

Freight Strategy for the County of Staffordshire



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Strategy Update

In November 2018 this strategy was refreshed in accordance with recommendations set out by the Prosperous Staffordshire Select Committee, the previous strategy was dated 2010.

Setting the Scene

Staffordshire's Strategic Plan 2018-2022 sets out a vision for a Connected Staffordshire where everyone has the opportunity to prosper, be healthy and happy. It identifies that the people of Staffordshire will:

- Access more good jobs and feel the benefits of economic growth
- Be healthier and more independent
- Feel safer, happier and more supported in and by their community.

The vision for this strategy is to minimise the adverse impacts of freight in Staffordshire whilst maximising its economic benefits.

Road and rail freight has an important role to play in delivering this vision. The significant demand for products by residents and businesses within Staffordshire and the employment opportunities provided make logistics a vital sector to maintain and grow.

The policy context for this Freight Strategy document comes from the Staffordshire Local Transport Plan (LTP3) and government policy 'Creating Growth, Cutting Carbon: Making Sustainable Local Transport Happen' whilst consideration has also been given to other strategic freight publications such as the West Midlands Freight Strategy 'Supporting our Economy tackling Carbon' 2016.

Staffordshire County Council will continue to work with neighbouring authorities and key stakeholders including City of Stoke-on-Trent Council, Highways England and Midlands Connect to deliver this strategy.

Working with Midlands Connect enables ongoing coordination of our activities with key partners. They have undertaken substantial work looking at road and rail freight at a regional level which has helped to inform this strategy.

Whilst Staffordshire County Council will continue to work with MPs to lobby for improvements and support, National freight policy is ultimately determined by the Department for Transport.

Background

Road haulage is the most common mode for freight distribution locally, regionally and nationally and forms an integral part of modern life.

Local Issues

As the Local Highway Authority for Staffordshire the County Council receives numerous requests for action associated with Heavy Goods Vehicles (HGVs) on the county's roads. The main topics of these requests are:

- Implementation of 7.5t weight restrictions;
- Additional enforcement of existing weight restrictions;
- Overnight HGV parking in laybys and business parks, and implementation of parking restrictions;
- Environmental issues concerning noise, vibration and air quality;
- Planning concerns relating to new employment developments increasing levels of HGVs and lack of associated HGV parking facilities;
- Inappropriate routing of HGVs specifically relating to new construction and mineral extraction sites, and use of unsuitable country lanes;
- Concerns relating to HS2 construction routes; and
- Impacts of Highways England diversion routes particularly in relation to overnight works and trunk road closures.

The occurrence of bridge strikes in Staffordshire by HGVs is also of significant concern to the County Council and Network Rail. Where diversion routes are being utilised adequate advanced signing of low structures should be introduced.

For the communities impacted by road freight movements it could be said that there will never be a popular lorry.

Significance to the Economy

The freight transport and logistics sector is a major part of the economy with approximately 4.7% of national GVA accounted for by the transport and storage sector. Industry in the UK spends more than £75 billion per annum on transporting goods by road and rail (Business Register and Employment Survey, 2015).

In Staffordshire the transport and storage sector employs around 24,600 people, a significant proportion of these, around 7,500 in 'freight transport by road' and around 8,500 employees in the 'storage and warehousing' sector. The freight and logistics industry is significantly more important to the Staffordshire economy than to the regional and national economy with the 'freight transport by road' and 'storage and warehousing' sectors accounting for 2.2% and 2.4% of total employment respectively, by comparison to 0.8% and 0.8% of national employment (Business Register and Employment Survey, 2015).

The Eddington Transport Study¹ commissioned by government concluded that a healthy transport network, capable of fulfilling the expectations of industry for freight movement is vital to the economic health of the nation. The economic and financial stability of the country cannot be reconciled with a transport infrastructure in decline. Poor transport links adversely affect the competitiveness of industry, causing

inefficiencies in the supply chain for manufacturing and services and ultimately impacting negatively on the consumer.

Currently the supply and distribution of raw materials and manufactured goods can only be achieved by the use of road freight, indeed all final mile delivery and collection is made by road freight.

Local, Regional, National and International Freight Networks

Staffordshire's Network

Primary Road Network

The Primary Road Network (PRN) is a network of roads used for transport on a regional or countrywide level, or for feeding into the Strategic Road Network (SRN) for longer journeys. Defined as roads which provide the most satisfactory route between places of traffic importance. PRN includes the entirety of the SRN.

Strategic Road Network

The Strategic Road Network (SRN) is made up of motorways, trunk roads and the most significant 'A' roads operated by Highways England. Two thirds of all heavy vehicle mileage in England is undertaken on the SRN.

Major Road Network

The Major Road Network (MRN) is a proposed classification of local authority roads in England. This incorporates the existing Highways England controlled SRN and more major local authority controlled 'A' roads.

Staffordshire Strategic Road Network

The Staffordshire Strategic Road Network (SSRN) includes motorways, trunk roads and other primary roads. It includes some non-primary roads of local importance.

Further information on road classification can be found in the Department for Transport publication Guidance on Road Classification and the Primary Route Network by following the weblink below:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/315783/road-classification-guidance.pdf

Plan 1 shows the primary highway routes, motorways and rail network across the County.

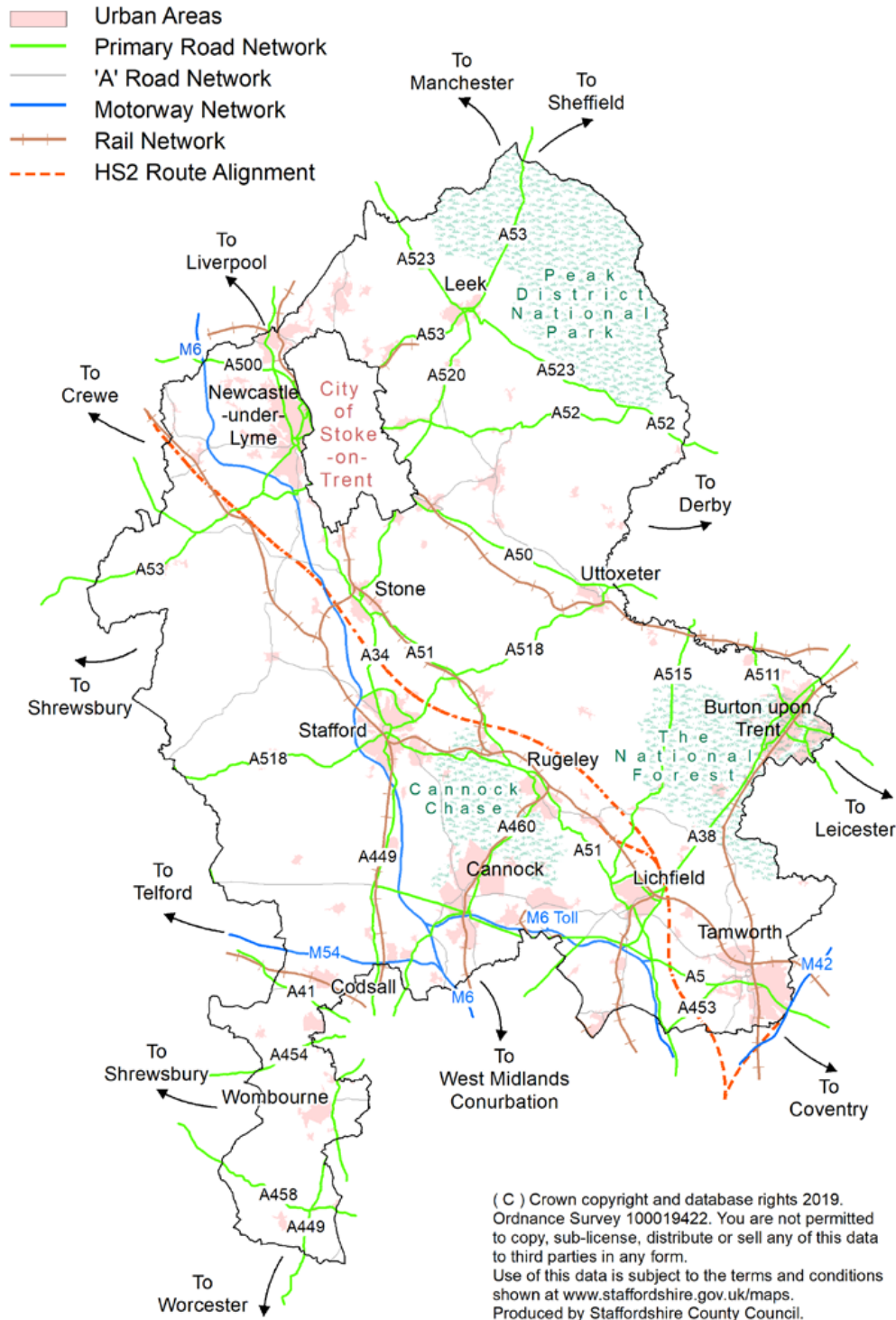
The M6 motorway is one of the most important road freight corridors in the country and forms part of the Trans European Network of Roads. Highways England recognises the M6, M54 and A38 as an integral part of the main transport corridor

connecting the south and north of the country. Staffordshire is also host to a part of the rail network that is significant for both regional and national freight traffic.

¹Eddington, R (2006) Eddington Transport Study

The canal network and air transport also play a role in moving freight in particular sectors although the contribution is modest by comparison to road and rail transport.

Plan 1: Staffordshire Primary Road and Rail Network



Road Freight

In 2016 1.97 billion tonnes of goods were carried by GB-registered Heavy Goods Vehicles operating in the UK covering around 19 billion vehicle kilometres. Whilst this is lower than the peak activity reached in 2007 due to the economic recession, it indicates an upward trend in HGV usage. Road freight remains the primary method of transporting freight across the UK. Analysis of the Department for Transport Road Freight Statistics is shown in figures 1 to 3.

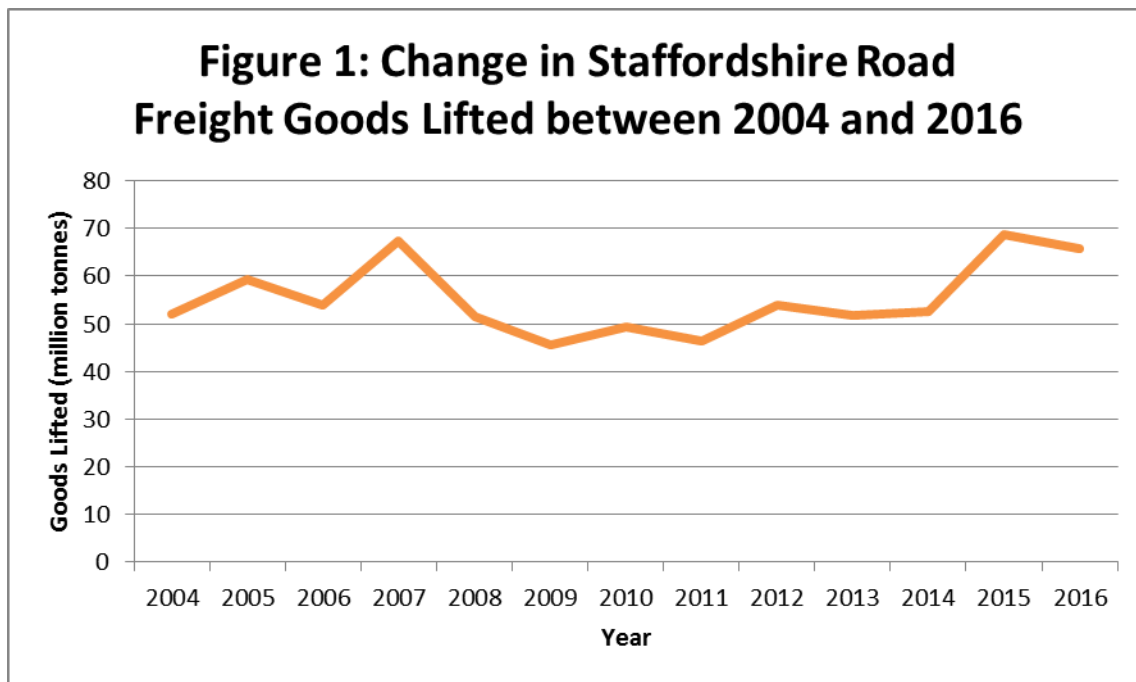


Figure 1 shows the change in goods transported via road freight in Staffordshire between 2004 and 2016. There has been an overall increase in goods lifted over the 12 year period, the peak in 2015 was a repeat of the level recorded in 2007.

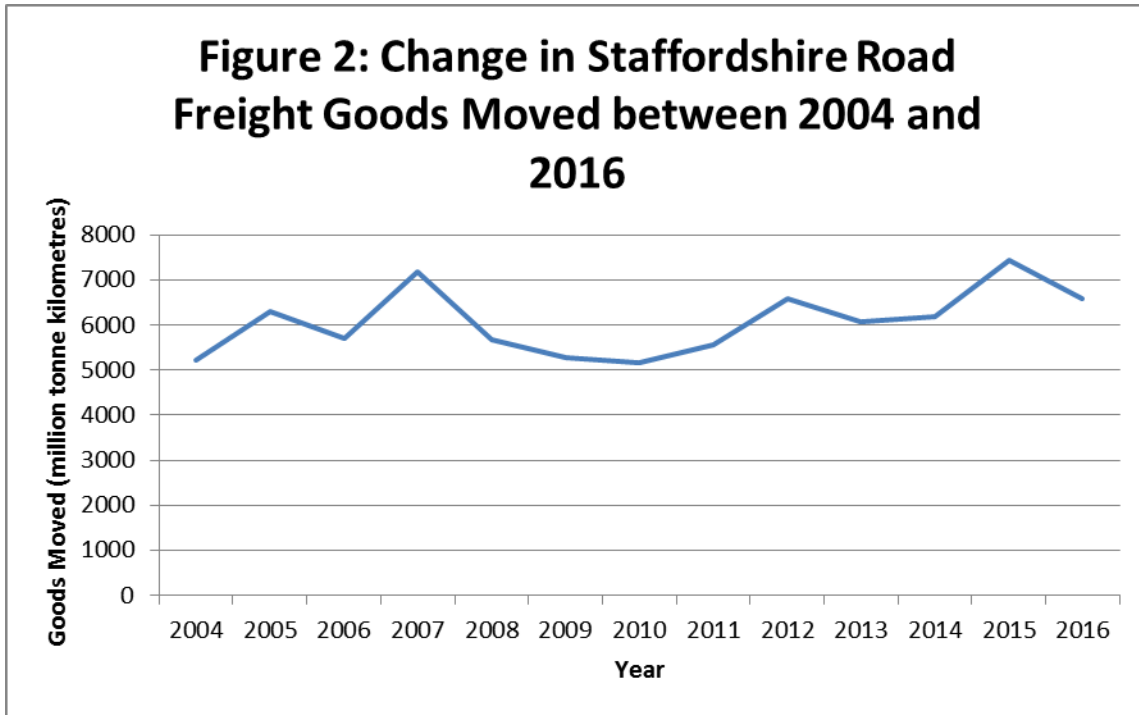


Figure 2 shows the change in goods transported by road freight in Staffordshire between 2004 and 2016. As would be expected it reflects the data shown in Figure 1 with an overall increase in tonnes of goods moved over time and a peak in 2015 similar to that in 2007.

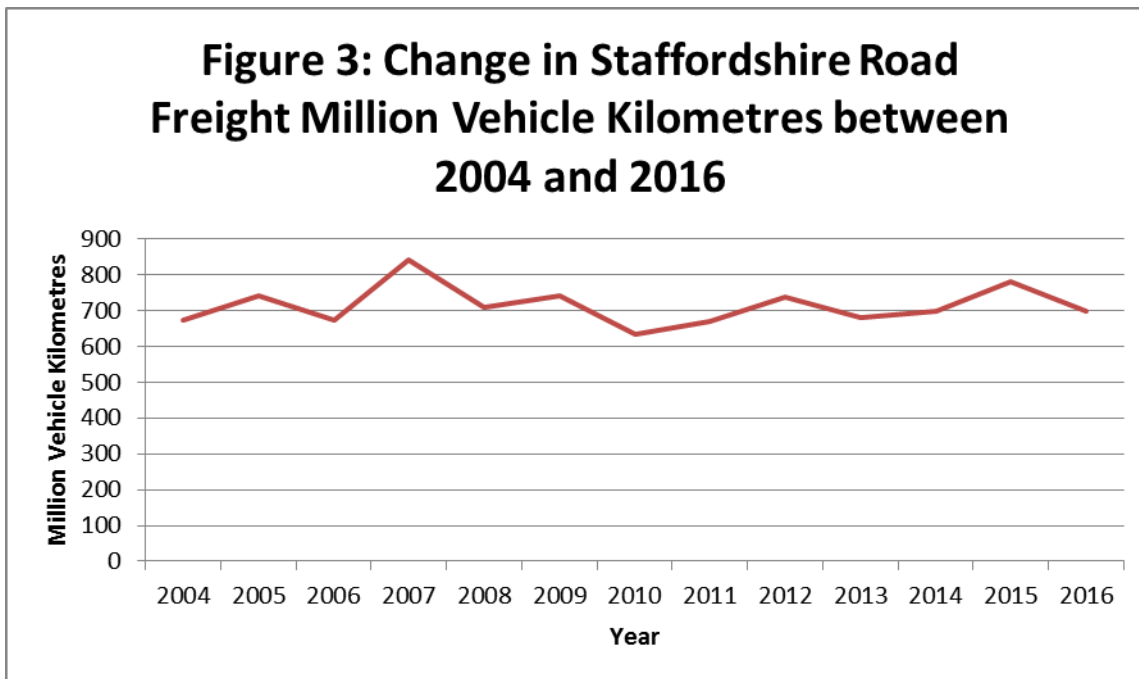


Figure 3 shows the change in freight million vehicle kilometres travelled in Staffordshire between 2004 and 2016. Overall the data has remained very consistent over time. Similar to figures 1 and 2 there is a significant peak in 2007 but the 2016 level is very consistent with 2004.

The data shown in figures 1, 2 and 3 illustrates that whilst the volume of goods lifted and moved in Staffordshire has increased over time, the number of vehicle kilometres moved has remained fairly consistent. This may be due to use of larger vehicles to carry heavier loads but not increasing their journey lengths or number of trips.

Over the last 25 years there has been a noticeable change in the type of vehicle accounting for road freight activity in the UK. The usage of rigid vehicles has declined significantly by around 17% whilst the usage of articulated vehicles has risen by approximately 31%. This indicates a shift towards using larger vehicles to transport freight and is likely to relate to increased efficiency and reduced costs.

The freight transport and logistics industry is an important activity in Staffordshire in terms of the economy, the impact on the transport network and the local environment.

The M6 motorway through the County accommodates typical HGV flows of around 35,000 - 40,000 on a week day and is a key corridor from the south to the north of the country. Significant numbers of HGV's use the A38, A5, M54, A50 and A34. The West Coast Mainline through Staffordshire is one of the most significant rail freight routes in the country.

Below the trunk road, the County road network is generally much less heavily trafficked and the proportion of HGV traffic is much lower (typically 5 - 10% compared to the M6 25 - 30%) although the County does host some important sub-regional routes and some major freight destinations.

Recently the concept of developing a Major Road Network (MRN) has been the subject of ongoing consultation by government. The County Council worked closely with Midlands Connect and its partners including the Stoke-on-Trent and Staffordshire Local Enterprise Partnership, the Local Planning Authorities and neighbouring authorities to develop an agreed proposal for the MRN in Staffordshire. Midlands Connect is a pan-Midlands partnership of 23 Local Authorities, nine Local Enterprise Partnerships, the Chambers of Commerce, Highways England, HS2 Ltd, Network Rail, as well as their Sponsor the Department for Transport. The MRN will play a key role in the national and regional economy as well as facilitating the delivery of employment and housing growth. MRN routes will form feeder links to the Strategic Road Network (SRN), offer cross-boundary connectivity, link to key economic centres, employment areas and transport hubs, and provide resilience for the SRN. Thus the MRN will play a crucial role in ongoing and increasing road based freight movements across Staffordshire, and involvement in the future investment and improvement programme for the MRN is therefore recognised as a priority.

Midlands Connect has undertaken a substantial study of Road and Rail Freight at a regional level. The Midlands is considered the hub of Britain's logistics system. Improving the freight transport system is about improving productivity and reducing

the risk of logistics businesses relocating away from the region due to slow and unreliable journey times. These improvements are likely to involve additional capacity or more efficient use of existing capacity for both road and rail freight movements.

The prevalence of the logistics industry and storage and warehousing uses in the County is in part a reflection of good access and the central position in the country to serve a national distribution service. Employment in these industries is well above the national average. It is evident that there is strong market interest for major logistics operations particularly in the south of the County.

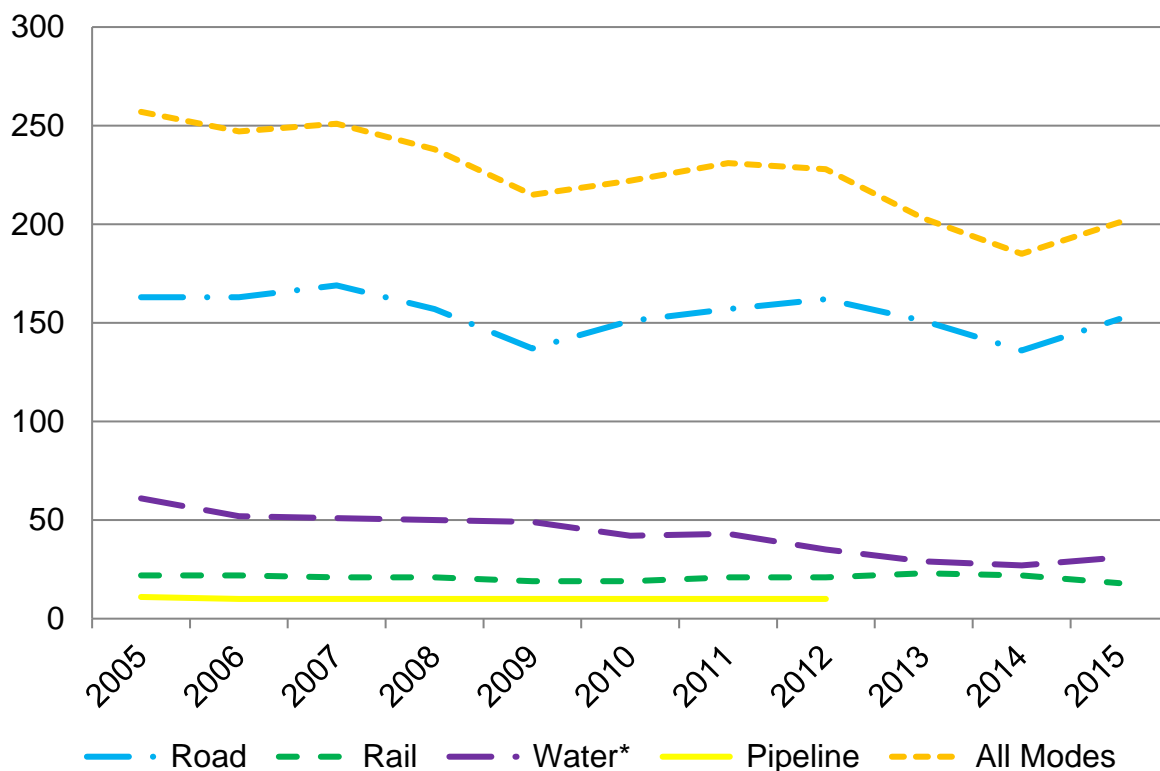
Rail Freight

Rail freight plays a crucial role in the UK economy and, since privatisation in the 1990s, has grown significantly. Network Rail's Freight Market Study shows that the amount of freight moved by rail, measured in tonne kilometres, has grown at around 2.5% per annum. In many commodity sectors the rail freight share of the market is negligible although it is significant for primary and bulk goods notably solid mineral fuels, metal products, crude and manufactured minerals and building products.

Rail freight performed well during the recent recession and continued to increase between 2009 and 2012. This is due to the increase in the import of goods through major ports with the handling of these dominated by containerisation. However the traditional bulk markets for rail, such as domestically produced coal and steel have reduced significantly.

As figure 4 shows, rail has made gains in market share in the last decade although this is from a low base and is very low when compared to the structure of the freight transport market over 30 years ago. The general economic benefit that tips towards rail for long distance journeys and long-term flows of bulk goods between major hubs means statistically rail shows a better performance in terms of total tonne distance than total goods lifted.

Figure 4: Domestic Freight Transport by Mode (Goods moved - billion tonne kms)



*water refers to domestic waterborne freight and port freight statistics

In Great Britain a typical freight train has the same capacity as 50-60 HGV's and for specific bulk goods such as aggregates freight trains can increase capacity using customised wagons with some trains carrying the equivalent capacity of 120 HGVs.

Rail freight is generally regarded as having environmental advantages over road freight particularly over long distances. By unit capacity CO2 emissions are generally lower, other pollutant emissions lower and the potential for technological innovation similar to that of road freight.

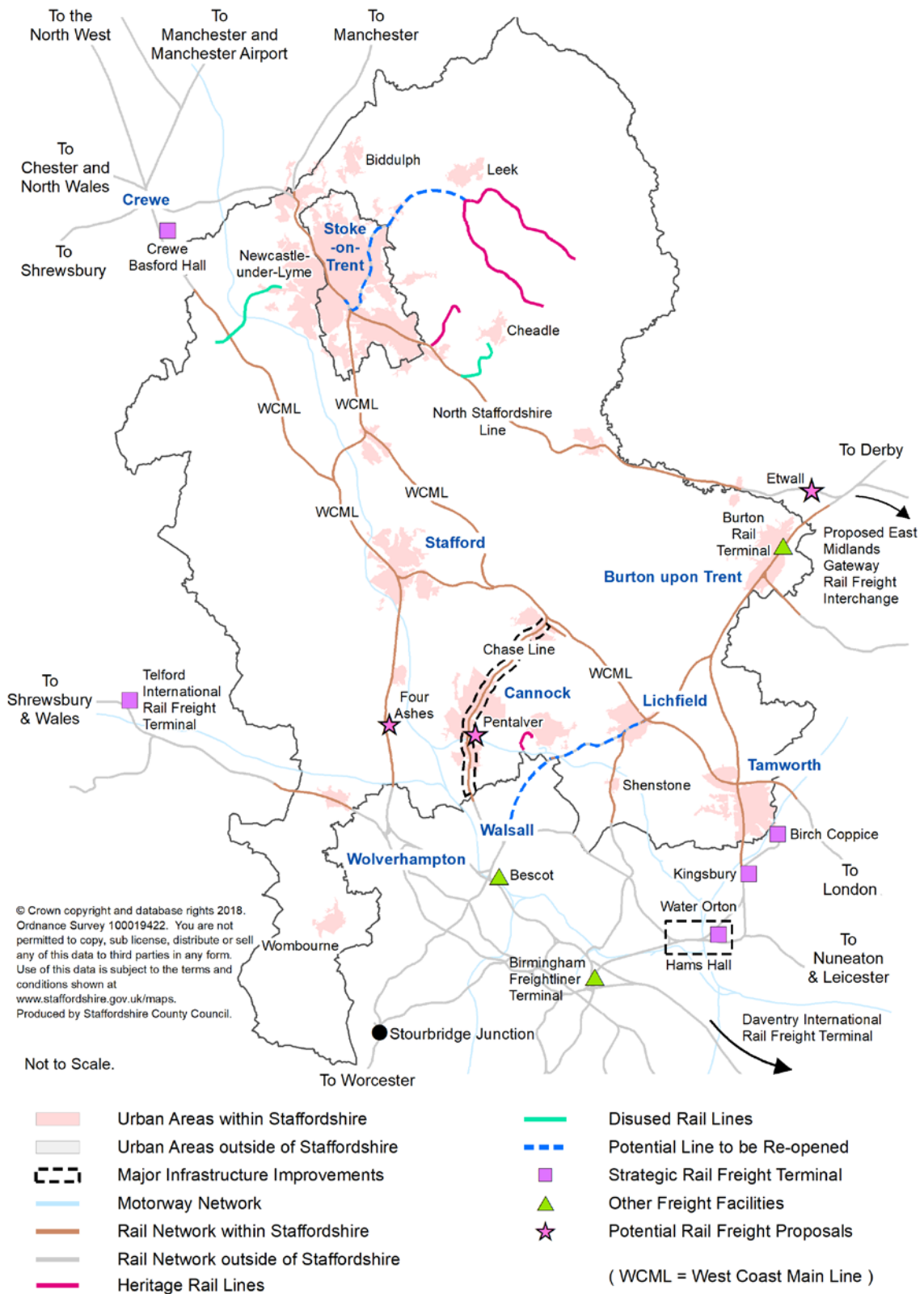
The Route Plans and the Freight Utilisation Strategy of Network Rail recognise the greatest potential capacity for rail freight growth from long distance intercontinental container traffic particularly from the sea ports of Felixstowe and Southampton. The critical factor in the expansion of this market is to provide a national core rail gauge (to W10) with adequate diversionary capacity within the network. The rail freight operators generally have ambitions for a next level of investment to clear to W12 gauge for compatibility with major European freight rail routes that allow slightly wider container wagons. Network Rail is taking this as a starting point when structures in the network are renewed and in many cases this does not involve very substantial infrastructure over and above W10 gauge. From the demand side

another potentially significant market driver is likely to come from alternative sourcing of the electricity supply industry (particularly from flows of imported coal and biomass in future years).

Enhancement of the rail network infrastructure is critical to a major expansion of freight on rail in the long term. In the shorter term more capacity can be achieved from technological innovation that allows expansion of the number of train paths to be created in the timetable and the use of faster and more efficient rolling stock. Considerable enhancements have been made in increasing the speed of freight trains and the conflict with faster passenger trains is generally diminishing. Freight trains have a timetabling advantage over local passenger services in not having to make regular stops. In some critical areas of the network additional sidings or the re-employment of branch lines can very effectively increase capacity where slower freight or passenger trains can be removed from the path of faster traffic.

As Plan 2 shows Staffordshire is placed at the centre of some important regional and national rail routes. The West Coast Mainline (WCML) crosses the County from the south-east to the north-west, and is the most important route with over 50 freight trains per day in each direction. The Birmingham to Derby corridor is the other key route within Staffordshire for rail freight flows. With trains to terminals such as Hams Hall, Birch Coppice and Kingsbury (all of which are located outside Staffordshire but are nonetheless important sources of freight close to the county) using this part of the network, this puts a strain on the capacity of the network in Staffordshire. Other significant freight route links across the County are the Wolverhampton, Crane Street junction through to the WCML at Stafford (on the Birmingham to Derby route). The rail junctions north of Stafford at Norton Bridge on the WCML and Burton-upon-Trent on the Birmingham to Derby line are particular hotspots with single directional flows of rail freight traffic of over 50 trains and 35 trains respectively on the busiest weekdays.

Plan 2: Key Rail Freight Network and Terminals



Staffordshire has no intermodal rail freight facility. The County has active rail sidings at Wetmore in Burton-upon-Trent, handling steel and Cockshute sidings in Longport, Stoke-on-Trent which receives china clay. The rail network across the County allows scope for a freight terminal and the scale of regional and national logistics operations already provide an origin and destination market for freight transport.

The County is to some extent served by rail freight facilities at Hams Hall, (North Warwickshire) Birch Coppice (near Tamworth) and Hortonwood (Telford). The planned expansion of these facilities would generally have a positive impact for allowing more viable options to longer distance road freight movements in and out of Staffordshire although final mile delivery and collection will still be made by road.

There is a general perception of the transfer of freight to rail as involving large scale expensive infrastructure. Although, national and international experience has tended towards increasing operational economies of scale much of the land-take associated with rail freight facilities is often for largely unrelated warehousing, storage and other road-based logistics activities.

Infrastructure for freight transfer to rail can be relatively simple and low cost if substantial change to track layout and signalling is not required.

A number of opportunities exist within the County for both rail transfer 'hubs' that could serve wider existing logistics and warehousing activity and facilities for the handling and transport of minerals. Examples include the Pentolver depot in Churchbridge, Cannock on the Walsall-Rugeley rail line and the opportunity that would arise to transport cement and minerals from Cauldon Low by the re-opening of the Cauldon Low to Stoke rail line.

More information on rail and rail freight in Staffordshire can be found in the Staffordshire Rail Strategy 2016:

<https://www.staffordshire.gov.uk/transport/transportplanning/Rail-strategy/Rail-Strategy.pdf>

In June 2012 a number of local authorities in the Black Country and Staffordshire commissioned consultants to review the need for regional logistics provision to serve the Black Country and southern Staffordshire as originally identified in the West Midlands Regional Spatial Strategy. Stage 1 of the study concluded that there remains a need for a Regional Logistics Site that can serve the Black Country and southern Staffordshire, but only insofar as they form part of the wider West Midlands, which taken as a whole region, has a need. A 260ha Strategic Rail Freight Interchange (SRFI) linking directly to the West Coast Main Line is now being promoted at Four Ashes / Junction 12 M6 known as the West Midlands Interchange (WMI). Due to its scale and government policy for a network of SRFI's across the country the proposal qualifies as a Nationally Significant Infrastructure Project under the 2008 Planning Act and will be determined by the Secretary of State. A

Development Consent Order application was submitted to the Planning Inspectorate in August 2018 and was accepted for examination. The final determination of the Secretary of State is expected to be announced during summer/autumn 2019.

The County Council supports the continued development and success of the Strategic Freight Interchanges in the West Midlands, including Hams Hall (Warwickshire), Birch Coppice (Warwickshire), Telford International (Shropshire), Daventry (Northamptonshire) and Crewe Basford Hall (Cheshire). Another important site is Lawley Street, close to Birmingham City Centre.

High Speed Rail

The County Council is committed to working to mitigate the impact of HS2, whilst securing the best deal for Staffordshire and its communities. This includes ensuring economic growth.

The transfer of most fast services to the high speed railway offers opportunities for rail freight with the potential for additional services to run on the WCML, in turn reducing pressures on the M6 Motorway and M6 Toll. Relief could also be offered for the railway between Birmingham and Derby, as well as reducing pressure on the M42 and A38 corridors. There may also be opportunities for new rail freight terminals located close to the county on the classic network.

The County Council supports measures to improve throughput of rail freight across Staffordshire and the wider West Midlands and continues its support for the Government's ongoing investment in the Strategic Rail Freight Network which includes a number of routes through Staffordshire.

Impacts of Freight

Impact of HGV's on the Local Network and Rural Areas

The available evidence of traffic flow across the Staffordshire network suggests that the majority of HGV's make full use of the motorway and strategic road network. Typical weekday HGV flows on key trunk roads through Staffordshire have been supplied by Highways England (2017). The data in Table 1 shows that the proportion of HGVs using these key routes ranges from 8% to 25% with the main focus of HGVs on the M6 motorway and a significant number of HGVs running overnight.

The data in table 1 shows that the number of HGVs travelling on the M6 Toll is significantly lower than other sections of Staffordshire's trunk road network. This may relate to the charging structure imposed and the cost of use by HGVs. An electronic pre-payment system is in place allowing users to make cost and time savings for each trip they make. However, this under-utilisation by HGVs means that the M6 Toll may not offer optimum relief for the local highway network.

Table 1: Vehicle flows and proportion of HGVs on key trunk roads in Staffordshire

Road/Data Collection Site	12hr vehicle average	% >6.6m average	Actual No. >6.6m vehicles
M6 (between J13 and J14)	92,891	21%	19,321
M54 (between J1 and J2)	53,595	13%	6,753
A5 (between Churchbridge and Norton Canes)	24,500	15%	3,785
A38 (between Hilliard's Cross and Fradley)	46,288	14%	6,318
M6(T) (between M6 J11A and M6(T) JT8)	29,325	10%	2,991
M6(T) between A38 JT3 off slips	34,564	8%	2,921

Road/Data Collection Site	24hr vehicle average	% >6.6m average	Actual No. >6.6m vehicles
M6 (between J13 and J14)	126,624	25%	31,023
M54 (between J1 and J2)	68,501	13%	9,008
A5 (between Churchbridge and Norton Canes)	30,919	17%	5,163
A38 (between Hilliard's Cross and Fradley)	59,024	15%	9,119
M6(T) (between M6 J11A and M6(T) JT8)	36,854	12%	4,423
M6(T) between A38 JT3 off slips	42,737	10%	4,252

Much of the HGV traffic in rural areas has a legitimate right of access to a point of collection or delivery and a significant proportion of it is related to business operating in the rural area. The small proportion of HGV traffic that is using the rural network inappropriately however is of considerable concern to local communities.

HGV's are particularly unsuited to narrow rural roads. The most frequently cited causes of concern raised by local communities relate to:

- 'rat running' through rural areas to avoid congestion or to take a more direct route;
- subsidence and damage to highways;
- noise and impact on the tranquillity of the rural area;
- the size and speed of vehicles and an increase in perception of vulnerability for pedestrians, cyclists and people horse-riding;

- damage and erosion to verges, walls, hedgerows, other vegetation and tree canopies over narrow lanes;
- damage to buildings and other structures;
- congestion and blockages to roads;
- difficulties in crossing roads and dangers to children playing in rural communities where there is a regular flow of HGV traffic;
- dust pollution; and
- mud and other hazards on the highway.

As well as concern about the problems of HGV's in rural areas there is also an understanding and empathy on the part of many who live in rural communities that freight movement is a necessary function of an economically viable countryside that can support employment for local people. There are mixed sympathies towards farm traffic, particularly in relation to safety concerns, although there is again recognition that it has a legitimate right to operate on rural roads.

The weight, length and restricted manoeuvrability of HGV's have a disproportionate impact on wear to the road surface compared to other traffic. It is therefore perhaps no surprise that highway maintenance is such a priority in areas more heavily trafficked with HGV's.

One common concern of HGV drivers is the rutting out and tram-lining of roads with high levels of HGV traffic and the effect this has on the ability to safely steer vehicles.

Where new development is proposed, any significant planning applications are accompanied by appropriate Transport Assessments for consideration by Highways Development Control. In Staffordshire many mineral extraction sites have historic planning permissions in place and in many cases as these are renewed or extended the associated HGV routing agreements are reviewed and updated.

Accidents

In 2015 in Great Britain there were 6,037 accidents involving at least one HGV, and 8,344 casualties. Of the casualties, 284 were fatalities.

There were 78 fatal or serious accidents involving HGVs per billion vehicle miles in 2015. This figure was lower than the rate for all vehicles (117 fatal or serious accidents per billion vehicle miles) and has decreased from 118 per billion vehicle miles in 2004.

On Staffordshire's local road network, reported personal injury accidents involving at least one HGV have averaged 150 per annum during the most recent 10 year period

(2006-2015), falling from 172 per annum between 2006 and 2010 to 128 per annum between 2011 and 2015 which equates to a reduction of 26% (over the most recent 5 years compared to the period 2006-2010). There have been 67 fatalities and 143 serious injuries in accidents involving at least one HGV in the ten year period 2006-2015. Accidents involving at least one HGV and either a pedestrian or a cyclist over the period 2006- 2015 have been relatively small in number averaging 6.8 and 3.1 per annum respectively. Nationally, during the last 5 years, 104 cyclists have been killed in accidents involving an HGV which accounts for nearly 20% of all cycling fatalities. Cyclists are at a particular risk from collisions with HGV's at left turn junctions and when being overtaken.

Road safety training for children, other pedestrians, cyclists and other vulnerable road users is already a high priority for the County Council and the authority has a good record for effectiveness and innovation. Some of the more innovative measures around the country include training and awareness programmes run by the Police or the haulage industry involving educating other road users in understanding the HGV's driver's perspective in terms of manoeuvring and restricted visibility.

Other industry responses include the 'well driven scheme' (www.well-driven.net) which allows the management of haulage companies to receive feedback and take action from the public on poor driving practice by the reporting of incidents to a hotline clearly displayed on participatory vehicles.

The Road Haulage Association works with many organisations to improve road safety with drivers of HGVs undergoing comprehensive training.

Emissions

According to detailed analysis 100% of HGV emissions are directly attributable to freight movement compared to 35% for LDV's, 41% for rail and 4% for domestic aviation.

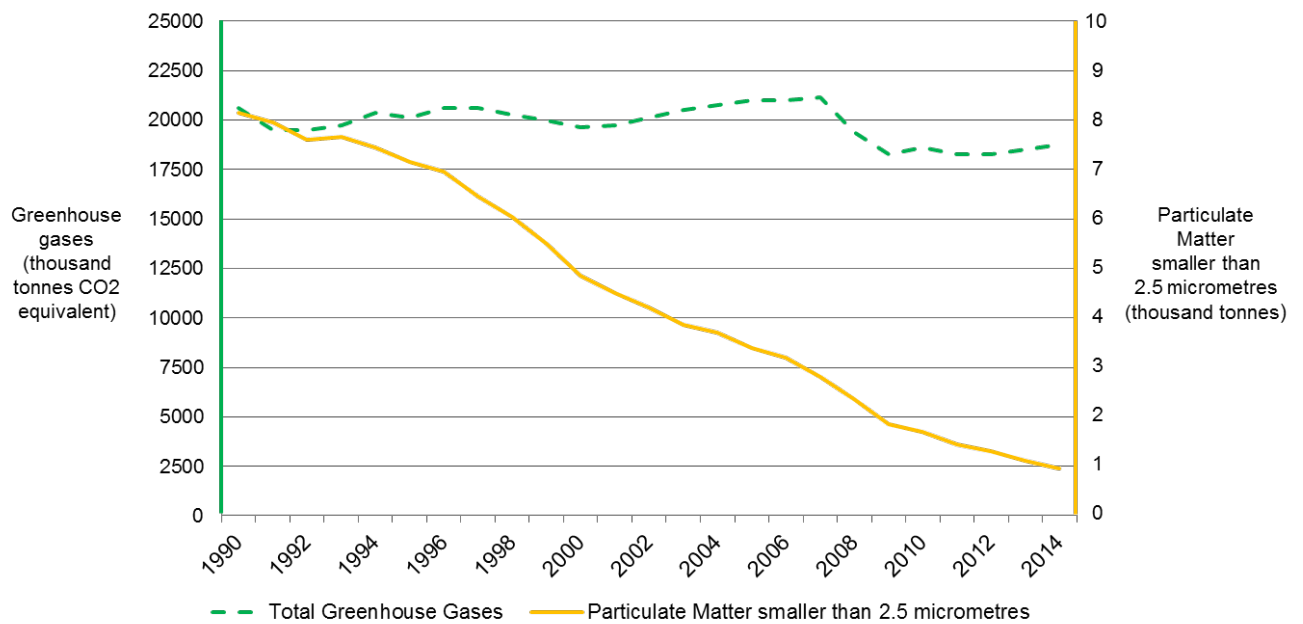
The transport sector accounts for almost 21% of total UK domestic greenhouse gas emissions of which carbon dioxide (CO₂) is the most significant. Latest UK emissions data from the National Atmospheric Emissions Inventory (NAEI), DECC/DEFRA, estimate Greenhouse gas emissions from HGVs have increased by 1% to 18.7 million tonnes of CO₂ equivalent between 2013 and 2014, shown in figure 5. HGVs contributed just under 1,000 tonnes of Particulate Matter smaller than 2.5 micrometres, a decrease of 17% from 2013 and continues the downward trend in particulate emissions.

The transport sector is also a major contributor to other pollutant emissions notably Carbon Monoxide (CO), Nitrogen Oxides (NO_x), Particulates (PM₁₀), Benzene, 1,3-butadiene, Lead (Pb) and Sulphur Dioxide (SO₂). In terms of total emissions from all sources HGV's and LDV's perform least favourably in respect of CO accounting for

2.0% and 2.1%, NOx 13.6% and 3.7%, PM10 2.8% and 3.3% and 1,3-butadiene 23.5% and 3.1% respectively (AEA Energy & Environment/Defra).

Regulation, engine efficiency and design, innovation and the widespread application of catalytic conversion technology has seen considerable reduction in the emissions of these pollutants in the last decade or so although this has been much less rapid from HGV's than from passenger cars (from HGV's 1997-2007, CO -42%, NOx -23%, PM10 -65%, Lead (Pb) -no change, SO2-95%).

Figure 5: Greenhouse Gases and Particulate Matter Emissions from Heavy Goods Vehicles UK 1990 - 2014



The road haulage industry has made significant progress in improving efficiency. By 2022 72% the UK HGV fleet will have Euro VI vehicles which have reduced harmful emissions of pollutants such as nitrogen oxide, carbon monoxide, hydrocarbons and particulate matter.

Congestion

Freight movement is a contributor to both road and rail congestion and the efficient operation of the economy is affected by goods being held up in traffic. Forming a picture of the impact of freight traffic on congestion across Staffordshire is difficult as much of the problem is associated with long distance freight movement that passes through the area and the interaction with passenger vehicles at peak times.

The most serious problems can be localised, sporadic and unpredictable, associated with other issues such as roadworks or accidents as well as particular pinch points or bottlenecks in the transport infrastructure.

Freight traffic and in particular HGV's are often perceived as a greater part of the congestion problem because of their high visibility on the network. HGV's can cause particular problems at destinations off the primary network on rural roads and in urban areas where the road system and urban fabric predates a significant level of road traffic. It is worth noting that whilst large HGVs have a significant visible impact, one 44 tonne articulated HGV carries the same load as 23 light diesel vehicles. The kerbside loading and unloading of HGV's and LDV's can have a disproportionate impact having the effect of significantly reducing road capacity. The slower acceleration of HGV's when fully loaded or climbing steep gradients can cause delays for other traffic.

In terms of rail freight the speed differential of passenger and freight traffic is an obstacle at peak times resulting in considerable loss of efficiency in the track infrastructure and reduction of available train paths. Moving rail freight at off-peak times creates other problems not least noise disturbance to local residents.

Lorry Parking

With the advent of the EC Working Directive providing strict regulation of driving hours and the continued growth in long distance road freight traffic the demand for lorry parking facilities in the County has been increasing in recent years. The main HGV parking areas and cafes serving the county and their associated parking charges are listed in Table 2 and illustrated on Plan 3 these are supported by a number of mobile catering facilities mostly found in lay-bys and the main logistics and industrial estates.

Table 2: Lorry Parks and Charges

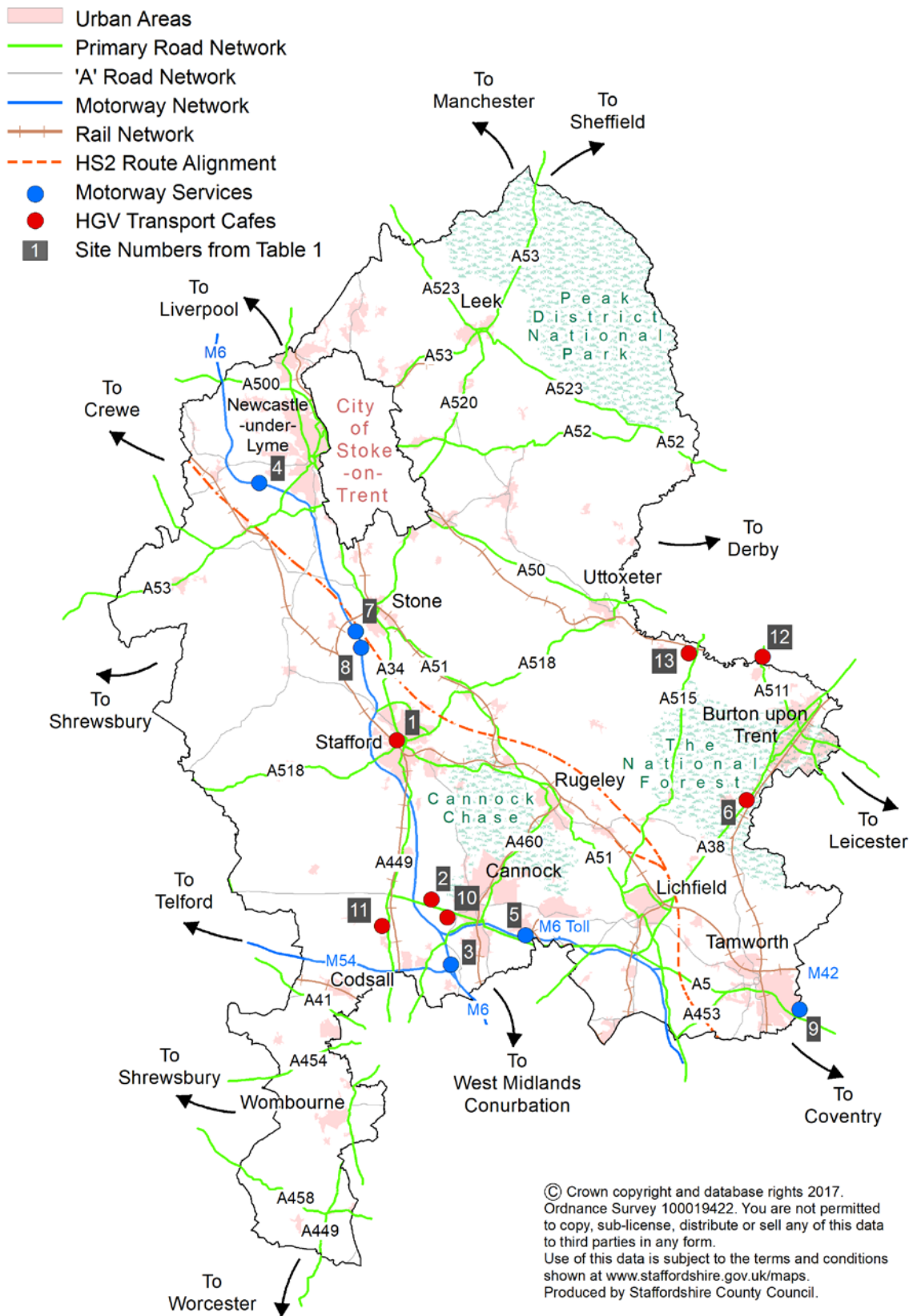
Site No.	Facility	Location	Overnight Cost*	Extra Information
1	Doxey Road Lorry Park	Doxey Road, Stafford	£8	
2	The New Hollies Truck Stop	A5 near Cannock	£16	Including shower
3	Hilton Park N & S Services	M6 motorway	£18	
4	Keele Services N & S	M6 motorway	£20	Including £7 food voucher
5	Norton Canes Service Area	M6 Toll	£28	
6	Oakmoor Transport Cafe	A38 Branston	£16	
7	Stafford Services N	M6 motorway	£23.50	
8	Stafford Services S	M6 motorway	£23	
9	Tamworth Services	M42/A5 junction	£19.50	
10	Truckers Rest	A5 near Cannock	£14	
11	Standeford Farm Truck Stop	A449 near Wolverhampton	£18	Including meal voucher
12	Salt Box Cafe	A511 Hatton	£10	Including £2.50 food voucher
13	PJ's Transport Cafe	A515 Draycott-in-the-Clay	£15.75	

*data from summer 2018

Table 2 shows that overnight HGV parking charges range from £8 at a publicly owned facility to £28 at a service area located on the M6 Toll. The publicly owned facility does not provide any additional benefits for drivers such as wash facilities or food discounts. Charges at independent facilities are markedly lower than motorway service areas and in some cases provide additional benefits such as food vouchers and free showers.

It should be noted that the one publicly run facility at Doxey Road in Stafford will close when the planned Stafford Western Access Road commences construction in spring 2019.

Plan 3: Heavy Goods Vehicle Parking Areas



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HGV parking areas are an important element of the logistics network and provide vital rest areas for drivers, help ensure safety for all road users and provide much needed security for transported goods, vehicles and drivers.

The issue of demand and supply for lorry parking in the County is complex. There is clearly a range of requirements from regularly distributed lay-bys on the strategic highway network to serve mandatory breaks after 4.5 hours driving, to secure overnight parking areas with facilities for stops of up to 45 hours.

Some of the major hauliers and some of those who carry more valuable freight insist that their drivers use secure parking areas at the other extreme there are many companies who give no overnight allowance to their drivers. Many of latter can be found in lay-bys overnight directly adjacent to busy primary routes with associated safety, security and comfort challenges. HGV drivers have indicated that improving parking facilities nationally in terms of the quantity, quality and range of services is a high priority.

According to the Supply Chain Risk Exposure Evaluation Network (SCREEN) 'UK Cargo Theft Report Q1 2018' cargo freight crime prevention in the United Kingdom is a critical issue with significant volumes of imported and exported goods utilising road freight. Theft from these vehicles impacts adversely on commerce and productivity. It is estimated that companies lost in excess of £54 million due to cargo theft in 2017, although with much of this type of crime unreported the losses are estimated to be much more significant. The report suggests that in the first quarter of 2018 Staffordshire was third on the list of counties experiencing the most significant losses from cargo theft behind Northamptonshire and Leicestershire. Drivers are encouraged, where possible, to choose secure lorry parking facilities which include:

- Perimeter fencing;
- CCTV camera surveillance;
- Entrance/exit security checkpoints;
- Police surveillance;
- Freight vehicle specific lots; and
- Sufficient lighting.

Despite concern about the general comfort and safety of HGV drivers the extent of overnight HGV parking as an environmental detractor is limited. At least part of the 'parking problem' may lie in the lack of knowledge of all the available locations and facilities. This may in part relate to the adequacy of signage and information for parking areas.

A serious challenge is for the public and private sector to provide decent, secure and environmentally acceptable parking areas at an acceptable cost to the road haulage industry.

The DfT National Survey of Lorry Parking 2017 considered the capacity and demand for overnight lorry parking across England. The study focussed on the Strategic Road Network (SRN) and sites within 5km of it. The study found an excess of approximately 3,500 vehicles unable to park on-site overnight. The West Midlands region was found to have a critically high utilisation of existing overnight lorry parking spaces illustrating a severe lack of available capacity. Off-site parking is predominantly centred around the M6 and A5.

The study surmised that in practice the West Midlands regions would require an increase in available lorry parking spaces of 21% to cater for demand.

The DfT sponsored 'Take a Break – road users' views about roadside facilities' report published in July 2016 focuses on service areas and facilities (including laybys) on Motorways and A-roads and the views of road users including HGV drivers.

In summary this report shows that whilst most road users are broadly satisfied with Motorway services, HGV drivers were less happy with roadside facilities on both Motorways and A-roads which were identified as having too few spaces and poor quality facilities. Facilities on A-roads were considered to have a less consistent level of quality leading to lower confidence. It was felt there tended to be a lack of clarity regarding location and opening hours of these services.

The main conclusions state that Highways England (formerly the Highways Agency) should acknowledge the integral nature of roadside services and develop a strategy to play an active role in facilitating high quality provision for Motorways and A-roads, they should ensure sufficient capacity for HGVs with appropriate facilities and work with the Government, freight industry, local authorities and other stakeholders to develop a strategy to this end. Operators of services should seek to meet these challenges with greater consistency in quality and cleanliness.

In terms of new HGV parking and service areas, liaison with Highways England has indicated that they have limited involvement in the implementation of truck stops on the trunk road network. The policy is for the private sector to promote and operate roadside facilities. Highways England has identified a requirement for additional facilities in some locations, including the West Midlands region, in accordance with Circular 02/2013. In some circumstances new HGV parking areas are identified by local authorities within Local Plans. However this is not the norm, often because possible locations are within the greenbelt. There are two types of site for HGV parking facilities:

Online – accessed directly from the strategic highway network such as those along the A38 through Staffordshire; and

Offline – accessed via a junction such as those accessed via the Toyota roundabout near Derby.

Highways England is usually consulted in applications for either type of site and remains keen to work with applicants to ensure that rest facilities can be delivered without impacting on the safety or free flow of traffic on the trunk road network.

In the development and provision of new rest stop facilities, reference should be made to the Secure European Truck Park Operational Services (SETPOS) Best Practice Handbook. This has been established amid the increasing concerns relating to security of high value cargo and vehicles, lack of adequate rest facilities and the associated need to establish secured truck parking sites and information services.

The SETPOS project has involved an alliance of specialists and stakeholders across Europe to improve freight safety and security.

A significant outcome of the SETPOS project has been the creation of online sources of information on the location and availability of HGV parking facilities across Europe including the Truckinform and Transpark platforms. These sources allow drivers to reserve spaces in advance allowing more accurate journey planning and rest stops.

Managing the Impacts of Freight

The Staffordshire Freight and Communities Forum

The Staffordshire Freight and Communities Forum was established in response to a recommendation of the Prosperous Staffordshire Select Committee in May 2016. The inaugural meeting took place in November 2016. This forum brings together key stakeholders such as local community representatives, Staffordshire County Council, the Police and Fire Service, Highways England and the Freight Haulage Association to address the impact of heavy commercial vehicles on Staffordshire's roads. The forum aims to develop an understanding of County wide distribution issues and constructive solutions to identified problems. This will often require reconciling the access requirements of goods and services with local, environmental and social concerns, whilst retaining a resilient network. The forum is led by Staffordshire County Council supported and resourced by key stakeholders. There is an emphasis on encouraging road freight to use the Motorway and Trunk Road network as far as possible. The forum will also allow stakeholders to discuss issues such as reducing noise impacts, managing construction traffic for major projects or agreeing appropriate diversionary and access routes.

The forum meets every 6 months or more frequently if necessary to address urgent matters. It is envisaged that one priority issue will be fully investigated each financial year with a view to identifying and where possible delivering appropriate mitigation measures via the key stakeholders.

Weight Restrictions

HGVs are permitted to use any road, whatever its classification, for access and deliveries even where there is an environmental weight restriction. Only in circumstances where a structural weight limit has been introduced to protect a weak highway structure do restrictions apply to heavy vehicles.

The County Council, in common with most other highway authorities does not generally consider implementation of environmental weight restrictions on A and B classified roads as these form priority routes, linking key destinations and performing a critical strategic function. The primary road network should provide unrestricted access to 40 tonne vehicles.

The introduction of environmental weight restrictions may occur only under exceptional circumstances and with strict consideration of the following minimum criteria:

- Comparatively high proportion of HGVs, for example in excess of 10-15%, using the road compared to similar roads countywide;
- Route not part of Staffordshire's Strategic Highway Network;
- Support from the enforcing body. The enforcement of environmental weight limits in the county is a police matter as the council no longer has capacity to do so via Trading Standards;
- Viable alternative route available;
- Not a designated emergency diversionary route for the local or trunk road network and therefore not necessary to provide resilience; and
- Full support from relevant neighbouring authorities and from affected elected Members (including those where a weight restriction would re-route HGVs).

HGV restrictions tend to be most effective over short lengths of road which are less likely to be subject to numerous exemptions and more practically enforced. Weight restrictions are useful to prevent HGVs from using minor roads as inappropriate short-cuts but care must be taken not to displace vehicles onto less suitable routes and to simply shift the impacts. An important factor when considering an environmental weight restriction is that they will generally include exemptions for deliveries, access, emergency vehicles and public service vehicles including buses.

Routing Agreements

In relation to the approval of planning permission for minerals extraction or waste disposal operations that involve substantial HGV movements a routing agreement may be used to positively direct the use of a particular route or the avoidance of specifically sensitive areas. Routing agreements might also be advised for other major development proposals that are likely to generate substantial levels of HGV

traffic. As these take the form of a condition or a legal agreement to a planning consent which are enforceable by Local Planning Authorities, they cannot be imposed retrospectively on existing development or operations. Routing agreements are generally more effective when used in conjunction with some statutory weight restriction and/or improved signage and/or an access design that influences the direction vehicles would enter and exit from a site.

Occasionally an operator may voluntarily commit to a routing agreement as a gesture of goodwill or appeasement to the local community where a problem has been identified and an adequate alternative route exists. These are more likely to be agreed with companies and operators who have a long-term commitment to an area.

Routing and Delivery Destination Information

Many areas of the country and particularly those with well-established Freight Quality Partnerships have initiatives to improve information to HGV drivers in relation to major freight destinations. It is recognised that roadside signs have to compete with all the other safety and traffic information directed at drivers and there are a number of other approaches employed, many of which are relatively low cost. HGV stops, cafes and lay-bys are places where drivers can safely gather information about the local area and are an obvious host for freight destination maps.

Improving signs at the final point of delivery destination on industrial and retail estates is another potential intervention. Generally in Staffordshire signage is considered to be adequate and the routing problems tend to relate to HGVs further back in their journeys.

Advisory Freight Routes

These can take a variety of forms from a single signed route to avoid a particular area or a strategic overview of the whole network across an administrative area. Advisory Freight Routes are often related to areas of significant environmental sensitivity.

Advisory Freight Routes are generally signed for HGV's with white symbols and text on a black background. Comprehensive freight routing strategies are generally supported with maps distributed to local hauliers, through trade associations and made widely available at truck-stops. Truck information points in motorway service areas and other electronic media have also been used to promote advisory routes.

The vast majority of HGV drivers surveyed in 2010 as part of the development of the original Staffordshire Freight Strategy supported the instigation of advisory routes and thought the County Council should give this a high priority. Somewhat conversely however the majority of drivers rated existing signage in relation to HGV routing as good or very good.

An Advisory Freight Route strategy covering the whole County clearly would have some advantages for the efficient use of the highway network and the protection of local communities. There are limitations to such an approach however, the most prevalent being:

- additional signs may add to confusion and act as an additional distraction from the road;
- ensuring all the HGV drivers who will pass through the County have an advisory map and continually reinforcing the routes to new drivers;
- the complexity of height and weight restrictions on the non-principal roads;
- the increased use of SATNAV as the main navigation system for HGV, and most fundamentally; and
- whether the advisory routes would add clarity to the road hierarchy which is already defined for all traffic uses.

It is not considered that the pattern of HGV movement, the definition of the strategic highway network and the nature of areas sensitive to HGV traffic either in terms of amenity or environment obviously point to the need for a County-wide approach to an advisory freight route. It is considered on the whole that the strategic highway network is reasonably well defined and that the approach to HGV routing should be worked up on the basis of specifically tailored solutions to local routing problems.

Road Freight Efficiency, Load Capacity and Empty Mile Running

As a general trend 'just-in-time' manufacturing techniques over the last two to three decades based on a relatively low proportionate cost of transport have produced a more fragmented and challenging freight transport system with less opportunity for bulk transport.

There is huge potential in the organisation of the freight industry and its relationship with manufacturing and the logistics supply chain to reduce freight movement and improve economic and environmental efficiency.

Some of the more fundamental issues relate to the organisation of manufacturing and production, how goods are stored and components used and transported in the production process. A significant part of the logistics industry is highly advanced in the application of technology and much of this has a positive impact in reducing freight movement and increasing efficiency.

Satellite technologies and scheduling software to effectively route plan 'multi-drop' deliveries being an example. Trends in the logistics and retail industries towards larger distribution and shopping centres and superstores have the potential to greatly reduce freight miles, although there is also an analogous trend in the wider spatial sourcing of products, particularly food, and the regionalisation (and nationalisation)

of distribution centres. Particularly with the advent of rising fuel prices the freight industry has responded with efficiency improvements. Some of the most effective practices simply relate to effective route planning, how loads are put together, the wider application of technology and good transport management, ensuring that HGV's carry backloads or have shorter periods of travelling empty.

As well as reducing empty running the improvement in the under-utilisation of HGV's running part loaded could offer significant efficiency benefits.

In terms of fuel consumption when fully laden a 44-tonne HGV and a 7.5 tonne HGV might typically achieve 35.0l/per 100km (8.1 mpg) and 16.1/l per 100km (17.5 mpg) respectively (Iveco 2010). With a 29 tonne and a 3.5 tonne payload respectively all other things being equal the largest articulated trucks are almost four times more fuel efficient per cargo tonne km than the smallest ones. There has been considerable interest from many of the main players in the haulage industry in continuing the upward spiral of both capacity and length of the largest trucks.

Despite the shifting of regulation allowing progressively larger vehicles the UK government has held firm on the limit to 44-tonne gross vehicle weight vehicles with 6-axle 'road-friendly suspension' introduced in 2001. The fuel efficiency and CO2 reduction benefit of larger vehicles could be somewhat offset when running part loaded or empty and further concerns relate to the potential increasing severity of accidents and local environmental harm when the vehicles move off the strategic highway network and primary route network.

Staffordshire's communities have raised concerns over the potential increase in the size of HGV's primarily over safety, manoeuvrability, damage to highway and property issues. There would however seem to be some benefit for operators to be gained from upsizing in existing fleets within allowable weight limits which may come about anyway as older smaller and less efficient vehicles are replaced.

Other areas which might produce considerable fuel efficiency and environmental benefits include;

- promoting regular vehicle maintenance;
- encouraging use of strategic routes;
- not discouraging safe 'platooning' (vehicles travelling close together to benefit from slip-streaming) or the use of cruise control on suitable motorway and A-class roads; and
- driver behaviour that encourages fuel efficiency such less reactionary braking and smoothing acceleration.

Back Loading - Load Sharing - Freight Databases

Many of the major players in the haulage industry have sophisticated systems to organise, track and best utilise their freight carrying capacity. Some companies

actively operate to encourage drivers to stay at the destination of their delivery until a return load has been identified. There is a good level of co-operation and collective work practice between companies to improve efficiency although national evidence and the consultation process has indicated that there is significant latent potential for improvement.

Good practice in efficient running is not the exclusive reserve of the larger operators or the more technologically advanced, indeed some of the smaller companies and owner-driver operators can be highly adaptable and flexible. Practices as simple as waiting in a lay-by or truck-stop to receive a call for a hire and reward load can make a significant contribution to reducing HGV movement.

The efficient utilisation of HGV's is assisted by a number of backload services. There are companies who specifically identify and farm out return loads. Online freight matching services have expanded significantly in the last decade offering enormous search capacity to haulage operators to find backloads, for example:

www.freight2mail.com

www.haulageexchange.co.uk

www.loadup.co.uk,

www.returnload.com

www.logintrans.co.uk

Pallet networks allow freight consolidation and member hauliers to considerably increase the average carrying capacity of their vehicles (DfT Freight Best Practice 2005). Reverse logistics operations where cages, packaging and returned stock are taken away by incoming deliveries are employed by most of the big multiple retailers.

Freight Consolidation Centres

In its most simplistic form freight consolidation works to bring goods to a single geographic location to make more efficient bulk loads for onward movement. Freight Consolidation Centres have particular benefits where the delivery of goods is highly constrained such as in a historic town centre or where there is an opportunity to bulk up regular deliveries such as to a shopping centre with small unit retailers.

Consolidation Centres offer significant advantages in terms of reducing impacts to town centres, allowing 24 hour access and minimising disturbance to residents. Consolidation of goods also allows for transfer to zero emission or low emission vehicles producing air quality benefits.

Freight consolidation has particular advantages in the delivery of construction materials where these can be assembled off-site into bulk loads for 'just-in-time'

delivery. This may offer benefits in terms of reduced emissions and congestion issues, improve levels of delivery service and flexibility.

Fleet Operator Recognition Scheme (FORS)

FORS is a national voluntary accreditation scheme that promotes best practice for commercial vehicle operators. FORS encompasses all aspects of safety, efficiency, and environmental protection by encouraging and training fleet operators to measure, monitor and improve performance. FORS provides accreditation pathways for operators of any type, and for those organisations that award contracts and specify transport requirements.

FORS Bronze, Silver and Gold membership provides progressive accreditation enabling operators to achieve exemplary levels of best practice. FORS members work to standards above the legal minimum and have access to a range of benefits that can provide a competitive advantage including free and funded training opportunities, offers and discounts from FORS Associates, as well as toolkits and guidance documents.

FORS replicates many of the functions of the Office of the Traffic Commissioner, which regulates road freight operators and vocational licence holders nationally.

If Staffordshire County Council wished to further promote this scheme within Staffordshire, it could operate on any variety of levels of complexity and comprehensiveness. As a minimum it would probably need to involve the main commercial industry bodies and operate in partnership with Staffordshire Police and the Vehicle and Operator Services Agency. Significant benefits might accrue from working with adjoining authorities, although the criterion may be difficult to agree.

To be successful the scheme would ideally be free to join, compliance criteria clear and understandable and not unduly onerous. The scheme would also need to be as open and equitably administered as possible to gain credence and acceptability by both the industry and the communities of Staffordshire.

A Staffordshire freight operator recognition scheme could be devised specifically to address local problems. At entry level criteria for membership might address issues such as;

- the use of truck based SATNAV systems or SATNAV with height and weight information;
- a very low or zero accident record in relation to collisions with pedestrians or cyclists (per unit distance travelled);
- a very low or zero record of misuse of weight restriction areas (per unit distance travelled);
- a very low or zero record of public complaints (per unit distance travelled);

- a minimum percentage of fleet with Euro IV, Euro III and Euro II emission standard engines; and
- companies offering regular driver training.

One advantage of a recognition scheme could be positive consideration when participating in contractor selection for the County Councils own delivery and haulage requirements.

Eco Stars

In September 2014 Staffordshire County Council offered its support for a funding bid to DEFRA to set up an Eco Stars Fleet Recognition Scheme. This bid was led by Cannock Chase District Council and Lichfield District Council and involved eight other local authorities including Stoke City Council. This bid proved successful and the partnership was awarded £80,000 over 2 years to implement a green fleet recognition scheme for Heavy Commercial Vehicles.

Although the initial funding has now been allocated, the Eco Stars scheme still offers a free consultancy service for commercial vehicle operators across the county with the aim of reducing their pollution output by encouraging greater efficiency vehicles, route planning and management practices, which would have a positive impact on reducing traffic congestion and improving air quality. Operators can receive support via the scheme to improve efficiency and reduce operating costs which in turn benefits the local community.

Use of Satellite Navigation Systems

A perception gained from the reading of some national and local evidence and certainly supported by the media is that the use of SATNAV systems by freight operators and hauliers frequently leads to problems in rural areas through the use of inappropriate routes, abuse of weight restriction orders and in the most extreme cases the blocking of roads.

Other more balanced evidence suggests that there have been a number of incidents that have been disproportionately recorded and on the whole the misuse of SATNAV is relatively rare when considered against the overall volume of road freight traffic.

The majority of HGV drivers utilise SATNAV only for the final section of their journey to identify a specific delivery address. Many drivers are making regular trips or are familiar with their destinations. Drivers undertaking multiple deliveries to locations away from the primary route network tend to use smaller vehicles with rigid bodies.

Some drivers with SATNAV already use truck compatible systems with downloaded weight and height information. However, systems with weight and height information remain relatively expensive.

The use of SATNAV systems by foreign drivers is difficult to quantify. The extent of any problem would be limited by both the relatively small numbers of non-GB registered vehicles and the fact that foreign drivers have less of a desire to stray away from the motorway and trunk network.

Primary research for DfT (Faber Maunsell / AECOM 2009) on the use of SATNAV suggested a safety benefit in its use allowing freedom to listen to a voice command rather than the encumbrance of maps and instructions for locating destinations (the research was not specific to HGV's). Further uses of SATNAV reported to DfT (Faber Maunsell/AECOM 2009) included taking advantage of live traffic updates, locating speed cameras and mobile Bluetooth functions. There may also be operational benefits such as vehicle tracking and security.

SATNAV information specific to HGV routing, although currently expensive, is becoming more widely available and used and support should be given to any initiative to support the adoption of a single European standard for data. There would also seem to be a good case for all new HGV's to have a fully functional weight and height information SATNAV system fitted as standard particularly given the negligible proportional cost in comparison to a new truck.

In March 2012 the DfT held a summit to discuss how to deliver the best information to all in-vehicle Satellite Navigation users. This involved representatives of SATNAV companies, highway authorities, the freight industry and map providers. The summit showed that the mapping used by SATNAV systems is the key to appropriate routing, the unit itself is not considered critical. This confirmed that if a SATNAV system designed for use by car drivers is used in larger vehicles, or if mapping is outdated, SATNAV systems can cause problems. This problem is, however, declining due to the introduction of special freight SATNAV systems.

SATNAV map makers have processes for making sure their maps are accurate. The maps are updated by new surveys, direct reporting by highways authorities (such as in Staffordshire's case) and user reports. The usefulness of this information is only maximized if users update their systems. Use of out-dated SATNAV systems by hauliers has been identified as encouraging poor routing decisions.

Using the navigable map, SATNAV systems calculate the 'cost' of available routes and then select the 'best' route. Cost can be defined by a variety of criteria including time, distance, fuel consumption and class of road. The SATNAV then selects the route via the highest class road available, according to the criteria set. If no type of road has been pre-selected and an A and B road would be equally 'good' in terms of time and distance then the system will select the A road route. The way that SATNAV maps classify roads is therefore key.

The quality of mapping is crucial. These can be held in a central server by a SATNAV service and continually updated, or installed in every device in the vehicle.

The latter is most common but means that maps are out of date very quickly. Users tend not to update their maps due to cost, lack of knowledge or inertia.

Map data should ideally reflect reality at the time the map is used. However, the many steps and actors involved between obtaining or correction of data and its use in calculating routes means that it is sometimes incorrect.

Information such as Traffic Regulation Orders (TROs), road numbering, layouts and route preferences by highway authorities is essential but can sometimes be difficult to source in a timely fashion. This can affect the confidence of the user and lead to inappropriate route choices.

It is currently the norm for mapping information to be held on individual devices and for the journey calculation to take place there rather than centrally. However with the development of smart phone technology it is likely that remotely held maps and route selection software will become far more common making obsolete maps in individual devices much less of a problem.

For SATNAV systems to work effectively users must have a reasonable level of competence in operating their devices, and take responsibility for updating map information.

The availability of systems allowing users to pre-set parameters for weight, height and width, and even provide route selection choices specifically for dangerous loads will further alleviate issues associated with inappropriate routing. Next generation digital tachographs have a GPS element allowing integration of SATNAV devices. The use of SATNAV could become part of HGV driver training and testing in the future.

Truck Platooning

Truck platooning comprises a number of trucks equipped with state-of-the-art driving support systems, one closely following the other. This forms a platoon with the trucks driven by smart technology, and mutually communicating. Truck platooning is innovative and full of promise and potential for the road freight sector. Platooning can improve road safety, allow constant speeds to be maintained, reduce CO2 emissions, reduce congestion and release highway capacity. Whilst this has not yet been introduced in the UK it could have an important role to play in making freight movement more efficient and reducing the impact on the highway network.

Other Freight Technologies

Real time data is used to monitor the status of freight through vehicle tracking and temperature control systems on trucks enabling companies to provide clients with up to the minute information on the location and condition of their products.

A prototype 'Safety Truck' has been developed consisting of a wireless camera attached to the front of a truck connected to monitors on the back of the truck allowing drivers behind to view what is going on ahead of the truck. This allows safer overtaking and avoids accidents caused by sudden braking.

Biogas and electric powered trucks are also under development as alternative fuel sources will help to reduce carbon emissions from road haulage.

High capacity trucks could be utilised to enable businesses to transport larger volumes of stock with a smaller vehicle fleet. These vehicles have a load capacity of 60 tonnes. However there are also some safety concerns associated with such large vehicles although they are equipped with the latest safety features that can intervene if triggered.

In a competitive industry some freight haulage firms are reluctant to re-fit their fleets and temporarily reduce delivery capacities. However technology firms are making systems more affordable and easier to install, and given the increasing pressure to improve safety, emissions and efficiency, operators are seeing more and more the benefits of new technology.

Action Plan

Action	Lead Authority / Officer	Other Key Stakeholders	Timescale and Resource	Comment
Local Actions				
<p>Erection of permanent HGV routing signage in Lichfield – alleviation of A5127</p> <p>Raised at Staffordshire Freight and Communities Forum</p>	<p>SCC – Community Liaison Officer</p>	<p>Staffordshire Police, elected Member</p>	<p>Integrated Transport Block inclusion in future year programme</p>	<p>A5127 was part of Emergency Diversion Route for the A38(T). Overnight closures on the A38(T) and closures to the A5(T) have led to increased HGV usage of the A5127.</p> <p>Consideration of usage of A5127 after completion of Lichfield to Tamworth HGV signing improvement works have been delivered and monitored. First phase delivered but resource constraints restricted completion of scheme delivery. Seek delivery to complete scheme via Integrated Transport Block future years.</p>
<p>Experimental Traffic Regulation Order (TRO) on A515 and connecting roads</p>	<p>Staffordshire County Council (SCC)</p>	<p>Highways England, Staffordshire Police, High Speed 2 (HS2) Phase 1 and 2a, elected Members and</p>	<p>£100,000 committed in the 2018/19 Integrated Transport (IT) programme to deliver HGV restrictions on Wood End Lane, A513 and</p>	<p>Amey (SCCs strategic partner) is currently in the design/consultation process</p>

		Parish Councils	B5016. Scheme delivered early 2019, monitoring ongoing	
Yoxall Village Gateway Enhancements	SCC	Elected Member, Yoxall Parish Council	£60,000 in Integrated Transport programme scheme delivered Q1 2019	To provide gateway features, buffer zones and speed limit reductions that aim to reduce vehicle speeds entering the village. Currently awaiting road safety audit prior to consultation.
A515 / B5017 Draycott in the Clay speed limit review	SCC	Elected Member, Draycott in the Clay Parish Council	£58,000 in 2018/19 IT programme	Implement the outcomes of the Draycott speed limit review.
Better Barton	SCC	Elected Member, Barton under Needwood Parish Council	£450,000 S106 developer contributions	Public realm scheme completed. Consideration of HGV usage of the B5016 following public realm works.
B5017 Corridor Improvements, Burton	SCC	Elected Members and various parish councils	£248,000 S106 developer contributions	Consider measures to reduce the impact of development. The scheme will consider improvements to the carriageway condition and the feasibility of gateway features, traffic calming, management of HGVs and shared space use.

Transport improvements in Tatenhill and Rangemore (associated with Branston Locks development)	SCC	Elected Members and parish councils	£250,000 S106 developer contributions	Design and delivery of a traffic calming and safety scheme. Proposals include HGV restrictions on local roads with consideration of an extension to an environmental weight limit to reduce use of less suitable routes.
Action	Lead Authority/Officer	Other Key Stakeholders	Timescale and Resource	Comment
Strategic Actions				
Consider requests for weight restrictions on specific parts of the highway network with regard to sensitivity of the area, quantum of HGVs, population affected and suitability of alternative routes as well as issues of route re-classification	SCC – Community Liaison Officers	Staffordshire Police, elected Members, local communities, FTA	Ongoing	Work with local communities and the freight industry via the Staffordshire Freight & Communities Forum to understand the appropriateness of using Traffic Regulation Orders at specific locations and the effects of displacement. Such interventions are not generally considered appropriate for A and B classified roads.
As mineral and waste planning authority and in consultation with key stakeholders promote the use of 'routing agreements' in relation to major generators of freight	SCC – Minerals and waste planning	Highways DC, LPAs	Ongoing	Use of routing agreements to minimise the impact of HGV traffic on local communities and inappropriate routes
Ensure that Travel Plans relating to new	SCC – Highways Development Control	LPAs	Ongoing	When new development proposals are considered, the impacts of

development adequately address freight and delivery issues – including consideration of enforcement measures				HGVs and how these are managed should be adequately considered in discussion with stakeholders, this should include overnight parking facilities.
Vulnerable road user training and education in relation to operation of HGVs	Staffordshire Fire and Rescue	Schools, young people, sustainable mode users, village communities located on heavily trafficked routes	Ongoing	Support work of Staffordshire Fire and Rescue to inform vulnerable road users and increase awareness and safety in relation to HGV operations
Support improvements to HGV parking facilities within Staffordshire, specifically in the M6-A449, A5-M6 Toll and A38(T) corridors	SCC – Staffordshire Freight & Community Forum	Highways Development Control, Highways England, LPAs, Staffordshire Police, Parking operators	Ongoing	Improvements and parking capacity increases at existing HGV parking areas will reduce the impacts of inappropriate HGV parking on country lanes and laybys including issues of anti-social behaviour. Improvements working towards European SETPOS standards (Secured European Truck Parking Best Practice)
Support planning applications that make appropriate provision for new or extended HGV parking areas subject to environmental and	SCC – Highways Development Control	LPAs, Staffordshire Police	Ongoing	Support for provision of new or expansion of existing truck stops and service areas for HGVs particularly in the Staffordshire M6-A449, A5-M6 Toll and A38(T) corridors

residential amenity constraints				
Support provision of new and expansion of existing rail freight terminals in and close to Staffordshire with good access to the Primary Route Network and close to existing logistics activity	SCC – Staffordshire Freight and Community Forum	LPAs	Ongoing	Consideration of new rail freight terminals will require close working with key stakeholders and significant consultation particularly with local communities
Maximise opportunities associated with HS2 and the released capacity it provides	SCC – HS2 officer	LPAs	Ongoing	Ensure links with the Staffordshire Rail Strategy
Investigate environmental impacts of HGVs on key routes including noise and air quality issues	SCC and LPAs	Local communities	Ongoing	Where known issues exist continue to monitor and take action as required, investigate new issues as required and develop Air Quality Action Plans with LPAs relating to identified Air Quality Management Areas
Liaise with Staffordshire Police regarding enforcement of existing and potential HGV restrictions countywide	SCC – Staffordshire Freight and Community Forum	Staffordshire Police, elected Members	Ongoing	Consider current and historical issues associated with HGV usage and community concerns
Continue to issue considered responses to the Traffic Commissioners in relation to consultations on HGV	SCC-Development Control	LPAs	Ongoing	Consider local issues and the wider network. Provide clear advice on new developments involving property served off the rural road network.

operators' license applications				
Continue to work with Highways England to manage the effects of emergency diversion routes on the local network and support improvements to the trunk road network	SCC- Traffic Manager	Highways England	Ongoing	Traffic manager to continue to work with Highways England to manage the impacts of traffic and usage of EDRs

