, regional and local levels to promote rail freight. Such lobbying has included the request to “include rail freight schemes in regional funding allocation bids for Network Rail’s control period 5 after 2014, and to make provision for rail freight in local transport plans” (Rail, issue 637: pg 43). This is to ensure that planning permission for new terminals/interchanges is made available, as without it freight cannot be transferred to rail, and that a level playing field is created for all modes that takes into account all the external and congestion costs.

Rail may very infrequently provide a viable alternative to short distance trips made in smaller vehicles and vans. It may never provide the flexibility of road vehicles, but it could provide a cleaner and potentially cheaper option to large vehicles on long hauls.

4.3 Measures for Capacity Increase in Tyne and Wear

It has been identified that as a legacy of the industrial past of the North East region, Tyne and Wear has a large number of mothballed or disused lines, terminals, and private sidings, which might not all be appropriate to modern rail freight operation. An audit of all the disused facilities in the area will give a clearer picture of the lines that could still be put to use. The lines may become diversionary lines to be used during maintenance and in line with the 7-day railway aspirations of the industry. The analyses of the Tyne Yard freight movements have shown that there are huge gaps with spare capacity during the night and at weekends. Therefore the Tyne and Wear area should engage with Network Rail to facilitate a 7-day freight operation ideally by 2014.

Increased rail freight capacity in Tyne and Wear is more likely to be achieved by:

- Selective segregation of freight and passenger flows;
- More efficient loadings of trains with possible consolidations centres for intermodal containers (i.e. intermodal trains running at or close to full);

Capabilities on project:
Transportation

- Maximising volume/train while still having trains perform adequately in path (775m long intermodal trains);
- Alleviation of well known and key network bottlenecks (i.e. Tyne Yard – Tursdale);
- More efficient use of existing freight paths (i.e. less instances of rail Freight Operating Companies (FOCs) holding paths that are little used as "operating insurance" provision);
- Better utilisation of some existing secondary routes (i.e. Durham Coast Line);
- Upgrade of certain diversionary routes to provide a robust service; and
- Re opening of currently mothballed routes (i.e. Leamside Line).

4.4 How to Achieve Modal Shift in Tyne & Wear

The relevance of this study to modal shift is that there is a need to make the fullest use of the rail network in Tyne and Wear. Competitiveness of the railway through efficiency is the key to attracting additional customers through modal switch. The Tyne and Wear rail network is not optimised for freight, and rail freight needs to be marketed. Conflicts occur between passenger and freight requirements in Tyne and Wear, eroding network capacity and reliability. An evident example is the concern raised by Nexus about the potential for a re-instated Boldon East Curve interfering with the Metro line at Pelaw.

Freight volumes are forecasted to double on the UK rail network (taken on a national perspective) within the next 2 decades leading to higher demands on the UK's largely mixed traffic network. Other local factors are also predicted to lead to higher passenger and freight rail traffic in Tyne and Wear. Interventions to support this growth will need to be carefully targeted to maximise mode shift. Efforts should be concentrated, but not limited to, the industries and type of commodities where rail has a certain comparative advantage.

Extensive consultation with stakeholders will be key, and moves should be made by the Tyne and Wear Freight Partnership to bring together a range of organisations, including transport operators, industry representatives, local authorities, Network Rail, and key local stakeholder groups to facilitate actions targeted at bringing modal shift to rail.

The main challenge will be the building of sufficient interest. Furthermore, the engagement of operators and retailers will be crucial. The experience of the Tyne and Wear Freight Partnership suggests that the following key actions are necessary:

- Identify the key drivers of freight and the key industry players in the area for individual or group consultations;
- Initial research should be carried out with operators and customers both in and around the area of their existing supply chains and issues surrounding them;
- Determine the barriers that currently prevent the use of rail mode;
- Identify how these barriers can be overcome;
- Identify a clearly defined action plan focused on addressing any issues raised by the stakeholders;
- Maintain good communication links with the stakeholders with information on current trends in the market and future government policies (RUS etc.) that may impact on their operations;
- Suggest that Network Rail's Freight Manager for the North East could offer practical advice to rail freight stakeholders on how to optimise their operations and take full advantage of existing and future policies;
- Simple solutions like improved lorry parking provisions at freight terminals should be looked at;

Capabilities on project:
Transportation

- Nexus and T&W ITA should have the benefits of improved rail freight improving traffic flow and bus journey times presented to them;
- Encourage partnership between retailer and rail logistic firms; and
- Study existing and forecasted freight flows to establish the extent of convertible road flows taking into account planned network.

The Tyne and Wear Freight Quality Partnership will need to engage directly with Network Rail on the Northern RUS and liaise with Nexus to make rail freight aspirations in the area a significant part of the report.

4.5 Identified Stakeholders

The following is a suggested list of key stakeholders for possible consultations including:

- Nissan Motor UK (NMUK);
- Drax Power Limited;
- Rail Freight Group(RFG) member companies operating in the North East including Freightliner, DB Schenker, GB RailFreight, and DRS;
- The Port of Tyne, Port of Sunderland;
- Northumberland and Durham County Councils;
- Network Rail;
- Retailers like Tesco, ASDA, Sainsbury's, and Marks & Spencer etc.;
- Office of Rail Regulation (ORR);
- Tyne and Wear Integrated Transport Authority and Nexus
- One North East;
- Government Office for the North East;
- North East Combined Transport Activists Roundtable;
- Chamber of Commerce North East;
- Freight on Rail;
- Confederation of British Industry North East;
- Royal Mail [transfer is the objective; some mail has returned to rail and there is a custom built terminal at Tyne Yard, north end - currently disused]; and
- Rio Tinto Alcan.

5 Current Trends in Tyne and Wear

5.1 Tyne & Wear Integrated Transport Authority and Nexus

In response to ECML RUS, the then Tyne & Wear Passenger Transport Authority TWPTA and Nexus stated that the increased speed differential between freight and passenger services could represent an opportunity as well as a threat to freight services. Nexus and TWPTA welcomed the potential increase in rail borne traffic from the Port of Tyne, but objected to the proposed restoration of the Boldon East Curve because the need for northbound freight to cross the southbound track in the area has the potential to cause disruption to metro operations between Sunderland and Pelaw. Should the Boldon East Curve restoration go ahead, Nexus recommended that where possible, northbound freight traffic into the Port of Tyne be routed via Pelaw and Brockely Whins junction.

Nexus/ITA was of the opinion that the more sustainable solution is through the restoration of the Leamside Line demanding that the final document contained an assurance that the line will be maintained by Network Rail for possible future use. It also recognised that improving the Durham coast to at least a W8 or W9 Gauge will assist it to serve as a diversionary freight route, since the current W6 gauge will not make it accessible to all ECML freight traffic. Newcastle City Council, Northumberland County Council, Network Rail, Nexus and other partners are in discussions as to the economic outcomes and benefits of such a venture, which would provide increased freight and passenger connectivity for the whole of South East Northumberland.

5.2 Latest on the Boldon East Curve, Leamside Line and Ashington, Blyth and Tyne (ABT) Line

The restoration of Boldon East Curve planned by Network Rail to bring freight directly onto the Durham Coast Line is still on course for completion by 2011, although the commencement of work has been deferred.

The on-going campaign to re-open the Leamside Line to passenger and freight traffic is gathering momentum. The influential Association of Train Operating Companies (ATOC) is the latest group to join the campaign. In a report released in summer 2009, ATOC argued that demand for rail services has soared in the last decade, thereby necessitating the refurbishing and reopening of several old routes, including the Leamside Line and the enhancement of the ABT freight line for passenger services. Northumberland County Council has also commissioned a study into the reinstatement of a passenger service on the ABT and has met with regional partners and Network Rail to review the work carried out to date. Whilst the core passenger service proposed would use the route from the ECML at Benton Junction to Ashington, the freight network already includes Ashington, Blyth Harbour and the Alcan Smelter together with access to the ECML at Morpeth. Some sections are currently only single track but there is a potential for a capacity increase and the possibility of engaging with rail freight interest groups during the scheme's planning stage.

6 Conclusions

6.1 Future Trends in Tyne and Wear

The Tyne area is still operating with constrained capacity due to a congested section of ECML between Tyne Yard – Tursdale junction. An increase in rail capacity would be achieved by the reinstatement of the Boldon East Curve and possibly the Leamside Line. The electrification of key routes and their enhancement to potentially W12 loading gauge clearance will be a welcome development in the area, and provide alternative routes, thus improving network resilience and reliability.

The expected return of coal movement by rail to previous levels nationally during 2011 should see a return to, or increase above, previous levels of coal transported by rail through Tyne and Wear.

The January 2010 issue of Modern Railways reported that work will start in early 2010 to build a storage and handling area in South Shields for biomass fuel following a £16 million deal signed between the Port of Tyne and Drax Power Station. Under the new deal, which has started in 2010, it is estimated that First GBRf will operate four train (21 hopper wagons) services a day, taking timber based biomass fuel from the Port of Tyne to Drax Power Station. As Drax Power Limited and more power stations move towards more renewable energy sources, it is expected that the demand for biomass will rise increasing throughput at the Port of Tyne.

As the UK and the world economy slowly picks up from recession, bulk rail freight traffic is expected to rise. Intermodal container and wagonload traffic to and through Tyne and Wear is also expected to rise in keeping with recent trends.

The benefits derived from Modal shift will reduce the volume of road freight traffic, ultimately reducing congestion. Furthermore, road safety will be improved by the reduction in HGV movements. Improvement in journey time reliability will reduce drivers' hours impacting on companies, allowing operators to review required fleet numbers.

Auditing of the railways, used and unused, will identify capacity enhancement for both passenger and freight movements. It is envisaged that there would be greater connectivity for industrial areas such as Washington, where Nissan have recently announced the production of electric car batteries and the production of the first mass produced electric cars, such as the Nissan Leaf.

6.2 The Way Forward

Extensive consultation with stakeholders will be key to the progress of any initiatives to improve connectivity in the North East. A national study 'Delivering a Sustainable Transport System' (DaSTS) will be implemented in 2010, which should identify similar issues to those this report has highlighted. Moves should be made by the Tyne and Wear Freight Partnership to bring together a range of organisations including transport operators, industry representatives, local authorities, Network Rail, and key local stakeholder groups into a workshop to identify actions targeted at bringing modal shift to rail. The workshop would analyse the present day issues, look at how those issues can be addressed, and how to build a business case to lobby the government for additional resource.