THE FREIGHT ACTION PLAN FOR KENT



KENT COUNTY COUNCIL April 2012

THE FREIGHT ACTION PLAN FOR KENT



Adopted by County Council on X of Xxxxxx 2012



Contents

Foreword	
Executive summary	
Introduction	
Roles and responsib	pilities
Kent County	Council
Highways Ag	gency
Department f	for Transport
Kent County Counci	il's vision
Road haulage in Ker	nt
Other freight distrib	ution networks
Rail freight	
Air freight	
Maritime freig	ght
	gateways
	Dover
The Channel	Tunnel
	Sheerness
Kent's wharv	es
Manston Airp	oort
Rail-linked a	ggregates terminals
Other freight genera	itors
International	gateways outside of Kent County Council
Logistics ope	erators
Agricultural a	and horticultural businesses
Planned cons	struction
Kent Freight Action	Plan objectives
Objective 1:	To find a long-term solution to Operation Stack
	To take appropriate steps to tackle the problem of overnight
	in Kent
Objective 3:	To effectively manage the routing of HGV traffic to ensure that
such movem	ents remain on the strategic road network for as much of their
	ossible
	To take steps to address problems caused by freight traffic to
	To ensure that KCC continues to make effective use of planning
	ment control powers to reduce the impact of freight traffic
	To encourage sustainable freight distribution
	Plan for Kent – Table of objectives and action points
_	, , , , , , , , , , , , , , , , , , , ,
Potoronco list	

Foreword



Executive Summary

Kent County Council has developed this Freight Action Plan with the aim to effectively address concerns with the movement of freight both through and within Kent. The Plan sets out the vision to:

"Promote safe and sustainable freight distribution networks into, out of and within Kent, which support local and national economic prosperity and quality of life, whilst working to address any negative impacts on local communities and the environment both now and in the future."

The action points derived from the Plan will be tackled by Kent County Council, working with partner organisations and local communities to maximise their impact. The emphasis of the Plan is on road haulage and specifically Heavy Goods Vehicles. This is the dominant mode of transportation within Kent, has the greatest impact on the County's residents, and affects the highway network itself.

The Plan has identified six key objectives that have generated a number of action points. These actions are subdivided into those currently underway and those planned for the future. The objectives are:

Objective 1: To find a long-term solution to Operation Stack.

Objective 2: To take appropriate steps to tackle the problem of overnight lorry parking in Kent.

Objective 3: To effectively manage the routing of HGV traffic to ensure that such movements remain on the strategic road network for as much of their journey as possible.

Objective 4: To take steps to address problems caused by freight traffic to communities.

Objective 5: To ensure that KCC continues to make effective use of planning and development control powers to reduce the impact of freight traffic.

Objective 6: To encourage sustainable freight distribution.

These objectives do not form an order of priority, rather they all need addressing simultaneously in order to achieve the vision.

The Freight Action Plan for Kent recognises the need for businesses to use the County's highway network but seeks to mitigate the impacts of this on local communities.

1.0 Introduction

- 1.1 Freight is the term used to define the transportation of goods via road, rail, air or water. Freight is essential to the UK economy and an integral part of modern life. It can be transported over long distances, for example across or within countries, as well as via shorter distribution networks. This Plan will focus predominantly on road freight and specifically Heavy Goods Vehicles (HGVs).
- 1.2 The changing nature of the UK economy is reflected in the changing mix of freight vehicles. There are now fewer HGVs and a greater number of vans. Additionally, the proportion of freight carried by rail has significantly increased in recent years. Although this still only represents around 11% of the UK market, Network Rail expects demand to increase by 140% over the next 30 years¹.
- 1.3 Despite these national trends, Kent's role as a UK Gateway means that a high proportion of HGV traffic heading to and from Europe uses the county's road network. Consequently there are negative impacts on Kent's residents, visitors and the road network itself.



- 1.4 When freight is discussed images of industrial sites, businesses and shops spring to mind. However, logistics networks also serve households as people increasingly receive deliveries of online shopping; and public service vehicles require access to frontages, for example to collect refuse.
- 1.5 The County Council appreciates the need for freight to move on Kent's road network and the positive economic and social benefits that the industry brings both to the county and UK as a whole. However, the negative impacts are well recognised by Kent County Council (KCC) and industry bodies alike. It is these negative impacts that this Action Plan has been formulated to mitigate.
- 1.6 The Plan will describe the situation in Kent and identify actions that can by taken by KCC to mitigate the impact of freight on the county's road network and residents' quality of life. The emphasis of the Plan is on road haulage for two reasons. Firstly, it is the dominant means of transporting freight across and within Kent, and secondly, because KCC has responsibility for the roads in Kent (except the motorway and trunk roads).
- 1.7 The actions are assigned to six objectives. There is no order of priority for the objectives because they need addressing simultaneously in order to achieve KCC's vision.

¹ Network Rail, 2010a.

2.0 Roles and responsibilities

Kent County Council

- 2.1 KCC is the Highway Authority for the roads in Kent other than the motorway and trunk roads, ranging from County Primary Routes, such as the A229, to unclassified rural roads. The Council is responsible for maintaining the public highway and regulating development that affects it.
- 2.2 Under the Traffic Management Act 2004, all Local Transport Authorities in England have a duty to: "secure the expeditious movement of traffic on the authority's road network," including freight traffic.
- 2.3 Strategic plans for transport in Kent can be found in the third Local Transport Plan, Growth without Gridlock and the Rail Action Plan for Kent. All of these can be found on the KCC website at www.kent.gov.uk.

Highways Agency (HA)

- 2.4 The management and maintenance of motorways and trunk roads in England is the responsibility of the Highways Agency, which is an executive agency of the Department for Transport (DfT). As part of the network management duty, KCC work in partnership with the Highways Agency (HA) to prevent incidents on the strategic road network which have an adverse impact on local roads.
- 2.5 Kent roads managed by the HA include the M25, M26, M20, M2/A2, A21, A249 and A259.

Department for Transport

2.6 The DfT runs projects to encourage the transfer of freight from road to rail and water, both of which are comparatively sustainable and have a smaller impact on people's lives. The DfT also sets regulations for the industry and researches freight transport, including their November 2011 national study into lorry parking².

3.0 Kent County Council's vision

3.1 "To promote safe and sustainable freight distribution networks into, out of and within Kent, which support local and national economic prosperity and quality of life, whilst working to address any negative impacts on local communities and the environment both now and in the future."

4.0 Road haulage in Kent

- 4.1 Road haulage is by far the dominant mode of freight transportation. There are three categories of road freight:
 - that passing through the county *en route* to another destination;
 - HGV/Large Goods Vehicle (LGV) freight with its final destination in Kent; and

² Department for Transport, 2012a.

- > small goods vehicles delivering to residential or commercial properties.
- 4.2 The first category will primarily use Kent's motorways and "A" roads. The other two categories will use these roads for the majority of their journey but use the local road network to access their destination. Where the journey originates within Kent it is likely that the local road network is used during the first few miles too.
- 4.3 It is generally on the local road network that lorries may cause problems and disruption, for example in contravening weight restrictions, parking in areas other than designated spaces, and using inappropriate routes. Furthermore, KCC receives complaints from communities regarding environmental issues such as excessive noise and vibrations causing disturbance and damage. However, these impacts have to be balanced with the need for lorries to serve destinations like supermarkets and industrial estates.
- 4.4 One of the most publicised impacts on the county Operation Stack. This occurs when disruption to cross-Channel services results lorries being parked, or stacked, along sections of the M20, and longer causing delays journey times by diverting traffic onto local roads and adversely impacting on businesses in East Kent.



- 4.5 Many of the county's roads were not built for HGVs. As a result, use by these vehicles can cause a range of issues for local communities, such as air and noise pollution, vibrations, and inappropriate lorry parking, as well as damage to the road network itself.
- 4.6 Cross-county routes often converge in town centres, for example the A20, A229 and A249 in Maidstone and the A28 and A257 in Canterbury. In these areas traffic tends to move slowly, with traffic lights and more people creating a stop-start flow, particularly in peak commuter hours. This type of flow produces more vehicle emissions. Due to their large engine size and use of diesel fuel, lorries produce a disproportionately large amount of particulate matter, nitrogen oxides and other pollutants and unfavourably affect air quality.
- 4.7 Kent has developed as a county with a series of medium-sized towns rather than a main urban centre. This creates a need for delivery journeys across the county, which can be problematic as many roads linking the towns are single carriageway. Consequently lorries can cause congestion.
- 4.8 In the longer term, KCC has the aim to enable a system of 'bifurcation' for port traffic. This would direct traffic heading to Dover's Eastern Docks on to the M2/A2 and that for the Western Docks and Channel Tunnel on to the M20/A20. This would minimise conflicts between international and regional

- traffic, free up capacity on the M20, tackle air pollution and support regeneration in Dover³. A third Thames Crossing would facilitate this.
- 4.9 Kent has much more HGV traffic than neighbouring authorities due to its role as a UK Gateway, as will be discussed in more detail in section 6.0.

5.0 Other freight distribution networks

Rail freight

- 5.1 The transportation of freight by rail is still a relatively small share of the overall surface freight market at around 11%⁴. The use of this mode of distribution is more sustainable and can reduce pressure on the road network, with one freight train typically removing around 60 lorries and producing far fewer carbon emissions and air pollutants per tonne of freight than road haulage⁵. Growth in demand for rail freight is expected, with more retailers and other businesses looking to make their supply chain sustainable.
- 5.2 In Kent, the principal freight routes were designed with central London as the focus. One of the key constraints for the expansion of rail freight services in the county is the lack of connectivity to the West Coast Main Line with services having to operate through the congested inner London network as well as gauge restrictions preventing the use of larger freight trains⁶.



- 5.3 The Channel Tunnel Rail Line (High Speed 1 HS1) has the ability to carry fast freight services. HS1 Limited is currently working with operators to deliver sustainable freight services⁷. This has the potential to take some lorries off the road and therefore KCC favours its utilisation.
- 5.4 In the future, High Speed 2 (HS2) may also present opportunities for the efficient transport of freight by rail over long distances, which could impact positively on Kent. This route will run from London to the West Midlands and then potentially further north in the future.
- 5.5 In November 2011, the DfT released some interim guidance on large-scale strategic rail freight interchanges, highlighting the benefits of encouraging modal shift from road to rail freight. Whilst the County Council recognises the benefits of national and international rail freight and supports its expansion, it does not support the location of a road-to-rail freight interchange within the county. However, an interchange closer to London and the M25 (therefore taking lorries off Kent's roads) is supported, including the Howbury Park facility in the Slade Green area of the London Borough of Bexley.

³ Kent County Council, 2011a.

⁴ Network Rail, 2010a

⁵ Ibid.

⁶ Network Rail, 2010b.

⁷ High Speed 1, 2011.

5.6 It is noted that KCC has little influence over the growth of the rail freight industry.

Air freight

5.7 Both Manston Airport and London Ashford Airport have modest freight operations. However, the majority of air freight in the UK uses the large London airports (Gatwick, Heathrow and Stansted) as well as airports near to the many distribution centres in the Midlands (Manchester Airport and Nottingham East Midlands). This is because a large amount of freight



travels in the belly holds of passenger planes, long-haul services are concentrated around London, and freight aircraft use airports close to their markets. Consequently, it is unlikely that Kent will become a major centre for air freight.

Maritime freight

- 5.8 The transportation of goods by water has many advantages. Shipping produces significantly less carbon per tonne of freight and in addition noise pollution, vibration, congestion and accidents are either eliminated or greatly reduced. For businesses, the cost benefit from aggregation of individual shipments is greatest for sea freight and furthermore the positive environmental effects can be used to enhance company image⁸.
- 5.9 Kent's long coastline and proximity to the European market makes it well placed to handle maritime freight. Continental imports and exports make up the majority of business rather than short sea shipping to elsewhere in the UK. Additionally, there are few navigable inland waterways that can be utilised for inland freight movements.



6.0 Kent's international gateways

- 6.1 Kent is one of two key UK Gateways in the south of England. This is where Trans-European Networks for Road and Rail converge. As such, the county is a major entry and exit point for the movement of international freight. This is illustrated by the fact that 87% of powered goods vehicles travelling to mainland Europe did so via the Port of Dover and Channel Tunnel in 2011⁹.
- 6.2 Kent contains the following international gateways:

Department for Transport, 2012b.

⁸ Freight by water, 2011.

The Port of Dover

- 6.3 Over the past two decades, the number of lorries using the Port of Dover has more than doubled¹⁰. The ferry services are vulnerable to poor weather and industrial action that causes delays and ultimately lead to the implementation of Operation Stack. Furthermore, in December 2011 the Government approved the £400 million development of Terminal 2 at Dover, doubling the capacity of the port¹¹. Although this will not be built until market conditions are favourable, the potential future impact on freight traffic in the county is significant.
- 6.4 The Calais 2015 Port Project aims to double the size of the Port of Calais to keep up with developments at Dover. The project also includes a new logistics centre to cater for freight between the continent and UK¹². Completion is estimated at around 2016 and these capacity increases could increase the amount or HGV traffic entering the UK through Kent,

The Channel Tunnel

6.5 Like the Port of Dover, the Channel Tunnel also caters for lorries driven directly on to the train as well as containerised freight. Problems here, such as industrial action or a fire in the tunnel can also lead to Operation Stack being implemented.

The Port of Sheerness

6.6 Sheerness is a deepwater port and one of the UK's largest import points for fruit, timber, paper products and vehicles¹³. Peel Ports, who own the facility, have plans to develop it over the next 30 years, including a 40 hectare port expansion¹⁴. It handles both containerised and conventional cargo.



Kent's wharves

- 6.7 There are a number of wharves on the Kent coast, including at Northfleet, Whitstable and Ramsgate. Landings of marine dredged sand and gravel in Kent have consistently accounted for around 30% of all landings in the south east region (excluding London) between 1998 and 2008. Landings in Medway make up a further 25%. This is because Kent has wharves suitable for larger ships.
- 6.8 Imported materials include cement, pulverised fuel ash, slag, crushed rock and marine dredged aggregates.

¹⁰ Kent County Council, 2011a.

¹¹ Kent Online, 2011.

¹² Port of Calais, 2012.

¹³ Kent County Council, 2011a.

¹⁴ Ibid.

Manston Airport

6.9 Currently the Airport caters for around 32,000 tonnes of freight each year, consisting of mainly perishable products from Africa¹⁵. The owners of the airport have forecast that they will accommodate 400,000 tonnes of freight by 2033¹⁶. Onward transportation from the airport is by road.

Rail-linked aggregates terminals

- 6.10 There are four active railheads in Kent. Sevington (Ashford), Hothfield (Ashford) and Allington (Maidstone) imported 500,000 tonnes of aggregates between them in both 2007 and 2008¹⁷. The fourth railhead is at East Peckham (near Maidstone), which also imports aggregates.
- 6.11 The cost to transport bulk materials, such as aggregates, is high and so the majority of imports to these sites are destined for Kent and Medway and some to London, mainly for construction purposes.

7.0 Other freight generators

International gateways outside of Kent

7.1 Additionally there are international gateways in nearby and neighbouring authorities, including the Thamesport at Medway, London Gatwick Airport in West Sussex and London Heathrow Airport in West London. Medway also has a number of wharves importing aggregates. All of these are centres for freight and may use Kent's road network, particularly the M25/M26/M20/M2 routes.

Logistics operators

7.2 There is a significant amount of warehousing around Maidstone, Aylesford, Sittingbourne, Faversham, and Dartford. Many major distributors have regional distribution centres in these areas serving south London, Kent, Surrey and Sussex due to the good motorway connectivity.

Agricultural and horticultural businesses

7.3 Kent is often referred to as the "Garden of England" because of the fertile land, warm and dry climate, and history of food production in the county. £20 million of strawberries are grown in Kent each year¹⁸ as well as produce from extensive orchards and other farms including a growing wine industry and market gardening. All of these crops rely on transit by lorry to their respective



markets and generally operate from farms where access is only by local rural roads.

¹⁵ Kent International Airport - Manston, 2009.

¹⁶ Kent County Council, 2011a.

¹⁷ Kent County Council, 2011b.

¹⁸ BBC Inside Out, 2003.

Planned construction

7.4 Proposed development will increase demand in the region for construction aggregates and generate more HGV movements. This includes the Thames Gateway region, which is made up of some of the east London Boroughs, the southern part of Essex, Medway, and Dartford, Gravesham, and parts of Swale in Kent. Additionally the proposed housing at the Ashford Growth Area will increase demand. The wharves in north Kent and Medway and the railheads in the Ashford area will be able to serve the development sites. London's Crossrail project is already having an affect as excavated material is transported by rail to Northfleet and then onward by water¹⁹.

8.0 Kent Freight Action Plan objectives

Objective 1: To find a long-term solution to Operation Stack.

The issues

- 8.1 When cross-Channel services from the Port of Dover or through the Channel Tunnel are disrupted, there is no additional capacity on either side to store the waiting vehicles. To combat this, sections of the M20 are used to "stack" lorries until normal service can resume at the ports.
- 8.2 Other traffic must be diverted from the M20 to the A20 and this causes congestion, delays and unreliable journey times as well as negative impacts on business activities in East Kent. Aside from its impact on the road network, Operation Stack requires manpower from Kent Police and the Highways Agency to manage and control queuing lorries.
- 8.3 Research by the Freight Transport Association (FTA) has shown that Operation Stack costs the UK economy £1 million per day and costs Kent Police £15,000 per day as well as taking up to 90 officers away from their usual place of work²⁰.
- 8.4 Although the disruption during these periods is intense, Operation Stack is a relatively rare occurrence with no simple solution.

Current actions

8.5 In the absence of a permanent solution, KCC will continue to support the use of the Quick Moveable Barrier (QMB), which is a concrete barrier moved into place to allow contraflow running on the M20 and therefore keeps the route open for non-port traffic (see picture). This is used for phases 1a and 1b of Operation Stack. When the HA consulted KCC on the discontinuation of the QMB, KCC responded urging the HA to retain it.



¹⁹ Crossrail, 2012.

²⁰ Kent County Council, 2011a.

8.6 KCC has been working with Kent Police, the Highways Agency and district councils to find a long-term solution to Operation Stack and has a proposal for a lorry park adjacent to the M20 between junctions 10 and 11. This will take queuing lorries off the M20 carriageway and allow the motorway to function as normal, reducing the disruption and delay to Kent residents and businesses. A low cost design is being prepared which will aim to provide 2,700 spaces.

Future actions

8.7 KCC will continue to progress the Operation Stack lorry park design to a stage where it can be submitted for planning permission. Methods for funding and operation of this proposal will also be investigated.

Objective 2: To take appropriate steps to tackle the problem of overnight lorry parking in Kent.

The issues

- 8.8 There are currently nine official overnight lorry parking facilities in Kent:
 - Medway Pavilion Motorway Service Area A2;
 - Maidstone Motorway Service Area M20;
 - Stop 24 Motorway Service Area M20;
 - Ashford Truck Stop A2070;
 - Nell's Café, Gravesend A2;
 - Priority Freight, Dover A2;
 - Oakdene Café, Wrotham A20;
 - Venture Café, West Malling A20; and
 - Somerfield Petrol Station, Mount Pleasant Roundabout, Minster A299.
- 8.9 The November 2011 DfT study into national lorry parking supports anecdotal evidence and previous studies in finding that on-site lorry parking facilities (i.e. designated truckstops) in the county are unable to meet demand for spaces.
- 8.10 The DfT found severe off-site parking (i.e. not in truckstops) in Swale, Canterbury and Dover districts²¹. In Swale, 83 vehicles were found parked up, which was the highest number in the whole south east region and probably due to the fact that the area does not have a truckstop and nor does neighbouring Canterbury. Currently, Ashford and Gravesham are the only two districts in Kent that still have capacity at official sites.
- 8.11 Particular hotspots were found along the A249 Maidstone to Sheerness, M2 Ashford to Folkestone and A2 Dover to Faversham. A hotspot is defined as more than 25 vehicles parked within 5km of one another. It was also found that UK registered lorries are slightly more likely to park off-site than non-UK registered lorries.
- 8.12 Due to excess demand, poor signing from motorways and the cost of using truckstops, drivers are likely to use unsuitable parking areas, such as laybys

_

²¹ AECOM, 2012.

or industrial estates²². It may also be that the facilities in Kent are not secure enough to make using them worthwhile as a rise in freight crimes has increased demand for safe and secure lorry parking²³. There is a concentration of freight crimes in the London to Dover corridor.

- 8.13 Private sector investment in new lorry parking facilities is unlikely due to the high costs associated with construction as well as high overheads, and therefore low profit margins, associated with operating a stand-alone lorry park. Therefore a degree of support from the public sector is required.
- 8.14 The European LABEL project produced a method for grading lorry parking facilities based on security and services offered. Truckstop owners can use a self-assessment tool to rate their site and make this information available online on the International Road Transport Union's website for registered users²⁴. However, the data is incomplete for Kent.

Current actions

- 8.15 KCC is currently carrying out feasibility studies for truckstops at various locations along the M20/A20 and M2/A2 corridors and will look to work in partnership with the private sector to secure and promote these sites.
- 8.16 At the same time, KCC will work with Kent Police to manage the illegal parking of lorries in laybys and local estate roads.



- 8.17 KCC will continue to work with local councils and residents who report unsuitable and anti-social lorry parking. These matters will be investigated and if appropriate a ban on parking could be implemented. However, these will be considered in the context of the wider area so as to not simply move the problem on.
- 8.18 Kent's Vehicle Parking Standards include provision for lorry parking at developments where appropriate. These are now guidance only pending the final National Planning Policy Framework, which will enable local authorities to specify what facilities are required in their area.

Future actions

- 8.19 KCC will update the recommended lorry route maps for Kent. These maps will show recommended overnight parking, encouraging drivers to park appropriately. They will initially be distributed online and promoted through industry bodies. If there is a demand for printed copies these could be made available at service stations.
- 8.20 Specifically for England, the Highways Agency has produced a Truckstop Guide, including a section on the South East. This document is downloadable

²² Ibic

²³ Freight Transport Association, 2011(a).

²⁴ International Road Transport Union, 2011.

from the HA website by region as well as having an online interactive map. It identifies lorry parking sites, gives directions and lists the facilities available, such as cash machines, CCTV and security fencing; available at www.highways.gov.uk/knowledge/25954.aspx. The County Council will promote this guide and through dialogue with the HA ensure that it remains current and complements our own lorry route maps.

- 8.21 Where there is an appetite to do so, KCC will facilitate the formation of Freight Quality Partnerships (FQPs). A FQP is a mechanism for open discussion amongst freight operators, freight generators and community representatives. The impetus would be on the freight industry to lead any FQPs with the support of others. They are best formed around a specific issue to ensure resources are focused and used effectively.
- 8.22 KCC will investigate using an online reporting service whereby freight related issues can be highlighted. This could be part of a freight journey planner (see objective 3) or Lorry Watch scheme (see objective 4). Issues would be investigated and the informant notified of any resulting action.

Objective 3: To effectively manage the routing of HGV traffic to ensure that such movements remain on the strategic road network for as much of their journey as possible.

The issues

- 8.23 It is preferable for lorries to use the strategic road network because this is designed to withstand the pressure of heavier and wider vehicles, accommodate high traffic volumes, are generally segregated from housing, and facilities for lorry drivers are located with this network in mind. Therefore, the impact of freight on communities is minimised.
- 8.24 However, on occasion the movement of freight on the strategic road network does present a problem, most noticeably during the implementation of Operation Stack. At other times the volume of freight traffic influences road capacity, speed and therefore congestion.
- 8.25 An important influence over whether drivers stick to the strategic road network is the use of, and sometimes overreliance on, satellite navigation (sat nav) devices. Drivers sometimes pay more attention to the route advised by their device and consequently miss or ignore road signs. This is particularly the case where drivers are unfamiliar with the area, resulting in them using unsuitable roads or perhaps getting stuck or damaging buildings and street furniture. With pressures to deliver in the fastest time and with minimal fuel consumption, sat navs may be set to use the shortest distance but this is not always the most appropriate route.
- 8.26 Unfortunately, many of these devices are designed for cars and so do not consider the suitability of the route for a large vehicle and corresponding restrictions on the highway. Another contributing factor is the length of time it takes for data to get from local authorities to mapping companies resulting in out-of-date data and therefore incorrect routing. In other instances, drivers are not updating their maps when a new version is released.

8.27 Use of the local road network generally occurs during the first and last miles of a journey, when picking up or delivering goods. The County Council acknowledges that freight vehicles need to use this network and that this supports the economic prosperity of Kent as well as the quality of life enjoyed by its residents.

Current actions

- 8.28 KCC is working to develop an online lorry journey planner. To do this, all the information held on weight, width and height restrictions, parking restrictions, loading times, and various other data will be uploaded into a routing database. This will form a web page linked from www.kent.gov.uk so drivers and hauliers will be able to input start and finish locations as well as the physical dimensions of their vehicle to generate a suitable route. This will also be promoted on our partners' websites.
- 8.29 KCC will continue to use positive signing to direct lorries onto the most suitable roads.
- 8.30 KCC was represented at the recent sat nav summit hosted by Local Transport Minister Norman Baker. The Council will continue to contribute to this debate, using Kent's experiences to find nationwide solutions to the issues caused by satellite navigation systems.



Future actions

- 8.31 KCC will lobby and try to work with satellite navigation manufacturers to update their mapping data so that lorry-appropriate routes can be generated. In addition, KCC will ensure that data is available to aid the development of accurate lorry satellite navigation systems.
- 8.32 Utilising the FQP model could help to develop routing solutions, particularly when working with a local haulage company. However, it is recognised that when vehicles originate from the continent it may not be possible to administer solutions through FQPs.
- 8.33 KCC will update the lorry route maps for the county from the previous version issued in 2001. These include large scale town centre maps because these are often the final destination for freight within the county. The maps are another means by which drivers can become informed about appropriate route choices to make whilst travelling through Kent.
- 8.34 To accompany the updated route maps, a review of HGV signing across the county will be conducted to ensure that it is clear and appropriate. For example, this could include the use of the new "no HGV" pictorial sign to enable all drivers, whatever their nationality, to understand the meaning.

8.35 The use of lorry-specific satellite navigation systems will be encouraged, for example when working with industry representatives and haulage companies, and in KCC's own road safety information (see 8.51).

Objective 4: To take steps to address problems caused by freight traffic to communities.

The issues

- 8.36 This objective is presented as distinct from objective 4 because of the range of issues other than routing that affect local communities. Further, in many cases lorries need to use the local road network so this objective will cover actions than can mitigate the impacts where rerouting is not possible.
- 8.37 One example of this situation is in Littlebourne, Canterbury District. The junction of Nargate Street with the A257 is particularly tight with residential properties fronting directly onto the carriageway. HGVs using the junction have damaged buildings and KCC has consequently used bollards to protect them. KCC is now working with the Parish Council to use the new pictorial sign advising HGVs not to use the road. However, it is recognised that there are a number of large agricultural businesses in the area that need to use the road. The needs of all users must be balanced in any decision and therefore a legally enforceable weight limit was not introduced.
- Other projects KCC have been working on include the Sittingbourne and 8.38 Rushenden Relief Roads, which have been designed to allow freight traffic to take a direct route to industrial parks therefore avoiding unsuitable residential areas. However, building new roads is highly unlikely to be an option in many
- 8.39 On Kent's roads in 2010 there were 40 crashes involving goods vehicles (defined as anything from a car-based van upwards) that resulted in a killed or seriously injured (KSI) casualty, but only 4 casualties were goods vehicle KSI casualties²⁵. This suggests that when a goods vehicle is involved in a crash it is the occupants of other vehicles or pedestrians/cyclists who are most likely to be injured.
- 8.40 The majority of foreign goods vehicles over 7.5 tonnes maximum gross weight (mgw) use the motorway and trunk roads in Kent (managed by the Highways Agency), with the greatest number along the M20 corridor. It is no surprise, therefore, that 48% of HGV crashes (all severity) on the M20 involved a foreign HGV compared to 19% for Kent overall (42 out of 219 HGV crashes)²⁶. To some extent, this reinforces the view that it is local operators and last mile deliveries that use the local road network in Kent rather than foreign drivers who instead tend to be making long distance journeys on the strategic road network.

Current actions

8.41 There are a number of possible interventions the County Council can take to help minimise and prevent the negative effects of freight traffic.

 $^{^{\}rm 25}$ Jacobs and Kent County Council, 2011a. $^{\rm 26}$ $\it lbid.$

- 8.42 Education and awareness can help people to become more accepting of HGV traffic as a necessary part of modern life. It can also influence people to make sustainable choices, such as getting parcels delivered to their local shop to avoid the need for redelivery if no one is at home. This can reduce freight traffic on the county's roads. The FTA is involved in educational work and the County Council will support and work with them in Kent. More information on sustainable distribution is in objective 6.
- 8.43 Positive signing can be used to direct large freight vehicles onto suitable roads and ensure that they keep on the strategic road network.
- 8.44 Weight restrictions take two forms structural and environmental. Where a bridge, culvert or carriageway is structurally incapable of supporting vehicles above a certain weight a restriction can be implemented that applies to all vehicles. Alternatively, where large freight vehicles are using unsuitable roads, such as narrow residential lanes, an environmental weight restriction can be used. This would apply to vehicles over a certain weight except buses, cranes and emergency vehicles or where they need to load/unload or be garaged.
- 8.45 Width restrictions can be used in the same ways as weight restrictions. Similarly, height restrictions are used on structures such as bridges or in areas when buildings overhang the highway in order to prevent vehicles from causing damage.
- 8.46 KCC will continue to use such appropriate. where measures However, it is recognised that the effectiveness of these restrictions is largely dependent upon their enforcement. which is labourintensive and done on a prioritisation basis by Kent Police.
- 8.47 KCC will continue to work with local councils and residents to investigate problems caused by the movement of freight through the county. In the current economic climate, critical safety schemes will be prioritised.



- 8.48 KCC is aware that public service vehicles also make up goods vehicle traffic on the road. Therefore, KCC has been working with some of the districts and boroughs currently in the procurement stage for their new waste collection contracts. This will result in more effective restrictions for waste collection along key routes, for example only collecting waste outside of peak hours. This assistance will be offered to other authorities in Kent in future.
- 8.49 The Council will support the District and Borough initiatives to improve air quality.

- 8.50 KCC recently worked with the National Farmers' Union (NFU) to explore ways to collaborate and produced and article that was distributed to NFU members and available on KCC's website. This was targeted around springtime and covered issues regularly reported to KCC, such as mud on the road and slow moving vehicles. It also offered farmers in Kent a point of contact for any highways and other concerns that they may have. KCC will continue this partnership working.
- 8.51 Online leaflets are produced in a variety of languages and aimed at foreign drivers (HGV and tourist) to offer advice on how to drive on Kent/UK roads²⁷. Paper copies have been distributed at the Ports and Eurotunnel in conjunction with Port Police and Kent Police, and the website information is promoted through port and Eurotunnel ticket agencies. The County Council will continue to promote safer road use to HGV drivers with the aim to reduce the number of HGVs involved in road traffic collisions. This medium will also be used to promote key messages, such as using HGV specific sat navs and identifying the new pictorial signs indicating that a route is unsuitable for lorries. The website address is: http://www.kentroadsafety.info/tourist-drivers.php
- 8.52 KCC is currently investigating adapting the Lorry Watch scheme, which is usually based around a weight limit. Local volunteers record the details of vehicles contravening the weight limit and repeat offenders are contacted to ascertain why this is happening. Alternatively, the data collected could be used to plan an enforcement regime or be merged with possible work outlined in paragraph 8.52.

Future actions

- 8.53 Consistent with the localism agenda, KCC will explore working with local councils and communities to develop a methodology to show that a route is unsuitable for HGVs. This could be an extension to the Lorry Watch scheme or a standalone campaign where a sign is publicised amongst HGV drivers, for example at the ports, and then residents could display the sign on their property to inform drivers in the area.
- 8.54 As stated in objective 3, to combat the use of inappropriate routes KCC will seek to work with and lobby satellite navigation system manufacturers. The development and promotion of an online freight journey planner will also help to resolve these issues.
- 8.55 Working with freight generators, haulage companies and other interested parties either informally or by forming an FQP could help to resolve local issues. By working with the freight industry it is hoped that compromises will be reached that successfully balance the needs of industry with the needs of residents.
- 8.56 To expand on the approach outlined in 8.48, the County Council will seek to work with town centre and shopping centre management companies on their delivery and servicing arrangements, such as times and routes used, to minimise the impact of HGV traffic on the road network and communities.

²⁷ Kent County Council, 2012.

Objective 5: To ensure that KCC continues to make effective use of planning and development control powers to reduce the impact of freight traffic.

The issues

- 8.57 Involvement in forward planning and development management enables KCC to influence freight movements and, therefore, to reduce their impact on local communities where possible. KCC aims to ensure that this involvement is used fully and appropriately.
- 8.58 When housing, industrial or other development is proposed, KCC (as the Highway Authority for all except the motorways and trunk roads) is consulted as a statutory consultee. KCC can recommend that the district council (as the planning authority, for all except "County matters" applications) imposes conditions on planning consents and/or enters into legally binding agreements with developers. These conditions/agreements can be for the construction and/or the operational phases of the site. Such conditions can be made with the aim to minimise any impact on the physical road network as well as the surrounding properties.
- 8.59 New developments that are deemed to have a significant impact on the surrounding transport network are required to produce a Transport Assessment that examines the extent of any impact and identifies mitigation measures.
- 8.60 KCC is also involved, in partnership with the district councils, with the forward planning of development



- through the preparation of Local Development Frameworks/Local Plans and related local transport strategies.
- 8.61 KCC is the planning authority for minerals, waste and County Council development applications ("County matters"). In such cases, the consultation and recommendations described in 8.58 above are internal to KCC.
- 8.62 It is likely that many of the developments covered by 8.58 and 8.61 above will become attractors of HGVs. However, KCC also monitors applications for Goods Vehicle Operator Licences (GVOL), which are made to the Traffic Commissioner. These licenses relate to sites at which HGVs are based and from which they operate. Involvement in this licensing is separate from, but with some relationship to, development management.

Current actions

8.63 The Traffic Commissioner for the South Eastern and Metropolitan Traffic Area determines applications for Operators' Licences (or O Licences). An O Licence is the "legal authority needed to operate goods vehicles in Great

Britain"²⁸. An edited version of the fortnightly "Applications and Decisions" document, retaining only items relevant to Kent, is assessed by KCC, as well as being shared with certain district partners. An O Licence determines if vehicles can be kept on the site.

- 8.64 The O Licence process grants KCC limited rights of objection, which can be made on two grounds. Firstly, based on the safety on the highway at the point of access to the site; and secondly, on environmental grounds, such as degradation of grass verges and excessive noise on approach roads for local residents. For objections on environmental grounds KCC tends to work with the relevant district or borough. All objections must be made within 21 days and must be copied to the applicants. KCC can work with applicants to negotiate a solution, if such is possible, and then withdraw the objection.
- 8.65 Distinct from O Licence applications, KCC also comments on planning applications for all developments proposed in Kent that will have an impact on the highway network. This enables KCC to influence, and even enter into, a legal agreement with the developer and/or recommend the imposition conditions on the consent.
- 8.66 During the construction phase of any development legal а agreement or condition can be used to secure a construction management plan that designates lorry routes that construction traffic is obliged to use. KCC can also ensure that pre and post-construction surveys are carried out to assess any damage done



to the surrounding roads and have it rectified by the developers.

- 8.67 As far as is reasonably practicable, developments generating freight movements should be located where there is easy access to the strategic road network, having regard for the preferred freight routing. When planning applications are submitted, developments are assessed for all reasonable access, including deliveries and collections by HGVs. If access is inappropriate, then an objection may be made, a planning condition imposed or KCC may work with the developer to reach a mutually agreeable solution. This could include, for example, upgrading a junction to accommodate large vehicles.
- 8.68 Opportunities to locate commercial developments next to alternative forms of transport, such as rail, are supported. However, it is recognised that such developments are very rarely on a scale large enough to warrant the necessary new rail infrastructure. Further, due to cost and time reasons road haulage is often the most attractive option.
- 8.69 Linking back to O Licences, when sites are the subject of applications for permission for a change of use, planning conditions can be imposed. For

²⁸ Freight Transport Association, 2011(b).

example, the specific area of the site to be used for the parking and manoeuvring of HGVs can be identified and safeguarded, operational hours can be limited, and access and egress in only one direction can be specified.

Future actions

- 8.70 Exceptionally, developments have delivery and servicing plans (DSPs) restricting (by size, weight or frequency) freight traffic around the site once it is operational. However, these are not generally used because they rarely fit with the commercial purpose of the business(es). However, a DSP can help reduce congestion at peak hours and cut air pollution by reducing the number of delivery trips to a site or making them out-of-hours. KCC could consider the footprint of its own buildings in order to be exemplary of the successful implementation of a DSP.
- 8.71 Delivery times tend to be market-driven and vary between operators. Some commercial operations will use out-of-hours deliveries to avoid any impact on the customer shopping experience whereas others may depend on stock levels rather than time. In appropriate situations, KCC will investigate limiting sites to night-time deliveries in order to spread freight traffic throughout the day. However, this would only be where there would be no disturbance to surrounding residents or to the business itself. Transport for London (TfL) have produced a code of conduct for night time deliveries, highlighting ways to minimise noise and nuisance to surrounding sites²⁹. KCC will promote this code and explore possible trial sites across the county.
- 8.72 As discussed in 8.55, KCC will also investigate using a more informal approach by working with town or shopping centre management.

Objective 6: To encourage sustainable freight distribution.

The issues

8.73 The 2010 Interactive Media in Retail Group consumer survey found that 75% of customers had experienced complete or first time delivery failure³⁰. This suggests that there is great potential to reduce the proportion of freight on the county's roads that is there to carry out to redeliveries. Predominantly these are smaller vehicles, such as vans, but they still have an impact on Kent in terms of congestion, air quality and noise.

Current actions

- 8.74 There are already operational alternative delivery networks that can be accessed in Kent. Many high street and online retailers offer the facility whereby parcels can be sent to local corner shops so that the customer can collect the parcel at a convenient time. This prevents the need for redelivery and reduces the mileage that freight covers.
- 8.75 Other networks use electronic lockers placed at strategic locations, such as railway stations, leisure centres, supermarkets, and petrol stations. When purchasing from an online store the customer specifies the address of the locker company who then forward the parcel on to their chosen locker

²⁹ Transport for London, 2011.

³⁰ Hampshire County Council, 2006.

- location. A code is sent through to the customer and they can collect their parcel, again reducing the need for redelivery.
- 8.76 Kent County Council supports the use of these alternative delivery networks and will promote their use.

Future actions

8.77 As explained in paragraph 8.42, KCC is has expressed an interest in working with the FTA in their educational work. This will form part of the Council's commitment to helping Kent's residents to make sustainable choices. For example, realising that when large items are ordered, such as white goods or furniture, this places another goods vehicle on the county's road network. Therefore



education and awareness can help people to accept the necessity of freight traffic to maintain their current standard of living. KCC is also prepared to work with other organisations carrying out similar work.

8.78 Another means to reduce failed deliveries is to have parcels sent to places of work. Provided this would have a minimal impact on the business, companies should be encouraged to accept personal post for their staff members. The use of workplace deliveries will be investigated within the KCC with the potential to run a trial to assess its effectiveness.

9.0 The Freight Action Plan for Kent – Table of objectives and action points

- 9.1 The objectives discussed in this Plan have been collated into a table detailing their corresponding actions, targeted outcomes and identified risks.
- 9.2 The Action Plan will be monitored on an ongoing basis by the Traffic Manager.

Objective	Actions	Outcomes	Risks
1. To find a long-term solution to Operation Stack.	1.1 To continue to support the use of the Quickchange Moveable Barrier during phases 1a and 1b of Operation Stack.1.2 To progress the Operation Stack Lorry Park proposals.	 Reduced disruption to the motorway and diversionary routes. A lessened economic impact on businesses in East Kent. 	 The Highways Agency withdraw the QMB. Operation Stack Lorry Park does not receive planning permission. A source of funding is not secured.
To take appropriate steps to tackle the problem of overnight lorry parking in Kent.	 2.1 To continue assessing the feasibility of new truckstops and look to work with the private sector for delivery. 2.2 To continue working in partnership with Kent Police to tackle illegal lorry parking. 2.3 To continue to work with local councils and residents who report inappropriate lorry parking. 2.4 To encourage the inclusion of lorry parking at development sites, where appropriate. 2.5 To update the lorry route map for Kent and distribute it online and through partner organisations. 2.6 To work with the Highways Agency to ensure their Truckstop Guide is current and to promote the use of the guide by lorry drivers. 2.7 To work with partners to form a Freight Quality Partnership based around a specific issue where there is the appetite to do so. 	 Reduction in anti-social lorry parking. Better facilities for drivers. Better informed drivers. Engaged and empowered local communities. Positive partnership working with the freight industry. 	 No feasible truckstop sites are found. Private sector partners cannot be found to construct and/or run new truckstops. Pressures on KCC and Kent Police funding restrict what action can be taken on illegal lorry parking. Preventing parking in one area transfers the problem to a new location. KCC's actions do not meet the public's expectations, e.g. due to funding constraints. The lorry route maps are not used.

Objective	Actions	Outcomes	Risks
	2.8 To investigate the development of an online reporting service where inappropriate lorry parking can be logged.		The Truckstop Guide is not used.
3. To effectively manage the routing of HGV traffic to ensure such movements remain on the strategic road network for as much of their journey as possible.	 3.1 To continue with the development of an online lorry route planner. 3.2 To continue to use positive signing to direct lorries onto the most suitable roads. 3.3 To continue to contribute to the debate around sat navs. 3.4 To lobby and work with manufacturers of satellite navigation systems to improve HGV route generation. 3.5 To work with partners to form a Freight Quality Partnership based around a specific issue where there is the appetite to do so. 3.6 To update the lorry route map for Kent and distribute it online and through partner organisations (also action 2.5). 3.7 To review HGV signing across the county. 3.8 To encourage the use of lorry-specific satellite navigation systems. 	 Fewer reports of freight traffic using inappropriate routes. Better informed drivers. Greater journey time reliability. Improved sat nav route generation. Positive partnership working with the freight industry. 	 The online lorry route planner is not used by lorry drivers or haulage companies. Positive signing is ignored. Satellite navigation system manufacturers are unwilling to engage. The lorry route maps are not used. Funding constraints restrict what measures can be implemented.
4. To take proactive steps	 4.1 To support the FTA's educational work around the necessity for freight as part of modern life and work with other organisations in this field. 4.2 To use positive signing where needed to direct 	Greater understanding of the necessity for freight amongst the general population.	 Despite education, there is no behaviour change. Positive signing is ignored. Pressure on KCC funding

Objective	Actions	Outcomes	Risks
to address problems caused by HGV traffic to communities.	goods vehicles onto suitable roads (see also action 3.2). 4.3 To implement height, width and weight	 Fewer reports of freight traffic using inappropriate routes. 	restricts what action can be taken and community expectations are not met.
	restrictions where there is a clear need. 4.4 To continue to work with local councils and communities to investigate problems caused by	 Greater journey time reliability. Engaged and empowered 	Districts and Boroughs do not use KCC's input into refuse collection route restrictions.
	 the movement of freight (see also action 2.3). 4.5 To continue working with boroughs and districts to ensure suitable waste collection times and routes are used and to roll this out to other Kent authorities. 	local communities	Districts and Boroughs whose contracts are not up for renewal cannot use alter their restricted routes.
	4.6 To support District and Borough air quality initiatives.	 Smaller proportion of accidents involving HGVs. 	Foreign lorry drivers do not look at the leaflets.
	4.7 To continue working in partnership to manage the highway network, such as the recent work with the NFU.	Improved evidence base of lorry issues.Improved sat nav route	➤ The leaflets are not available in enough languages.
	4.8 To promote road safety amongst HGV drivers and update the leaflets to take account of new signs and promote lorry-specific sat navs.		The adapted Lorry Watch scheme has poor adoption rates in Kent or has little impact.
	4.9 To investigate adapting the Lorry Watch scheme for Kent.		 Signing may be ignored or unrecognised by drivers; or
	4.10 To explore the use of localised campaigning and signing to advise HGV drivers of unsuitable		it could distract road usersSat nav map manufacturers
	roads, potentially as an extension to Lorry Watch.		are unwilling to engage.
	4.11 To lobby and work with manufacturers of satellite navigation systems to improve HGV route		Businesses, town and shopping centre

Objective	Actions	Outcomes	Risks
	 generation (see also action 3.4). 4.12 To work with partners to form a Freight Quality Partnership based around a specific issue where there is the appetite to do so (see also action 3.5). 4.13 To seek to work with town and shopping centre management on their delivery and servicing arrangements to minimise lorries on the local road network during peak hours. 		management are unwilling to engage.
5. To ensure the Council continues to make effective use of planning and development control powers to limit the impact of HGV traffic.	 5.1 To continue to comment on Operator Licences and work with districts and boroughs in doing so. 5.2 To recommend that necessary planning conditions are placed on development sites to minimise any lorry related impacts on the road network and local communities. 5.3 As far as is reasonably practicable, to encourage the siting of developments that will generate freight movements where there is easy access to the strategic road network. 5.4 To support the location of commercial developments next to alternative forms of transport, such as rail. 5.5 To implement delivery and servicing plans for new developments in appropriate situations and explore their use for KCC itself. 5.6 To promote the Transport for London code of practice for out-of-hours deliveries. 	 Appropriate use of the existing road network by lorries. Minimal lorry-related impacts on local residents from new development that generate freight movements. Developments generating freight located where the strategic road network is accessible. Fewer delivery and servicing activities using lorries in peak hours. 	 Planning conditions may not be conducive to commercial success. Businesses, town and shopping centre management are unwilling to engage. Costs may be prohibitive to siting development close to alternative transport or the strategic road network. Delivery and servicing plans may affect commercial success and so businesses may be unwilling to adopt them. Out-of-hours delivery may cause more disturbance in

Objective	Actions	Outcomes	Risks
	5.7 To seek to work with town and shopping centre management on their delivery and servicing arrangements to minimise lorries on the local road network during peak hours (see also action 4.13).		residential areas where the TfL code is not adhered to.
6. To encourage sustainable freight distribution.	 6.1 To support and promote alternative delivery networks. 6.2 To support the FTA's educational work around the necessity for freight as part of modern life and work with other organisations in this field (see also action 4.1). 	 Increased use of alternative delivery networks. Greater understanding of the necessity for freight amongst the general population. 	> KCC is unable to accept
	6.3 To investigate the use of workplace deliveries within KCC and conduct a trial to assess the effectiveness of this scheme.	 Evidence to support the use of workplace deliveries. 	large amounts of personal post due to increased workload and security concerns.

10.0 Glossary

Department for Transport (DfT): The Government department with responsibility for transport strategy across England and some matters in Scotland, Wales and Northern Ireland that have not been devolved.

Freight: Goods or produce when being transported by road, rail, air, water or pipeline.

Freight Transport Association (FTA): A trade association representing the transport interests of companies transporting goods by road, rail, sea and air.

Freight Quality Partnership (FQP): A partnership between the freight industry, local government, local residents, local businesses and others with an interest in freight. They exist to promote understanding of freight issues and to develop solutions.

Heavy Goods Vehicle (HGV): A general term used to refer to lorries both articulated and rigid over 7.5 tonnes maximum gross weight. The term does not apply to buses, coaches or agricultural vehicles.

Highways Agency (HA): An executive agency of the Department for Transport responsible for motorway and trunk roads in England.

Highway Authority: An organisation responsible for the roads, including the maintenance thereof and regulation of development affecting the highway network.

High Speed 1 (HS1): The first high speed rail line, officially called the Channel Tunnel Rail Link, connecting London St Pancras with the Channel Tunnel and onwards to Brussels and Paris.

High Speed 2 (HS2): The second high speed rail line connecting London to the West Midlands and in the future to Leeds, Manchester and further north.

Kent County Council (KCC): Responsible for many local services throughout Kent. KCC is the Highway Authority for all roads in Kent except the motorway and trunk roads.

LABEL: A European project to develop a truck parking certification system. The full title is *Creating a Label for (Secured) Truck Parking Areas along the Trans-European Road Network and Defining a Certification Process. Including Online Information Facility.*

Large Goods Vehicle (LGV): An alternative term for Heavy Goods Vehicle.

Local road network: All roads excluded from the strategic road network and managed by the highway authority; in Kent this is Kent County Council. This includes some "A" classed roads (sometimes called the primary network), "B" classed roads and all other local roads.

Lorry Watch: A scheme originally intended to identify the contravention of weight limits using local volunteers to record vehicles entering the restricted area. The scheme is flexible enough that it could be extended to lorry parking and other lorry issues.

Maximum gross weight (mgw): The maximum weight of a vehicle including the maximum load it can carry safely on the highway.

National Farmers' Union (NFU): An industry body representing the interests of British farmers and growers nationally and at a European level.

Off-site lorry parking: This includes parking in laybys and industrial estates (not on operator premises), i.e. areas that are not designated truckstops.

On-site lorry parking: Designated lorry parking in truckstops.

Operator Licence (O licence): Applications for Goods Vehicle Operator Licences are made to the Traffic Commissioner. These relate to sites from which HGVs operate and are based.

Operation Stack: This is the name given to the processes of parking, or "stacking," lorries along stretches of the M20 when disruption at the Port of Dover or Channel Tunnel prevents them crossing the channel.

Quick Moveable Barrier (QMB): The flexible concrete barrier that can be moved into position on the M20 during phases 1a and 1b of Operation Stack to enable contraflow running and therefore keep non-port traffic moving,

Peak hours: These are the times at which the road network is busiest due to commuter and school traffic; roughly 07:00 to 09:00 and 16:00 to 18:00.

Road haulage: The transportation of goods by road.

Road Haulage Association (RHA): The industry body representing the interests of road hauliers (i.e. those transporting goods by road) and associated businesses.

Satellite navigation (sat nav): A system whereby satellites provide time signals to enable small receiver devices to pinpoint their position (latitude, longitude and altitude), usually accurate to within 15 metres. A route is calculated based on a navigable map, which includes attributes such as speed and weight restrictions and gives roads a weighting based on these attributes. The map can either be stored on the device or remotely, in which case mobile phone reception is required.

Strategic road network: Motorway and major "A" classed roads (trunk roads) that are the responsibility of the Secretary of State for Transport and managed by the Highways Agency. These roads are recommended routes for road haulage.

Transport for London (TfL): The organisation responsible for the majority of London's transport services and delivering the Mayor's transport strategy.

Trunk road: A major road, often a dual carriageway at motorway that is maintained by the Highways Agency. With motorways they make up the strategic road network that is recommended for long-distance travel and freight; see "strategic road network."

11.0 Reference list

AECOM, 2012. *Lorry parking study – demand analysis.* [online]. Department for Transport. Available at: http://www.dft.gov.uk/publications/lorry-parking-study

BBC Inside Out, 2003. Farming of the future. BBC [online] (2 June 2003). Available at:

http://www.bbc.co.uk/insideout/southeast/series3/farming_future_garden_of_england_kent_sussex.shtm [accessed January 2012].

Crossrail, 2012. Logistics. [online]. Available at:

http://www.crossrail.co.uk/delivering/environment/managing-environment/logistics [accessed March 2012].

Department for Transport, 2012a. *Freight.* [online]. Available at: http://www.dft.gov.uk/topics/freight/ [accessed March 2012].

Department for Transport, 2012b. *Road goods vehicles travelling to mainland Europe: quarter 4 2011*. [online]. DfT. Available at: http://www.dft.gov.uk/statistics/releases/road-goods-vehicles-travelling-to-mainland-europe-quarter-4-2011/

Freight by water, 2011. Why use water freight? [online]. Available at: http://freightbywater.fta.co.uk/why_use_water/> [accessed November 2011].

Freight on Rail, 2011. *Useful facts and figures*. [online]. Available at: http://www.freightonrail.org.uk/FactsFigures.htm> [accessed November 2011].

Freight Transport Association, 2011(a). *The logistics report 2011*. [online]. Freight Transport Association. Available at:

http://www.fta.co.uk/export/sites/fta/_galleries/downloads/logistics_report/logistics_report_2011.pdf

Freight Transport Association, 2011(b). *Operator licensing*. [online]. Available at: http://www.fta.co.uk/policy_and_compliance/road/vehicles/olicensing.html [accessed November 2011].

Hampshire County Council, 2006. *Fleet efficiency and home delivery*. [online]. HCC. Available at: http://www.winchestermiracles.org/

High Speed 1, 2011. *Freight services*. [online]. Available at: http://highspeed1.co.uk/rail/freight-services.aspx> [accessed January 2012].

Highways Agency, 2006. *Operation Stack* – *Quickchange Moveable Barrier. Non technical summary report.* [online]. Highways Agency. Available at: http://www.highways.gov.uk/aboutus/documents/crs_446552_non_technical_summary.pdf

Institution of Mechanical Engineers, 2011. *Freight – Introduction*. [online]. Available at:

http://www.imeche.org/knowledge/themes/transport/freight/introduction [accessed November 2011].

International Road Transport Union, 2011. *The European truck parking area LABEL project*. [online]. Available at http://www.iru.org/en_label-project> [accessed December 2011].

Jacobs and Kent County Council, 2011. Review of personal injury crashes occurring on Kent (excluding Medway) roads in 2010. [online]. KCC. Available at: http://www.kent.gov.uk/roads_and_transport/road_safety/crash_and_casualty_data.aspx

Kent International Airport - Manston, 2009. *Masterplan*. [online]. Kent International Airport - Manston, Available at: http://www.manstonairport.com/userfiles/files/planning/KIA%20Master%20Plan%20LR.pdf

Kent County Council, 2011a. *Transport Plan for Kent 2011 – 2016*. [online]. KCC. Available at: https://shareweb.kent.gov.uk/Documents/roads-and-transport/road-policies/local-transport-plan-3/final-ltp3.pdf

Kent County Council, 2011b. *Minerals Topic Report 7: Kent and Medway Imports Study*. KCC.

Kent County Council, 2012. *Welcome to Kent*. [online]. Available at: http://www.kentroadsafety.info/touristscommercialdrivers/

Kent Online, 2011. *Second terminal planned for Dover port*. Kent Online [online] (29 November 2011). Available at: http://www.kentonline.co.uk/kentonline/news/2011/november/29/second_terminal_planned.aspx> [accessed January 2012].

Network Rail, 201a. *Value and importance of rail freight.* [online]. Network Rail. Available at: < http://www.networkrail.co.uk/9083 ValueofFreight.pdf>

Network Rail, 2010b. *Moving ahead: Planning tomorrow's railways (Route A, Kent)*. [online]. Network Rail. Available at: http://www.networkrail.co.uk/aspx/4451.aspx

Network Rail, 2011. *Rail freight resource centre*. [online]. Available at: http://www.networkrail.co.uk/aspx/10455.aspx [accessed November 2011].

Port of Calais, 2012. *Projects: Calais Port 2015, twin challenge, twice won.* [online] Available at: < http://www.calais-port.fr/en/2011/07/12/calais-port-2015-twin-challenge-twice-won/>

Transport for London, 2011. *Transport for London's code of practice for quiet out-of-hours deliveries*. [online]. TfL. Available at: http://www.tfl.gov.uk/gettingaround/london2012/21958.aspx>