IP Reference: 20010290

[redacted]

National Infrastructure Planning
Temple Quay House
2 The Square
Bristol
BS1 6PN

18th October 2018

Dear Sir or Madam,

TR050006 Northampton Gateway Rail Freight Interchange – Written Representation

I write as an Interested Party in regard of the above application and enclose a Written Representation for your consideration.

The Written Representation is accompanied by a Summary and two files containing relevant data used in the preparation of the Written Representation.

Yours faithfully,

[redacted]

Dr Andrew Gough

Objection to Northampton Gateway Rail Freight Interchange TR050006

Andrew Gough

Introduction and Document Structure

Proposals to develop intermodal facilities on the Northampton Loop are not new. The Northampton Gateway site, then known as Highgate, was assessed during the application to build DIRFT III in 2013.

Highgate was dismissed as a suitable alternative to DIRFT III as follows:

"*The Highgate site does not appear to provide any sort of alternative to DIRFT III but in contrast, more of a sub-regional facility. Its location to the south of Northampton may well enable it to provide a convenient access to the rail network for businesses in this conurbation, and it may well have the ability to part-service the need derived from the south*[1]".

How then have we arrived at a situation where not one, but two developers have brought forward schemes that seek to build a combined total of 13 million square feet of warehousing in a location that was deemed unsuitable for 8 million square feet in 2013? What has changed at a strategic level to change the location preference for a site further to the North? What has changed at a market level to provide the confidence that such a large amount of rail-connected warehousing can be let?

In developing the argument for this site, in this configuration, at this time, Northampton Gateway needs to establish both a commercial and geographical case, as follows:

Case	***Element***	***Study***
NEED	A need for warehousing on this scale	Annex A
	A need for rail-connected warehousing	
	A need for this development at this time	
ALTERNATIVES	The strategic context of the site in relation to SRFI policy	Annex B
	The superiority of the chosen site over all practical alternative locations	Annex C
	The superiority of the concept of operations over all practical alternative approaches	

This mix of deliverables can be addressed through three high-level studies, covering the Need Case, the Strategic Context and the Operational Superiority of the proposed site. These three studies were partially attempted by Roxhill and their consultants at various stages during public consultation. However, the developer's studies fall short in a number of ways, including contextual omissions and errors in calculation, that should be put right before the application is assessed.

The aim of this document is twofold: (a) to place an independent version of each study into the public domain and (b) to provide a commentary on the collective interpretation of their results in the context of the proposed Northampton Gateway development.

The full studies may be found in the annexes to this report, as shown in the table above. The studies are designed to provide a national, regional and/or sub-regional context to the developer's proposals. The studies will be revisited, each with an appropriate commentary, in respect of the proposals put forward by Rail Central and Hinckley National Rail Freight Interchange, as those plans come forward.

[1] Document 7.5 *Assessment of Sites for Rail Freight Development Potential*. Nathaniel Lichfield and Partners. Available from: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR050001/TR050001-000775-Doc%207.5%20Assessment%20of%20Sites%20for%20Rail%20Freight%20Dev%20Potential.pdf

Need

A need for warehousing on this scale

The useful life of a warehouse is affected by technical obsolescence as well as by deterioration of the building fabric. The useful life of a modern facility is often taken to be 30 years, though shorter (or longer) periods can apply.

The average amount of warehousing needed annually to replace existing stock can be estimated by dividing the amount of current stock by the useful life. In addition to such replacement demand, further space will be required to accommodate growth in logistics activity.

The Valuations Office Agency (VOA) maintains a database of warehouses by rateable value. This publicly available resource provides a complete picture of all Class B8 space in England and Wales.

The VOA database has been successfully used to establish overall demand for strategic distribution space in Leicestershire[2]. The methodology used is robust, independent and in the public domain, yet has not been used by Roxhill to justify Northampton Gateway.

Annex A to this chapter contains a new analysis of VOA data[3] which establishes the strategic demand for warehousing, within a radius of approximately 50 km of the proposed South Northamptonshire SRFI sites. This analysis compares the Rail Central and Northampton Gateway proposals against a background of other planned schemes that are being brought forward in the study area, with a view to establishing whether one, other or both proposals can be accommodated within an overall strategic demand.

The selected study area has the same radius as the wider catchment area explored in the market study that accompanies the developer's application.

VOA lists the overall warehouse footprint of B8 buildings[4] in the study area as 6.9m square metres, of which 4.7m square metres are buildings over 25,000m^2. The provision of large facilities is a particular feature of Northampton Gateway.

The annual replacement estimate (based only on obsolescence and a 30 year life) is therefore in the order of 230,000m^2 per annum for all qualifying buildings, or 156,000m^2 per annum for buildings over 25,000m^2.

Growth in UK logistics activity is strongly correlated with economic growth – the elasticity of tonne km against GDP is essentially one. At a national strategic level, before considerations of commodity type and stock density, we may estimate the incremental demand for warehousing due to growth from agreed GDP forecasts from the Office of Budget Responsibility.

Two scenarios for growth have been modelled, one optimistic and one which maintains current performance. The additional warehouse space implied by the two scenarios is then added to the replacement demand to provide an overall demand figure.

The implied demand for buildings over 25,000m^2 in the study area under the optimistic scenario (2.2% growth) is 209,000m^2 p.a. and 188,000m^2 p.a. under the status quo (1.3% growth).

These estimates further imply that between 17% and 25% of the build is required to house new growth. The remainder (75% - 83%) is to replace buildings past their useable life.

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[2] MDS Transmodal (2014), *Leicester and Leicestershire Strategic Distribution Sector Study*, Part B

[3] Conducted in April 2018.

[4] Minimum GFA for inclusion is 3500m^2.

These findings have profound implications for job creation. If the bulk of the demand for warehouses is driven by replacement, *the jobs within them will most probably already exist*. It is highly unusual for an entirely new warehousing operation to require a building of the scale of those planned by Northampton Gateway. Relocations and expansions are more common scenarios.

To a first degree of approximation, we can expect that 80% of the jobs created by Northampton Gateway will be taken by a workforce relocating from elsewhere.

Competition with Rail Central and other schemes

Inspection of local authority planning registers identified a substantial number of known warehousing schemes within the same study area as the VOA search.

A total of 2.7m square metres of competing space has been identified, of which ca. 2.5m square metres is expected to comprise buildings of over 25,000m^2. The predominance of large footprint buildings in other developers' schemes provides confirmation of the general market view that larger facilities are desired.

Several of the schemes, notably Rail Central, DIRFT III and East Midlands Intermodal Park, offer rail access. Northampton Gateway will compete for tenants with such schemes, both in terms of rail access and in terms of providing the modern, large footprint warehouses.

The entry of **both** Northampton Gateway and Rail Central into the market would, *in planning terms*, result in a significant oversupply of *proposed* warehousing space against anticipated demand.

Whilst not all of the competing schemes will be consented, the overall level of developer activity is indicative of the challenge that Northampton Gateway will face in attracting tenants in the face of strong competition.

The promoters of each competing scheme have all adopted a bullish position regarding demand, insisting that their scheme is necessary in addition to all of the others. This position is simply not tenable, as the following illustration explains:

Under the high growth scenario, the current master plan for Northampton Gateway represents approximately 33% of the anticipated demand for large warehouses up to the year 2026.

However, for every square metre offered by Northampton Gateway, four competing square metres will potentially be in the same market at the same time[5].

If Rail Central were not to be built, the first point at which Northampton Gateway is needed against demand *for space alone* is ca. 2026; in all years before that Northampton Gateway will face competition from other, potentially more established, providers.

If Rail Central were to be consented before Northampton Gateway, then the first point at which Northampton Gateway would be required would be ca. 2031.

This result provides strong evidence to counter that the claim that Northampton Gateway and Rail Central are both needed now. That argument is clearly not supported by this analysis.

Only one of the three schemes proposed for the East Midlands – Northampton Gateway, Rail Central or Hinckley NRFI - can reasonably claim to be needed in the medium term, in addition to DIRFT III.

[5] Assuming 80% delivery of proposed schemes

Limitations of the Socio-Economic Assessment

I note that the Socio-Economic Assessment that was included in the consultation derives several of its estimates from population forecasts published by the Office of National Statistics (ONS).

The calculations would appear to have been based on gross population projections, and not on estimates of the working age population. This is likely to have led to a number of errors, not only in terms of the estimation of socio-economic benefits but also in the inputs to other workstreams that will have taken note of the results of the socio-economic aspects.

I will illustrate my point by way of a worked example:

Section 3.4.6 states that "the forecast growth of the population in South Northamptonshire between 2011 and 2029 is an additional 15,890 people".

Section 3.4.9 further states that "people of working age (16-64) currently represent 65% of the population".

However, the population of working age and retirement age people in the UK are growing at very different rates. In 2029, the working age population in South Northamptonshire is expected to be 55,700, only some 57% of the total. The increase in working age population in South Northamptonshire between 2011 and 2029 is, in fact, *less than two thousand*.

Taken across the study district, the effect of using gross population instead of working age population is to over-estimate the benefit to South Northamptonshire.

Furthermore, the study does not appear to be adapted to the very high percentage of logistics jobs, and vacancies, in the study region. At approximately 12%, the percentage of logistics employment is already twice the national average. The level of vacancies remains stubbornly high, especially in regard to HGV drivers. Unemployment is low, but wages in the sector are not rising because margins are under pressure.

It is therefore not likely that jobs can be added in a manner that increases logistics employment as a percentage of total employment beyond the observed maximum (12%) that Northampton represents. If it were possible, it would have been done.

At this maximum, for every person that works in logistics, seven do not. This preference can be expected to be repeated in Northampton's SUEs, hence it is incorrect to assume that the increased population of Northampton is can be seen in its entirety as a pool of potential employees. Only a maximum of one in eight should be so considered, as now.

One effect of these two factors is to increase the percentage of commuters from areas with a lower reliance on logistics. The proportion of employees originating in Milton Keynes is probably under-estimated, with consequences for workstreams such as junction modelling, car parking provision, cycling and public transport.

A further effect will be to question the very low level of leakage of economic benefits to other areas outside of the study, which is likely to be far higher than currently predicted.

The overall impact of these deficiencies is to highlight non-compliance with NPSNN requirements on availability of labour (Sections 2.52, 4.87).

A need for rail-connected warehousing

Catering for growth in domestic intermodal traffic has been stated as a significant factor in bringing this scheme forward.

I do not contest the desirability of transferring road freight onto rail, but do have significant concerns over the forecasting mechanism that has been employed in quantifying the demand for new rail-connected facilities.

For many years, MDS Transmodal (MDST) has provided forecasts of rail freight volumes to Network Rail and others through the use of its proprietary Great Britain Freight Model (GBFM). However, it is important to recognise that (a) provision of rail-connected warehousing is an input to the GBFM, not an output from it and (b) that the forecasts are unconstrained, i.e. that they assume no restriction on train paths or availability of suitable sites.

MDST has made no secret of these limitations, which are also acknowledged by independent audit of the model.

The size of each site identified in the freight forecasts, and their geographical distribution, are therefore assumptions made on a "build it and they will come" basis. Many of the identified sites, including "South Northamptonshire", have been allocated arbitrary capacities; indeed several have the same capacity, indicating a lack of refinement in the process (please see Table 1).

The published forecasts assume (but do not justify, for the reasons given above) that 179,000 m^2 of rail-connected warehousing will be brought forward in South Northamptonshire by 2023/4, in addition to the expansion of DIRFT. This figure is projected to rise to 322,000 m^2 by 2033/4.

Northampton Gateway proposes to bring forward 468,000m^2. I find it difficult, therefore, to understand the scale of the proposed development, which represents a 145% over-provision of rail-served warehousing.

MDST's forecasts provide a similarly unconstrained view of rail freight capacity, identifying the need for 196 freight movements on the Northampton Loop per day by 2043/4, approximately three times the current level of traffic.

In contrast, the 2018 Freight and National Passenger Operators Route Strategic Plan issued by Network Rail for consultation earlier this year envisages upgrades to the Northampton loop that will provide only one extra freight train per hour, at a cost of £450m. The *constrained* capacity, therefore, is very much less than the unconstrained forecast would suggest, due in the most part to financial considerations.

Moreover, there is no financial commitment to fund these improvements which would, in any case, not materialise before Control Period 7 (2024 - 2029)[6] at the earliest.

It is imperative, therefore, that the Planning Inspectorate satisfies itself that the necessary rail capacity will be in place to meet the needs of potential tenants, not just during initial occupation, but right up to and including full occupation of the site.

As proposed, Northampton Gateway would compete with DIRFT and Rail Central (as well as expanding rail passenger services) for the same train paths, severely limiting the prospect for modal shift. *SRFI development should follow investment in rail freight capacity, not precede it*.

[6] https://cdn.networkrail.co.uk/wp-content/uploads/2018/02/FNPO-Route-Strategic-Plan.pdf , Page 156.

Rail connected warehousing sites assumed in rail freight forecasts (Oct 2012)		Thousand square metres				% NDC	Status of Planning
Site	County	Current	2023/4	2033/4	2043/4		
DIRFT	Northants	500	828	1,193	1,601	60%	Consent sought for extension
London Gateway	Essex	-	403	726	1,029	80%	Being constructed
Rossington	S Yorks	-	112	355	572	50%	Secured
Burnaston X / Etwall	Derbyshire	-	149	371	572	50%	Yet to be applied for
Corby	Northants	-	269	422	572	60%	Part secured, part sought
Four Ashes / F'stone	Staffordshire	-	119	297	457	60%	Yet to be applied for
Bicester	Oxfordshire	-	119	297	457	70%	Speculative
Milton Keynes	Bucks	-	179	322	457	70%	Yet to be applied for
South Northampton	Northants	-	179	322	457	70%	Yet to be applied for
Kegworth	Leics	-	179	322	457	70%	Consent being sought
Sevington	Kent	-	179	322	457	80%	Yet to be applied for
Hams Hall	West Mids	300	390	400	457	60%	Secured
Avonmouth	Avon	-	179	322	457	20%	Speculative
Wakefield	W Yorks	350	350	350	400	20%	Exists
Radlett	Herts	-	148	266	377	10%	Awaiting Sec of State
Port Salford	Gt Manchester	-	134	242	343	0%	Secured
Immingham	Humberside	-	134	242	343	80%	Consent being sought
Mossend	Strathclyde	100	160	248	343	0%	Secured
Ditton	Cheshire	-	269	300	343	20%	Part secured, part sought
Tees	Cleveland	120	147	187	240	80%	Secured
Seaforth	Merseyside	-	60	148	229	50%	Yet to be applied for
Gartcosh	Strathclyde	-	60	148	229	0%	Consent being sought
Castle Donington	Leics	-	60	148	229	70%	Being constructed
Luton	Bedfordshire	-	60	148	229	70%	Consent being sought
Barking	Essex	-	90	161	229	0%	Yet to be applied for
Stoke	Staffordshire	-	90	161	229	20%	Speculative
Birch Coppice	Warwickshire	60	114	169	229	60%	Secured
Dartford (Howbury P)	Kent	-	179	200	229	0%	Secured
SIFE	Berkshire	-	170	190	217	10%	Consent being sought
Grangemouth	Central	50	80	124	172	0%	Secured
Coventry	West Mids	150	150	150	172	60%	Exists
Sheffield	S Yorks	-	30	74	114	20%	Secured
Swindon	Wiltshire	-	30	74	114	30%	Secured
Port Warrington	Cheshire	-	22	56	86	0%	Consent being sought
Wentloog	S Glamorgan	-	18	38	57	0%	Secured
Doncaster	S Yorks	-	18	38	57	30%	Secured
Telford	Shropshire	-	18	32	46	20%	Secured
Exeter	Devon	-	9	16	23	0%	Secured
Selby	W Yorks	15	15	15	17	20%	Exists

Table 1: Rail Connected Warehousing Sites Assumed in Network Rail Forecasts (MDS Transmodal, 2013)

A need for this development at this time

Many of the points made in the preceding sections relate to the timeliness of this scheme.

I believe that there are many pointers to the prematurity of this scheme, *inter alia*

- The absence of seven day or even six day working on the railway
- The likely oversupply of high-quality, rail-connected space implied by already consented developments in DIRFT and East Midlands Gateway and the proposed developments in Hinckley, Rail Central and East Midlands Intermodal Park
- The uncertainty over investment in rail freight capacity on the Northampton Loop (cf. Felixstowe-Nuneaton and East-West Rail, to be discussed later in this document)
- BREXIT and its impact on labour availability, etc.

During the consultation events, Roxhill's representatives spoke of a so-called "soft start", whereby the intermodal terminal would receive only a few trains per day at the outset. The situation would be substantially altered by the expected release of train paths post-HS2, we were assured.

Also during consultation, the developer was extremely reluctant to confirm the GRIP stage that their proposal has reached. Whilst the Application contains a Statement of Common Ground with Highways England, I have been unable to locate a similar Statement of Common Ground with Network Rail.

I note that both DIRFT III and EMG included Statements of Common Ground with Network Rail in their applications. I understand from Network Rail that Northampton Gateway is working towards GRIP 2 which suggests that their design is well short of the stability expected for a DCO application.

I cannot accept that a scheme of this magnitude could be consented in the mere expectation of future rail capacity, when no guarantee can be given that the capacity released will not be allocated to other passenger operators.

There are too many factors outside the developers control, particularly in regard to the deliverability of the scheme *as an SRFI* in the current economic climate. Whilst I have no doubt that there will be tenants for road-based warehousing close to Northampton, that is not the scheme under review.

Indeed, if it were, then the scheme would have been decided by the relevant local authorities, rather than via the NSIPs process.

I conclude that the current proposals reflect an unusual appetite to accept risk. Why this should be the case is a question for the developers, but it has been clear from the outset that Northampton Gateway has rushed this application to get ahead of its competitor, Rail Central.

All of us involved in the consultation dialogue noticed an acceleration in Northampton Gateway's design activity in Q1 of 2018. Unfortunately, this also coincided with an absence of dialogue between the two competing developers.

PINS is in an unenviable position in that two competing SRFI schemes are proposed in very close proximity at the same time. The schemes even overlap in key areas, notably at J15A on the M1.

Conducting a thorough assessment of each application is not possible in isolation; there must be a consideration of cumulative impacts and of joint mitigation.

To neither developer's credit, the cumulative impacts implied by consenting both proposals, particularly in terms of traffic, remain unpublished.

Alternatives

Alternatives – Strategic Context

A developer that proposes a *Strategic* Rail Freight Interchange should be able to place their case for the choice of location of the proposed development in a national strategic context. We have not seen such an argument from Northampton Gateway.

The original strategic work that defined the ambition for a network of SRFIs was carried out by Exel Logistics in 1999. No revision has ever been made.

Over the intervening years, extensive changes have taken place in the UK economy, particularly with regard to the geographical distribution of wealth within England.

Data obtained from the Office of National Statistics shows that a marked shift in the spread of Gross Disposable Household Income (GDHI) took place between 2003 and 2013 (see Figures 1 and 2).

These changes are chiefly due to the impact of historically low interest rates in reducing mortgage payments in areas with traditionally expensive housing, such as the South East of England. Areas of significant disposable income have developed in North Yorkshire and parts of Scotland.

Put simply, less interest leads to more disposable income and more "draw" for goods to be warehoused close to the wealthier areas. The effect is compounded by population growth and internal migration, e.g. for work or to take up new housing.

The effect of increased disposable income as a whole results in a need for larger network nodes, or for more of them, or for both. However, changes in the geographic distribution of GDHI will alter the location of each of the network nodes.

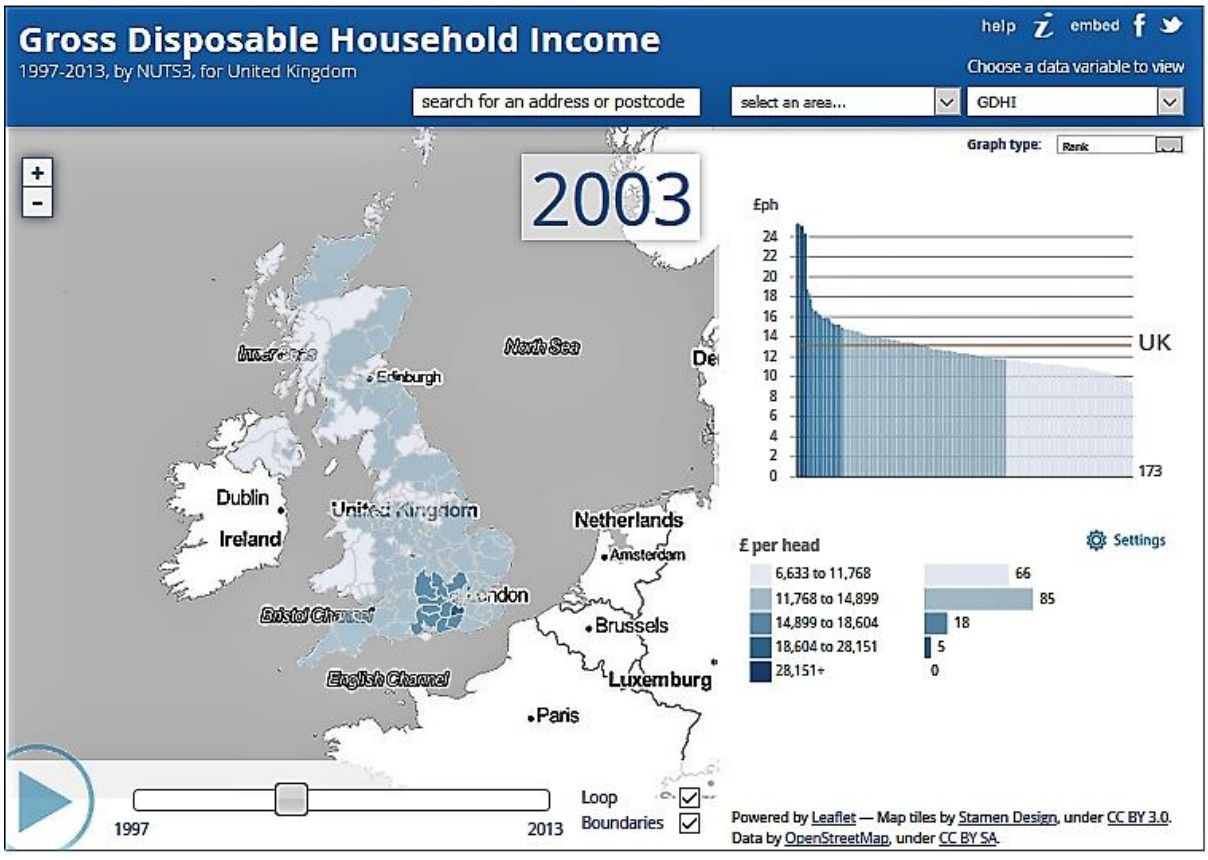

Figure 1: Distribution of Gross Disposable Household Income, 2003 (ONS)

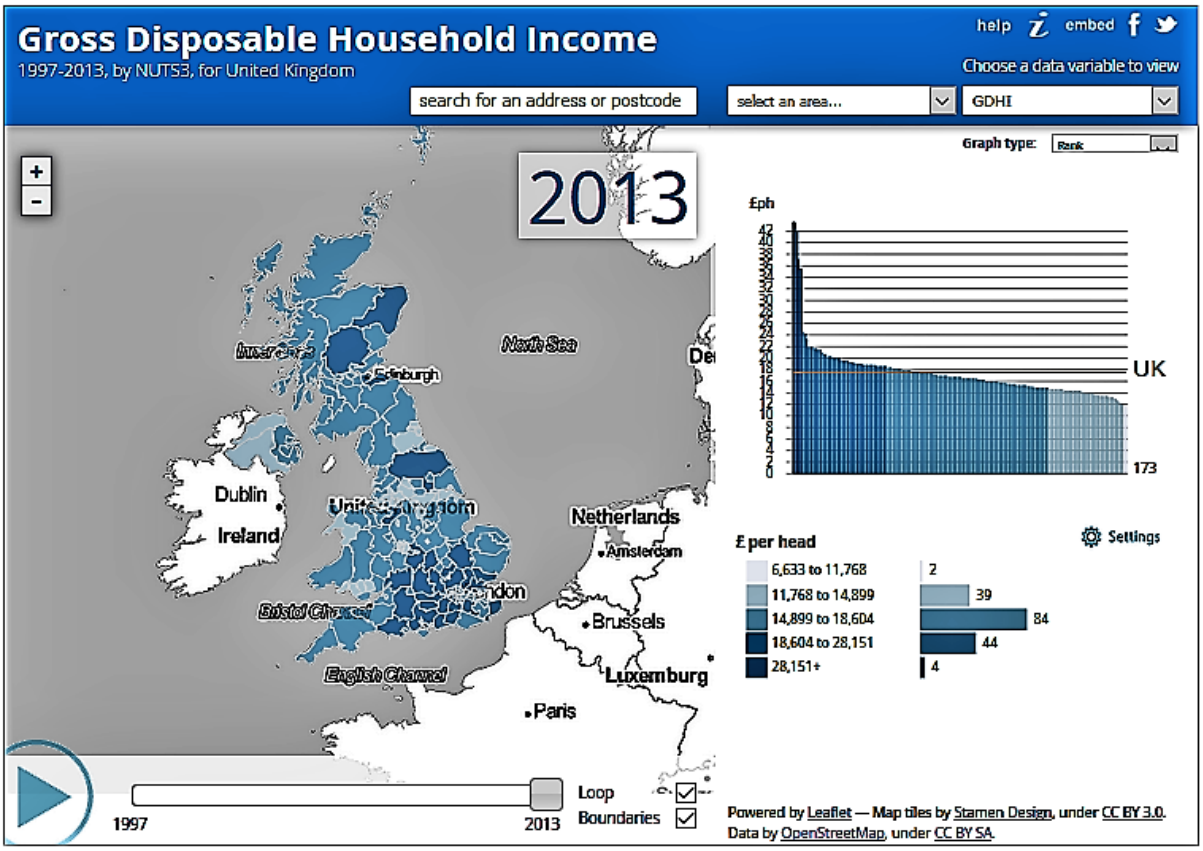

Figure 2: Distribution of Gross Domestic Household Income, 2013 (ONS)

The differences between the 2003 and 2013 scenarios suggest that the observed change in distribution of disposable income would have a substantial effect on the optimum location of a network of UK distribution assets.

An exploratory study was therefore undertaken, using commercially-available software (Open Door Logistics Studio) to model the optimum SRFI network.

The Department for Transport routinely publishes data on UK road freight activity at regional level (Table RFS0140). With the assistance of the Department for Transport statistical unit, a set of data was obtained that identified HGV activity in a greater level of geographic detail, namely at the level of the NUTS2 statistical regions.

Operating on an unconstrained basis, purely attempting accommodate current road freight activity and without reference to any of the current SRFI locations, the model returned a linear network running approximately NW to SE, from Liverpool to London.

Such a model offers very poor service to the North East, South and South West of England.

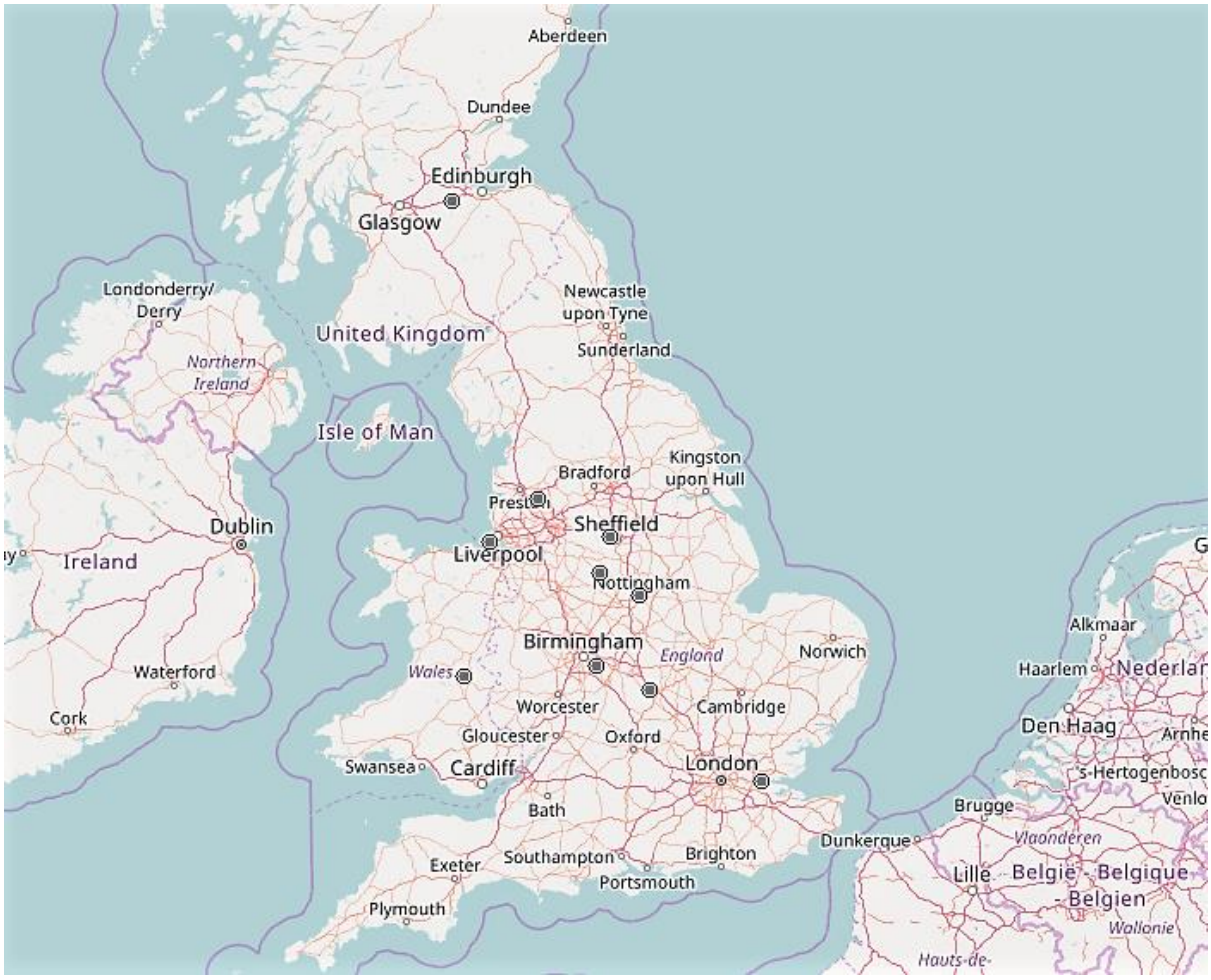

Figure 3: Capacitated Clustering Model, 2015 data, unconstrained, Tonne-km basis (Open Door/DfT)

Between 2006 and 2015, activity between the logistics heartland of Leicestershire/ Northamptonshire and Felixstowe fell by 35%, though traffic with the newly-opened London Gateway port rose by 65%. Activity to and from the main container port in Felixstowe and destinations in Yorkshire and the West Midlands rose by approximately 115%.

The risk of using historic operating models, perpetuated by long leases on property, is that a sub-optimal network will be designed that embeds unnecessary constraints by "copying" a road-based solution.

An alternative approach, more common in retail than in logistics, would model the network based on proximity to major centres of disposable income (GDHI), rather than to known supply routes.

GDHI modelling begins from a premise that the goods being transported are ultimately to be delivered to consumers who will pay for them from their disposable income. Whilst this assumption may not be applicable to all types of cargo, it is readily applicable to domestic intermodal trade from the deep-water ports, which chiefly comprises imported consumer goods, clothing and textiles, food and beverages.

The rise of online retailing has resulted in an increasing volume of goods being delivered directly to the consumer, rather than to a traditional retail outlet. Online fulfillment was negligible in 2001, when the "Radical" study was undertaken. By 2020 21.5% of UK retail transactions are forecast to be carried out online.

The unconstrained output of such a GDHI model is shown in Figure 4.

Figure 4: Capacitated Clustering Model, 2015 data, unconstrained, GDHI basis (Open Door/DfT)

The logic behind the GDHI model is clear. SRFIs serving major commercial centres such as London, Birmingham, the M62 and M8 corridors can be readily identified. However, such a model would disregard the current SRFI network, with the possible exception of Hams Hall and Mossend.

In seeking an optimum network design, the stated aims of the National Policy Statement for National Networks were adopted as design parameters. SRFIs should be:

- located near the business markets they will serve – major urban centres, or groups of centres,
- linked to key supply chain routes,
- maximising rail trunk haul, whilst
- minimising some elements of the secondary distribution leg by road,
- reducing the cost to users of moving freight by rail, and
- reducing trip mileage of freight movements on both the national and local freight networks

A methodical search for an optimum model was completed in March 2018. The output of the process is shown in Figure 5. Current and consented SRFIs are shown in red, whilst proposed SRFIs are shown in black.

Figure 5: Optimum SRFI Network, 2015 data, combined Tonne-km and GDHI basis, (Open Door/DfT)

The optimum model clearly prioritises SRFI development ***away from the East Midlands***, whilst confirming the unmet demand for additional SRFI capacity to serve London. Indeed, the stalled proposals to provide SRFIs at Parkside (St. Helens), Slough and at Howbury Park are potentially reinvigorated by these results.

Limitations and Future Work

Source data at the required level of detail (NUTS2) is not generally available and I have been obliged to work with the single set of data provided by DfT, covering road freight activity in 2015.

The debate over the relative merit of using tonne-km, GDHI data or a combination of the two is not settled. There are, however, similarities in the output of the rival models that should be noted:

- The Centre of Gravity of all of the models lies North of the A14 corridor
- Neither model proposes an SRFI between DIRFT and Radlett
- London requires more capacity than will be achievable from Radlett and Howbury Park alone, and
- New Deep Water Container Terminals in Liverpool and Bristol will radically alter the inland flows of containers on the UK road and rail networks

A fuller account of the strategic modelling process may be found in Annex B.

Alternative Approaches – Port Centric Logistics

I do not contend that these relatively simple models are a match for those employed by retailers and major logistics providers. However, I note that the optimum model is entirely consistent with the many arguments put forward in favour of port-centric logistics (PCL).

The overwhelming view expressed in the academic literature is that port-centric solutions generally reduce costs, stimulate employment and economic activity, and are more sustainable, but at the expense of some flexibility and supply chain velocity.

Proponents of PCL point to the inefficiency of current distribution models that see many goods transported from Felixstowe, Southampton or the Channel Tunnel to the "Golden Triangle" in the Midlands, only to be returned to the South and South East of England where they were landed.

Current centralised distribution practices are based on a trade-off between excess distribution mileage and increased availability of stock.

Consider a container of consumer goods landed in Southampton, then shipped to the Midlands for destuffing in a National Distribution Centre there. The goods in that container are most likely to be sold in London or the South East and have potentially been transported to the Midlands unnecessarily. The fact that they find themselves in the Midlands is due to the probability that they might be sold elsewhere – the retailer is hedging its bets, prioritising the service to its outlets over its environmental impact.

Some estimates put the amount of excess mileage at around 20%[7].

Such inefficiencies will not stand the test of time. Port-centric solutions should therefore be seen, from a national perspective, as alternative sites for a national significant infrastructure asset.

The Port of Liverpool has recently invested £400m in a new container terminal which, it is argued, is much better able to serve the North of England and Scotland than can DIRFT and other facilities in the Golden Triangle (see Figure 6).

The counter-argument to port-centric logistics contends that there is simply not enough land available within the immediate vicinity of the UK's deep-water ports to build sufficient warehousing to meet demand. The rail connectivity of the port to its hinterland then becomes a crucial factor, since goods arriving at the port must be rapidly relocated to areas where land is available.

Inland ports (sometimes referred to as dry ports) are a feature of many national networks in many countries. Venlo in the Netherlands, Duisberg in Germany and Fallköping in Sweden are good examples of the potential for inland locations to facilitate growth in port traffic through the so-called "extended gate" concept. The largest SRFIs are able to fulfil this function.

We have DIRFT already (soon to be expanded), Hinckley (M69 J2) is proposed as an inland partner for Felixstowe, and Ridgmont (M1 J13) is a logical exploitation of the investment in East-West Rail. The three of them would place the extended Golden Triangle in range of a hybrid-powered HGV.

[7] McKinnon, A.C., 2003. Logistics and the environment. *In*: D.A. Henscher and K.J. Button, eds. *Handbook of transport and the environment*. Oxford, UK: Elsevier Ltd.

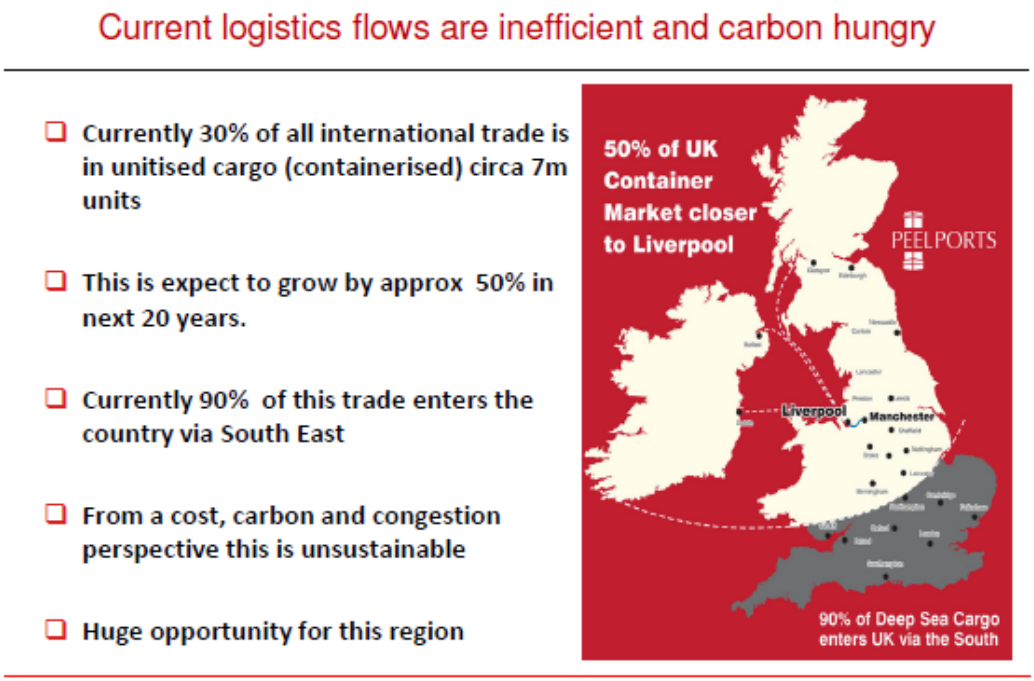

Figure 6: Benefits Claimed for Liverpool as a Port-Centric Solution (Peel Ports, 2012)

The inferior connectivity of Northampton Gateway to the major ports places the site at a significant disadvantage, especially to Hinckley.

Hinckley's connectivity represents new capacity in terms of routing to Felixstowe via Ipswich, whereas Northampton Gateway offers no additional connectivity over and above DIRFT's convoluted route to Felixstowe via the North London Line (and indeed will compete for the same trains).

Alternative Locations and the Assessment of Alternative Sites

Northampton Gateway's application does not include a separate Assessment of Alternative Sites. Discussion of the alternatives is limited to a very few pages in Chapter 2 of the Environmental Statement.

Effectively, Roxhill offers a simple choice – Rail Central or Northampton Gateway.

The Town and Country Planning Act 2011 Schedule 4 requires "*An outline of the main alternatives studied by the applicant and an indication of the main reasons for the choice made, taking into account the environmental effects*."

Similar legislation is contained within the Infrastructure Planning Act (2009), and within European Union legislation.

Listing just one alternative site does not properly comply with this legislation, nor does an almost non-existent evaluation of Rail Central comply with this legislation.

This is markedly different from the approach taken by the same developer, in support of the consented scheme at East Midlands Gateway. An independent report, prepared by AECOM on behalf of East Midlands Development Agency in May 2010, provided strong support for the EMG site and was included in the application documents[8].

[8] AECOM, *Strategic Distribution Site Assessment for the Three Cities Sub-Area of the East Midlands*, May 2010

All recent proposals from other developers to construct SRFIs have included some form of critique of potential alternative sites. The methodology employed can usually be traced back to the original work undertaken by FPD Savills on behalf of the promoters of the Howbury Park Scheme in 2004[9].

The 2004 report referenced the then Strategic Rail Authority guidance on RFI development, including the requirement that the site should possess the "ability to contribute to the national network by filling gaps in provision". When resubmitted in 2012 the assessment followed NPSNN guidance.

NPSNN justifies SRFI development on the basis that "development of additional capacity at Felixstowe North Terminal and the construction of London Gateway will lead to a significant increase in logistic operations".

Whilst this statement is quoted in the 2012 report, it did not lead to the inclusion of connectivity with the Haven and Gateway ports as a factor in alternative site assessment. Clearly, it should be.

I have yet to come across a developer's assessment of alternative sites that does not conclude that their proposed site is the best available. I note also that any site that presents a genuine alternative is routinely declared not to have reduced the need for the proposed development.

The language used is varied: a site may be declared "complementary" (e.g. Barking Ripple Road, in competition with Howbury Park), "needed as well as [this site]" (e.g. Hinckley, as described by Rail Central), or "able to work with [this site] (e.g. Northampton Gateway (then known as Highgate), as described by DIRFT III).

In each quoted case above, the demand case was not modified to include consideration of the "complementary", "needed" or collaborative site. Such selectivity is unacceptable – two sites can only co-exist if there is sufficient demand for them both.

I consider this clear evidence that the outcome of a developer's Assessment of Alternative Sites has the potential to be swayed by commercial considerations. The decision taken by Roxhill to reduce the discussion of alternatives to a simple choice between two adjacent sites is an extreme example of this.

Independent Assessments of Alternative Sites

An independent methodology is required if any suggestion of bias is to be mitigated, one that links with the strategic objectives of the NPSNN.

In the East Midlands, the most relevant study is that conducted by AECOM to identify the appropriate SRFIs in the Three Cities area (Nottingham, Derby and Leicester). This study was used by Roxhill in support of their East Midlands Gateway development, but not used for Northampton Gateway.

The methodology used by AECOM is more detailed than that employed by the majority of developers and their consultants, which tend to follow the headings established by Nathaniel Lichfield and Partners (Table 2).

AECOM places significant weight on the volume of road freight arriving in the region from deep-water ports, on warehouse configuration potential, and on a package of socio-economic factors such as deprivation, commuting and public transport availability.

[9] FPD Savills, *Application for RFI at land at Erith, Bexley Greater London Area – Rail Freight Interchange Alternative Site Assessment*, June 2004.

Sites that have greater potential for socio-economic benefit rank more modestly under the NLP methodology than the AECOM protocol, if all other factors are equal.

Sites that are adjacent to congested motorways, or require extensive mitigation to meet planning policy objectives, are unlikely to receive favourable rankings under the AECOM methodology.

In the absence of a strategic vision of what a "national network across the regions" looks like, sites that are not yet furnished with sufficient freight capacity (such as Ridgmont) will not progress beyond the first stages of alternative site assessment. This can be mitigated by undertaking the assessment at multiple time points, e.g. the current situation and post-investment (e.g. in HS2 or East-West Rail as appropriate).

	Nathaniel Lichfield (Howbury Park / DIRFT)		AECOM	
	Primary Factor	Component	Primary Factor	Component
1	Site Area	Minimum 60ha	Rail Access	Multiple Routing Access
2	Rail Infrastructure	Within 2km of railway Cleared to W8 or better	Road Access	SHN Link Stress Junction Performance
3	Road Infrastructure	Access to SHN Sufficient capacity for HGV movements	Physical Site Description	Site Area Topography W'house Configuration Potential
4	Relationship to Other Land Uses	Loss of residential amenity	Site Deliverability	Ownership / Promotion Land Allocation Flooding / Contamination
5	Policy Restraints	Planning policy	Contribution to Regional Growth	Job Creation Deprivation
6	Topography	Maximum gradient 1:500 for sidings	Commuting	Sustainable Commuting Public Transport
7	Ownership	Ideally uncomplicated	Demand	Proximity to Freight Flows Proximity to Population

Table 2: Criteria Considered by Developers' and Independent Assessments of Alternative Sites

Annex C contains the output of a review of the three proposed SRFI sites in the East Midlands (Hinckley, Northampton Gateway and Rail Central) using the AECOM methodology.

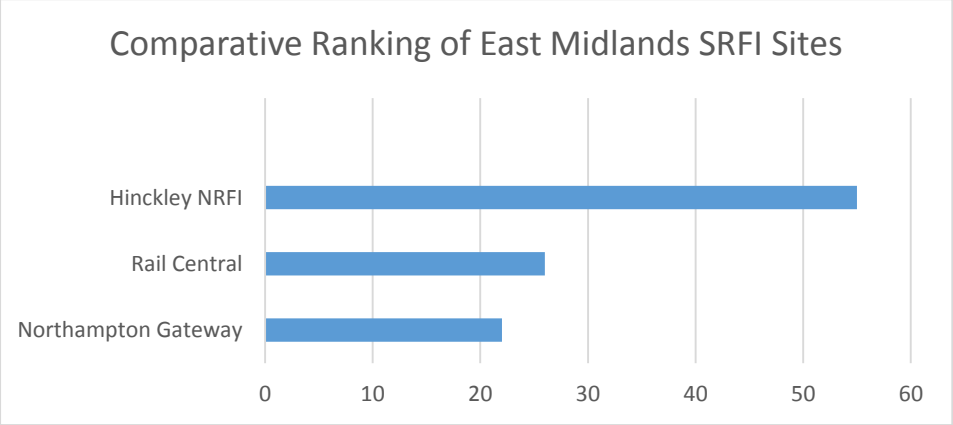

Figure 7: Ranking of proposed SRFI sites in the East Midlands using AECOM Methodology

The conclusion is provided in Figure 7 above. The high ranking for the Hinckley site is attributed to the enhanced connectivity to Felixstowe, a high potential for modal shift (being next to the A14 corridor) and a generally strong performance in respect of other factors of Primary importance (i.e. of double weight).

Northampton Gateway is the least attractive site of the three proposals, though it trails Rail Central only marginally. The difference is unlikely to be significant.

Whilst Northampton Gateway scored more highly than Rail Central in respect of factors such as Commuting, Northampton Gateway's costly earthworks reduce its ranking below that of Rail Central.

Indeed, *Northampton Gateway would not have passed the initial Go / No Go stage*, due to concerns over access to the Strategic Road Network at Junction 15 on the M1.

Hinckley NRFI is clearly the best site under consideration. *Given that we have established that only one site is required in the medium term, the evidence points to Hinckley fulfilling that role.*

Operational Superiority

The economics of rail freight do not support a simple replacement of existing road-based solutions by rail-based alternatives without a fundamental rethinking of supply chain geography.

MDS Transmodal has previously stated that "where cargo flows are from a rail connected origin e.g. deep-sea container port to a rail-connected distribution centre or between rail-served warehouses (no road hauls), rail freight generally is always cost competitive compared with road transport over any distance given adequate volume to fill a daily full-length train"[10].

It is generally agreed that where the destination is not rail connected, rail is generally competitive over distances above 250km. This distance rises to 400km in the case that neither origin nor destination is directly connected to rail.

I am not convinced that the majority of Northampton Gateway's tenants will routinely undertake the 250km+ hauls that would be economic by rail. The only routes that offer such distances are to Scotland and the Channel Tunnel, both of which are currently served by DIRFT.

Northampton Gateway lies in no-man's land, neither close enough to a port to offer port-centric solutions, nor close enough to a major conurbation to encourage modal shift.

Sir John Randall's recent Port Connectivity Study[11] provides an excellent resume of the status quo on freight corridors within the UK. Network Rail and the Ports have established a number of key interventions in the short-term, as well as longer-term priorities out to 2024 (Control Period 6).

The priorities set "to enable new flows" run to the North of Northampton Gateway, along the Felixstowe to Nuneaton route, and to the West of Northampton Gateway, along a route from the West Midlands to Southampton. Northampton Gateway would only benefit indirectly from these interventions.

The implication of these priorities is that Northampton Gateway (and Rail Central, if consented) will be effectively bypassed by investment in rail infrastructure.

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[10] MDS Transmodal (2014), *Leicester and Leicestershire Strategic Distribution Sector Study*, Interim Report Part B, Section 2.18

[11] DfT (2018), *Transport Infrastructure for our Global Future: A Study of England's Port Connectivity*

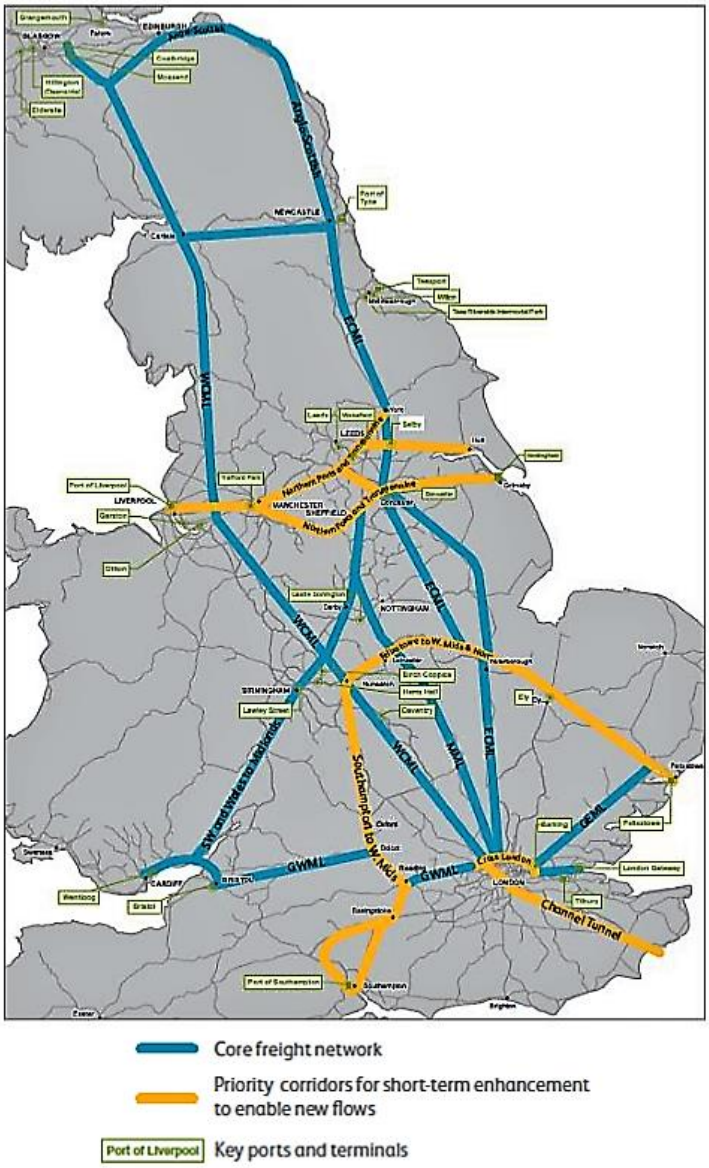

Figure 8: Network Rail's Core Freight Network Priorities for Short Term Intervention[12]

Improvements in access to the Channel Tunnel would appear to be the sole intervention in Northampton Gateway's favour. Without access to new markets, Northampton Gateway will be starved of rail freight.

The desire to replenish "little and often" would not lead to the full-length trains required to deliver economies of scale. Few businesses can absorb the additional costs of part-train shipments.

Those that do will cluster around established sites such as DIRFT, or take up port-centric solutions.

My concern is therefore that Northampton Gateway will not function as an SRFI in practice but will simply add to the warehousing stock used by road-based operators.

[12] Network Rail (2017), Freight Network Study, Long Term Planning Process, April 2017 https://cdn.networkrail.co.uk/wp-content/uploads/2017/04/Freight-Network-Study-April-2017.pdf

Summary of Findings

Northampton Gateway has not made the case for a SRFI development of national importance, in this location, at this time. The application should be rejected.

Deficiencies in the Assessment of Alternative Sites result in significant non-compliance with planning legislation. Deficiencies in the socio-economic case highlight non-alignment with NPSNN policies on availability of labour. Non-alignment with the NPSNN policy of sustainable design, particularly in terms of traffic and nuisance, cannot be mitigated by earthworks, bypass or junction remodelling.

Planned investment in the Strategic Rail Network targets the major freight flows from Felixstowe and Southampton to the West Midlands, effectively bypassing Northampton Gateway to the West and North.

Alternative sites exist that are better able to take advantage of investments made in other infrastructure schemes, such as the development of port-centric logistics and specific investments in increasing rail freight capacity.

The proposed scale of the development is in excess of that needed in Northamptonshire, according to Network Rail's own forecasts. Market demand for Northampton Gateway is primarily driven by a shortage of high-quality, large-footprint buildings, not by any proven desire to enact modal shift.

In my opinion, Prologis' assessment that the Northampton Loop could only support a sub-regional facility remains extant. Furthermore, Prologis' assessment that the Highgate facility could "work with" DIRFT III is also correct. We are effectively being asked to approve "DIRFT IV".

Northampton Gateway should be seen for what it is: a sub-regional facility whose primary purpose is to defend Northampton's position as a logistics centre against emerging competition from Milton Keynes and Leicestershire. Northampton Gateway would not fulfil a national strategic role.

The historic take-up of space at DIRFT is less than 50,000m^2 per annum. Unless a major change in buyer behaviour can be proven, DIRFT III will provide capacity for over 15 years.

Granting development consent to Northampton Gateway would risk the environmental success of DIRFT by creating a situation whereby both sites competed for the same train paths.

Priority should be given to filling gaps in the national network of SRFIs, through schemes that provide new routes to the deep-water ports from locations North of the A14 / M6 corridor, such as Hinckley NRFI and West Midlands Interchange.

A combination of the already-consented capacity at East Midlands Gateway, DIRFT III and the proposed Hinckley National Rail Freight Interchange would provide an optimum network solution, sufficient to meet both market needs and national policy objectives in the medium term.

The primary catchment areas of the recommended solution are shown in Figure 9 below. The addition of Hinckley (in red) to the existing SRFI network Gateway provides superior coverage of the "Golden Triangle" and additional route diversity that is not delivered by either Northampton Gateway or Rail Central.

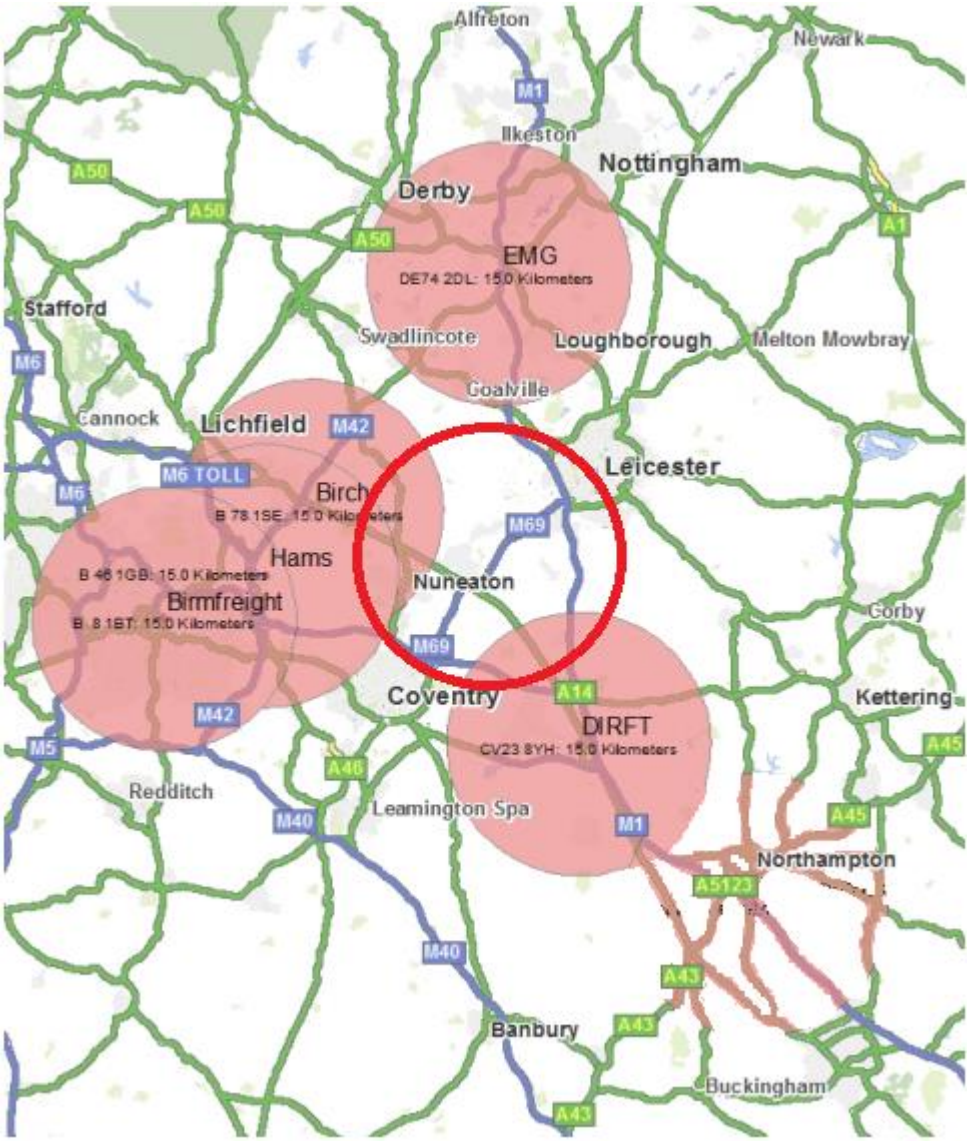

Figure 9: Primary Catchment areas of the Recommended SRFI network in the East Midlands

Annex A: Warehouse Replenishment and Building for Growth

Table A-1: Existing Warehouse Space, units over 25,000m^2, by Local Authority

Postcode	Existing Warehouse Space, m^2	Known Developments, m^2
SNC	122,584	565,822
NBC	773,426	
KET	254,959	156,000
COR	284,921	627,599
ENC	392,180	
MK	845,146	112,647
BED	179,720	
DAV	923,890	144,766
HAR	680,078	379,553
RUG	272,878	742,984
Total	**4,729,784**	**2,729,371**

Table A-2: Warehouse Demand (Replacement & Growth), 2021 – 2036, units over 25,000m^2

HIGH GROWTH (2.2% p.a.)	**2021**	**2026**	**2031**	**2036**
Footprint (m^2)				
Replacement Build	788297	1576595	2364892	3153189
Growth Build	86713	346851	780414	1387403
Build Required	875010	1923445	3145306	4540592
Land (ha)				
Replacement Build	263	526	788	1051
Growth Build	29	116	260	462
Land Required	292	641	1048	1514
Northampton Gateway				
As % Replacement	80%	40%	27%	20%
As % Overall	72%	33%	20%	14%
Known Schemes				
Build Required less All Known Schemes	-1854361	-805952	415935	1811222
Land Required less All Known Schemes	-618	-269	139	604

LOW GROWTH (1.3% p.a.)	**2021**	**2026**	**2031**	**2036**
Footprint (m^2)				
Replacement Build	788297	1576595	2364892	3153189
Growth Build	51239	204957	461154	819829
Build Required	839537	1781552	2826046	3973018
Land (ha)				
Replacement Build	263	526	788	1051
Growth Build	17	68	154	273
Land Required	280	594	942	1324
Northampton Gateway				
As % Replacement	80%	40%	27%	20%
As % Overall	75%	35%	22%	16%
Known Schemes				
Build Required less Known Schemes	-1889834	-947819	96675	1243648
Land Required less Known Schemes	-630	-316	32	415

Notes:

1. Assumed building lifespan: 30 years
2. Development density: GFA built = 30% of land required.

Annex B: Gross Domestic Household Income as a Predictor of Optimum Rail Freight Interchange Location

Abstract: Strategic Rail Freight Interchanges (SRFIs) have formed part of the UK Government's strategy to promote modal shift of freight transport from road to rail since 2001. Whilst the original strategy was informed by three demand models, no revisions have been published. This paper examines changes to the freight flows within the UK that have taken place in the intervening years and proposes an alternative modelling strategy based on a combined assessment of HGV activity and the geographical spread of Gross Domestic Household Income using P-median clustering. The assessment of HGV activity alone is found to result in a sub-optimal solution, when measured against the desired outcomes of national policy. Improvements to the solution derived from the co-assessment of GDHI data are presented.

Keywords: Rail Freight Interchange, Modal Shift, p-median clustering.

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1. Introduction

Strategic Rail Freight Interchanges (SRFIs) have formed part of the UK Government's strategy to promote modal shift of freight transport from road to rail since 2001 [1]. The term SRFI is defined as "a large multi-purpose rail freight interchange and distribution centre linked into both the rail and road trunk system. It has rail-served warehousing and container handling facilities and may also include manufacturing and processing activities" [2]

Early successes, such as the opening of the Daventry International Rail Freight Terminal (DIRFT) in 1997, encouraged developers to bring forward a variety of proposals to expand the network. However, few received consent due to successful challenges mounted by local objectors to the schemes during the formal assessment process.

The overall Rail Freight Strategy of 2001 was informed by two demand models, created by external consultants. First, MDS Transmodal, then a consortium led by Sinclair Knight Merz, were engaged to forecast rail freight volumes under a variety of scenarios. Both models were unconstrained, i.e. not bound by limits on funding or network capacity.

A third model ("the Radical Model") was prepared to inform the regional aspects of the Interchange Policy. This model, prepared by Radical Consultants in partnership with Exel Logistics, examined the potential for replacing existing road freight movements with rail freight movements, using a large sample of data from industry.

All three models were criticised by a report by Steer Davies Gleave and Logistics Consulting Partners, commissioned by the SRA and published in March 2003 [3]. In particular, none of the models were considered, by themselves, able to provide "sufficient granularity to allow a site-specific "need" case to be demonstrated."

Changes to legislation enacted in 2008 altered the business environment around SRFI development. A threshold was set above which the proposal would no longer be considered by the relevant local authority, but would instead be assessed by the Planning Inspectorate at national level [4]. The new process, termed a Nationally Significant Infrastructure Project, was intended to bring forward sites of over 60 hectares in size, that were capable of taking a minimum of 4 trains per day [5].

However, no further modelling of the UK SRFI network has been undertaken since 2001. All of the stakeholders, including developers, inspectors, local authorities and the affected communities, are confronted with a lack of vision, in geographical terms, concerning the scale and location of the network nodes. If the inspecting authority is to review each application in a national strategic context, it is also necessary to develop a standard series of tests that can establish whether the proposed SRFI will function as intended.

The design and siting of SRFIs represents a particularly complex example of the facility location decision, since the primary impetus for the expansion of SRFI provision is normally a policy of encouraging road freight to transfer to rail, rather than the type of bounded study that an individual company would perform. It is very rare for the process to be initiated by a future occupier of the SRFI.

The accentuated emphasis on transport, and reduction of focus on inventory and customers, contrast with the classical approaches to the Facility Location problem, e.g. the Fixed Charge model [6], which begins by

assuming the condition that all customer requirements are to be met and considers transport cost to be secondary to this aim.

Later developments, such as the Integrated Location/Routing models, incorporated corrections introduced by incorrect treatment of less-than-truckload (LTL) shipments [7]. However, an increase in less-than-trainload shipments is a long-held ambition in the UK, suggesting that current data may not reflect future operational practices.

Further refinements, such as the multi-layer models proposed by Perl [8] and Perl and Dasking [9], are rendered less relevant due to the operational difficulty of scheduling multi-drop scenarios on a busy rail network.

Each SRFI is intended to serve as an interchange within a regional, or sub-regional catchment, suggesting that the national-strategic context of a SRFI network has parallels with the closely-related problem of sales territory design. Classic approaches such as those of Beswick [10] and Zoltners and Sinha [11] apply dynamic and integer programming techniques to the allocation of sales resource, using prospective sales as an outcome to be balanced against the workload required to gain them.

Hakimi's approach to identifying "switching centres" [12, 13] was further developed by Maranzana to propose an approach whereby customers were grouped and regrouped until no further improvement could be found [14]. Teitz and Bart put forward an exchange or "swap" algorithm for the sales allocation problem that can also be used for the fixed charge location problem [15]. This approach, as further developed by Mulvey and Beck [16], forms the base algorithm of several commercial tools available today.

More recent studies have tended to focus on planning under uncertainty [17] and in developing models that can cope with facility failure [18]. A feature of such models is the existence of several near-optimal solutions, many of which are potentially more robust that the true optimal solution [19]. If emissions reduction is prioritized, the number of facilities recommended can be higher than the number suggested by purely economic factors [20].

The aim of this paper is to examine the potential for consumer data such as GDHI to inform the design and assessment of potential strategic rail freight interchange sites. The approach is justified by the principle of minimizing secondary distribution mileage, which is one of the stated aims of the relevant National Policy Statement [21].

2. Materials and Methods

The UK Department for Transport (DfT) publishes statistical data on road freight activity on an annual basis [22]. Such data is collected through a continuing survey, which samples the actual origin-destination pairs of journeys undertaken by registered freight operators [23]. The data can be considered robust and comparable between years of publication.

In common with many regional indicators of economic activity, the data is aggregated to the level of NUTS1 regions prior to publication [24]. The publicly-available data sets are therefore at a much higher level of abstraction than the original data, which records origin and destination at postcode district level.

To counter this effect, DfT were requested to provide data at NUTS2 (sub-regional) or (ideally) NUTS3 (county, authority, district) level. Data for the most recent statistical release (2015) was readily available, but it was not possible to receive the equivalent data for 1999, which was the year considered by the 2001 model. Data from 2006 was the closest available.

The UK Office of National Statistics provided data on regional Gross Domestic Household Income, which was used as an indicator of the amount of disposable income available to purchase goods transported through the SRFI network.

The Circos tool developed by Krzywinski *et al* was used to visualize the temporal changes in freight activity through analysis of the respective origin-destination pairs [25].

Capacitive p-median clustering of SRFI "territories" was carried out using open source software (OpenDoor Logistics Studio) [26]. Further visualization of the clustering results was undertaken using ArcGIS.

The following hypotheses were tested:

H1: An SRFI network designed on the basis of current road freight activity (tonne-km) will have a significantly different design from a network designed on the basis of Gross Domestic Household Income.

H2: An SRFI network designed on the basis of 2006 data will have a significantly different design from a network designed on the basis of 2015 data.

H3: A combination of road freight activity and GDHI data can be found that produces an SRFI network that is more efficient than the network obtained by using either parameter in isolation.

3. Results

The overall level of road freight activity in the UK shows little change between 2006 and 2015, however the pattern of freight movements is markedly different when considered at sub-regional level. Figures B1 and B2 show the visualization of the changes in origin-destination pairs between the two reference years:

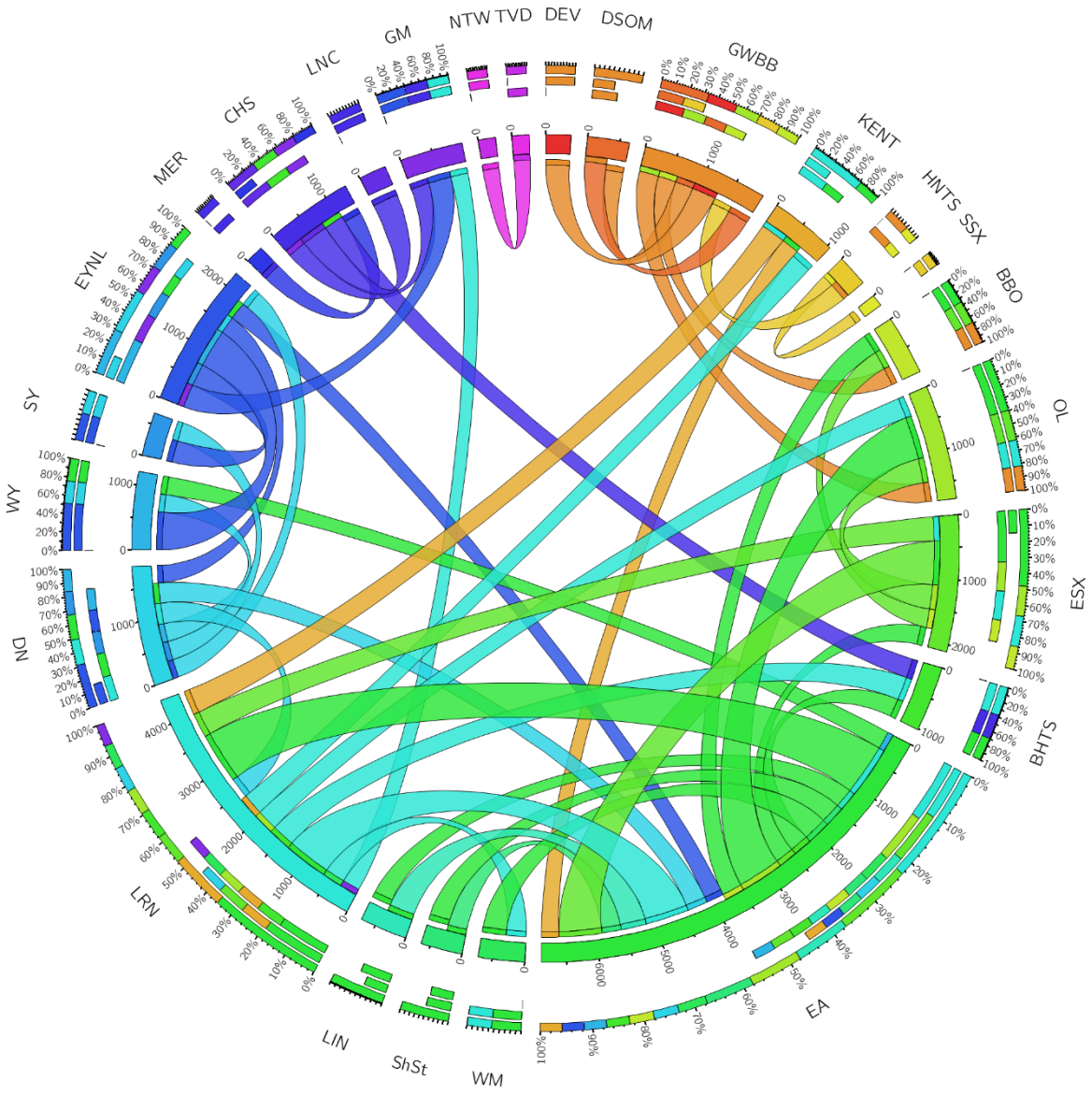

Figure B1: Origin-Destination pairs for UK HGV activity, NUTS2, 2006 (threshold 285mtkm)

DEV	Devon	LIN	Lincolnshire
DSOM	Dorset and Somerset	LRN	Leicestershire, Rutland and Northants
GWBB	Gloucester, Wales, Bristol & Bath	DN	Derbyshire and Nottinghamshire
KENT	Kent	WY	West Yorkshire
HNTS	Hampshire	SY	South Yorkshire

SSX	Sussex	EYNL	East Yorkshire and North Lincolnshire
BBO	Bedfordshire, Berkshire and Oxfordshire	MER	Mersey
OL	Outer London	CHS	Cheshire
ESX	Essex	LNC	Lancashire
BHTS		GM	Greater Manchester
EA	East Anglia	NTW	Newcastle, Tyne and Wear
WM	West Midlands	TVD	Tees Valley and Co. Durham
ShSt			

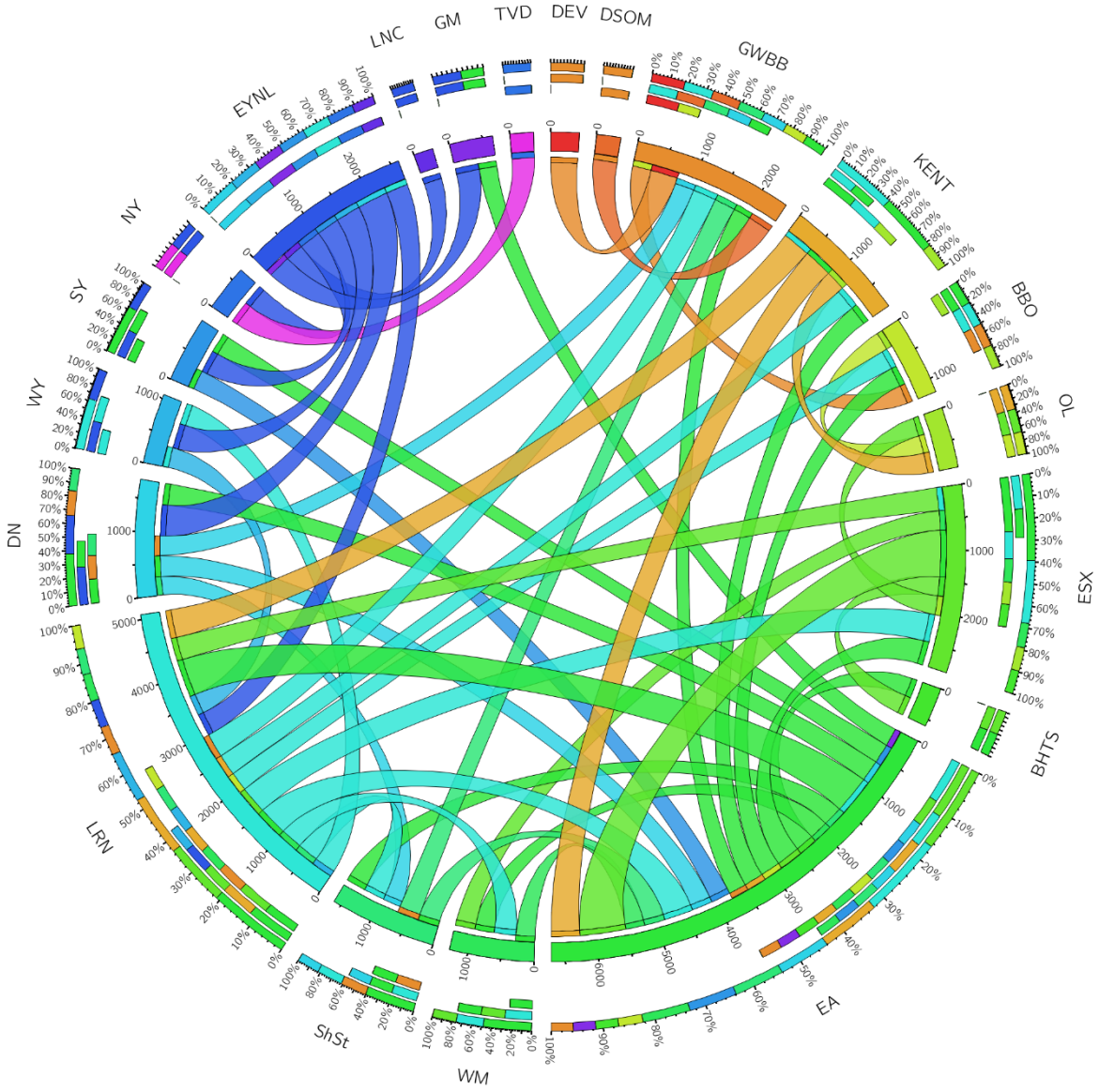

Figure B2: Origin-Destination pairs for UK HGV activity, NUTS2, 2015 (threshold 285mtkm)

The pattern of activity in 2015 is much more complex than 2006, with activity to and from the main container port in Felixstowe and destinations in Yorkshire and the West Midlands rising by approximately 115%. Over the same period, activity between the logistics heartland of Leicestershire/ Northamptonshire and Felixstowe fell by 35%, though traffic with the newly-opened London Gateway port rose by 65%.

One possible explanation for these changes may be found in changes in regional Gross Domestic Household Income that took place over the same period. Prior to the financial crisis of 2008, disposable income in the UK was concentrated in London. In the years immediately following the crisis, one of the key

effects of falling interest rates was to reduce mortgage payments, thereby increasing GHDI in regions with higher housing costs [27].

The differences in geographic distribution of GDHI are visualized in Figures B3 and B4.

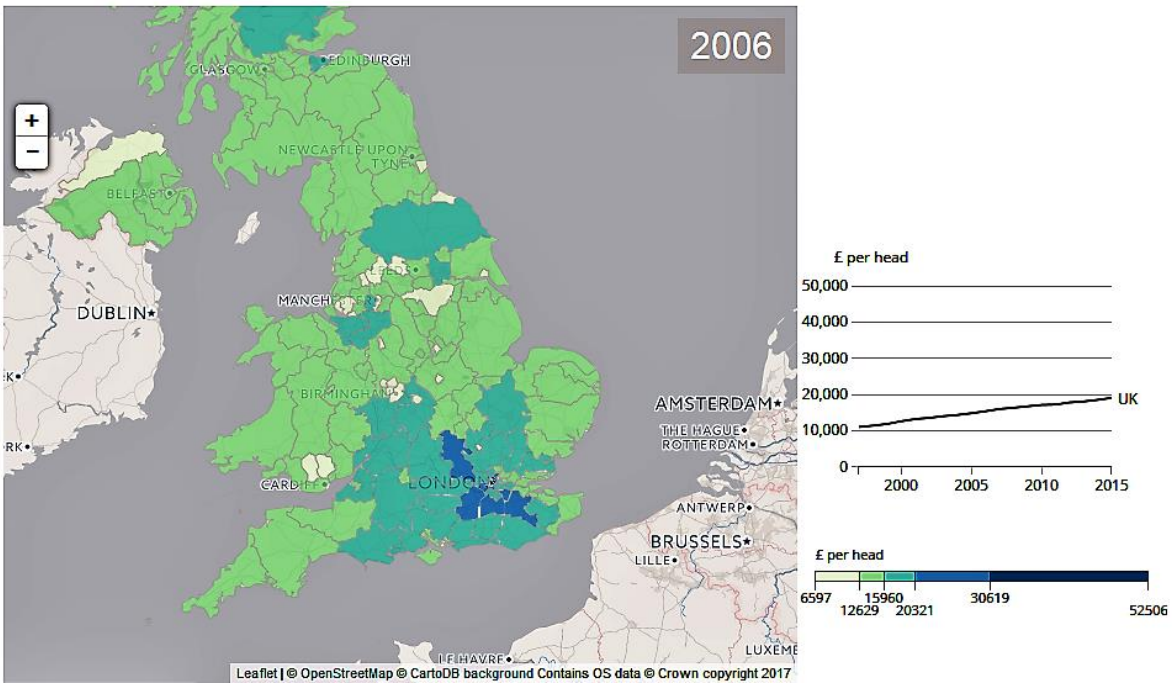

Figure B3: Regional Distribution of Gross Domestic Household Income, 2006 [28]

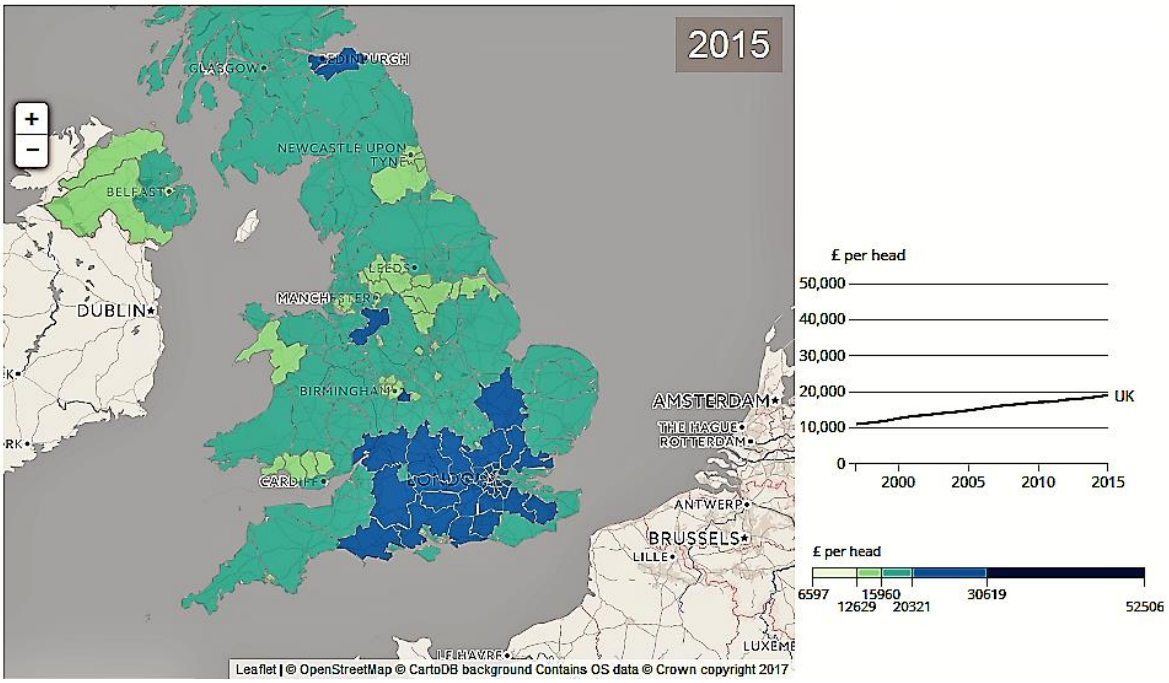

Figure B4: Regional Distribution of Gross Domestic Household Income, 2015 [28]

Logistics companies are limited in their response to changes in the pattern of sales which, at least in the short term, are chiefly accommodated by increased transport activity rather than by relocation or expansion of facilities. Barriers such as lease terms and obligations to the workforce under employment law are harder to overcome than the adoption of a short-term transport solution.

Transport activity *per se*, as evidenced by the relevant freight activity statistics, can therefore be expected to be a poor indicator of optimum facility location, since increases in activity can arise through poor siting, relative to the markets served.

To explore this hypothesis further, capacitive p-median clustering was performed using a data set that combined both road freight activity statistics and regional GDHI figures for 2006 and 2015. Scenarios were run under unconstrained conditions, constrained (number), constrained (capacity), constrained (location) and combinations of these.

As expected, the output of the activity-based clustering indicated a preference for centralized activity, around the West Midlands – East Midlands – East Anglia corridor where most HGV activity can be found. One output pair is shown in Figures B5 and B6 for illustration.

Figure B5: P-median clustering of Road Freight Activity, 2006, 10 nodes [23]

Figure B6: P-median clustering of Road Freight Activity, 2015, 10 nodes [23]

The output of income-based clustering produced a different pattern, illustrated in Figures B7 and B8. The changes in GDHI distribution observed between 2006 and 2015 cause a shift in the network to serve the North of the country.

Figure B7: P-median clustering of Gross Domestic Household Income, 2006, 10 nodes [28]

Figure B8: P-median clustering of Gross Domestic Household Income, 2015, 10 nodes [28]

Within the UK, seven SRFIs are currently operational with a further two sites consented in the medium-term (Table 1). Note the major ports, Felixstowe and Southampton, do not have enough warehousing to act as SRFIs, though they are important origins for intermodal freight.

Table 1. Location, Status and Relative Demand of Known SRFI Locations

Location	Relative Demand[1]	Status
Daventry	22	Operational
London Gateway	16	Operational
Widnes	14	Operational
Hams Hall	12	Operational
Mossend	10	Operational
Doncaster	8	Operational
Wakefield	7	Operational
East Midlands	14 (est.)	Consented
Radlett	14 (est.)	Consented

[1] Measured in terms of trains per day at completion.

The clustering algorithm is able to accommodate these known locations as fixed points, optimizing the locations of further SRFIs to complete the network. An example of the output of GDHI-based clustering using these known locations is shown in Figure 9 (based on a network containing 10 nodes).

Figure B9: P-median clustering of Gross Domestic Household Income, 2015, incorporating existing SRFI locations, 12 nodes

The proposed network prioritises development in the West of England, near Bristol, and in the North East. Both are regions that are currently poorly-served by SRFIs.

The GDHI and TKM datasets were then normalized to set the largest demand to 10 000. This transformation permits the combination of GDHI and TKM weights from 100:0 to 0:100 in steps of 10 (90:10. 80:20….20:80, 10:90, etc). Each combination was then used to design an SRFI network, noting the total travel distance reported by Open Door Logistics.

Travel distance is a measure of operational efficiency, with a lower figure more desirable. A clear minimum was found in the 2015 dataset, corresponding to a relative weight of 40% GDHI and 60% TKM. This optimum network, shown in Figure 10, was found to have 20% less travel distance than a network based on TKM alone.

Figure B10: P-median clustering of Gross Domestic Household Income (40%) and Tonne-Km (60)%, 2015, incorporating existing SRFI locations, 15 nodes

4. Discussion

In the 2001 "Radical" study, a digital map of the rail network was used to re-route a known data set of existing road journeys over the rail network [3]. This methodology effectively embeds the characteristics and constraints of the road-based solution that is operated at the time; no account of future developments in operational practice is taken.

GDHI modelling, by contrast, begins from a premise that the goods being transported are ultimately to be delivered to consumers who will pay for them from their disposable income. Whilst this assumption may not be applicable to all types of cargo, it is readily applicable to domestic intermodal trade from the deep-water ports, which chiefly comprises imported consumer goods, clothing and textiles, food and beverages.

The rise of online retailing has resulted in an increasing volume of goods being delivered directly to the consumer, rather than to a traditional retail outlet. Online fulfillment was negligible in 2001, when the "Radical" study was undertaken. In 2016, 14.6% of UK retail transactions were carried out online; by 2020, this figure is forecast to rise to 21.5% [29].

The spatial concentration of many of the largest distribution centres in the East Midlands began with the large-scale release of land by local authorities for logistics purposes in the 1980s [3]. In 2014, 20% of UK warehouse floorspace was located in the East Midlands [30]. As the stock of warehousing ages, it is replaced by more modern stock. These new buildings are generally much larger structures, offering economies of scale through rationalization of several smaller facilities into one.

The lack of availability of larger development sites has suppressed supply of large warehouses in the UK, and a considerable demand for large facilities remains unmet [31]. Commentators such as MDS Transmodal have suggested that 60% of very large new-build facilities (>25,000m2) should be rail-connected [30].

However, the design of a national network of SRFIs does not imply a simple overlay of rail-connected "freight villages" on existing road-based networks. Unless special circumstances apply, rail freight only becomes competitive with road haulage over longer distances (approximately 250km) [30]. In 2016, the average length of haul in the UK was 123km [32], implying that only a small proportion of longer-distance traffic would readily transfer to rail.

Furthermore, restrictions on driver's hours have a significant effect on road-based depot siting by limiting the "reach" of the depot to destinations that can mostly be served within a day. Rail freight does not operate in the same way, allowing rail origins and destinations to be much further apart.

The design of the network should seek to accommodate longer-range freight flows first. This principle has already been proven in the success of the Daventry International Rail Freight Terminal is capturing trade to and from Scotland.

Inspection of the Circos output [Figure B3] shows that the main development priority should be traffic between the main ports – Felixstowe and Southampton – and the North West. This conclusion is reinforced by the output of the tonne-km clustering exercise [Figure B6], with a further two SRFI indicated in the Liverpool – Preston region. This conclusion is consistent with proposals to develop the rail connectivity of the Mersey Multimodal Gateway (3MG) [33] and to site an SRFI in Parkside, near St Helens [34].

However, the overall network suggested by the tonne-km clustering exercise lies in a narrow corridor running NW – SW across England, from the Mersey to London. This configuration is not the "network across the regions" that is envisaged in the National Policy Statement. The additional consideration of GDHI data results in the addition of SRFI capacity to serve the West of the country, near Bristol, and the North East [Figure 8]. Furthermore, GDHI clustering suggests that 3-4 smaller SRFI should be developed to serve London; this was a key output of the original "Radical" study [3].

5. Conclusions

The changes in freight flows observed in the past 15 years demonstrate that UK distribution is much more complex, and more intense, than the currently-favoured centralized distribution model envisaged when it was developed in the mid-1980s. Challenges from port-centric models can be expected to gain momentum as port operators invest in rail facilities and develop their hinterland as logistics parks.

Changes to freight flows within the UK over the past 15 years, and the rise of online retailing are likely to result in different development priorities. Consideration of the distribution of Gross Domestic Household Income, alongside existing road freight activity, is likely to produce a more robust solution than HGV activity alone.

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Annex C: Application of AECOM Strategic Distribution Assessment Methodology to East Midlands Rail Freight Interchange Location

Abstract: Strategic Rail Freight Interchanges (SRFIs) have formed part of the UK Government's strategy to promote modal shift of freight transport from road to rail since 2001. Whilst the original strategy was informed by three demand models, no revisions have been published. This paper evaluates potential SRFI sites in the East Midlands through the application of a methodology originally developed by AECOM.

Keywords: Rail Freight Interchange, Modal Shift, alternative site assessment.

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1. Introduction

Strategic Rail Freight Interchanges (SRFIs) have formed part of the UK Government's strategy to promote modal shift of freight transport from road to rail since 2001. Whilst the original strategy was informed by three demand models, no revisions have been published. Suitable locations for SRFI development are scarce, due in the most part to topographical limitations imposed by safe intermodal operations and by the statutory minimum size of 60 hectares.

Developers include an assessment of alternative sites in their applications for development consent, but the independence of their assessment has been called into question, as the following case study illustrates:

The methodology employed can be traced back to the original work undertaken by FPD Savills on behalf of the promoters of the Howbury Park Scheme in 2004. This study is often referenced by contemporary reports, such as the Assessment of Sites for Rail Freight Development Potential that accompanied the DIRFT III proposals.

Substantial inputs from affected stakeholders, identifying further potential sites, caused a revision of the assessment to be undertaken by Nathaniel Lichfield and Partners in 2006.

Delays to the granting of consent for Howbury Park, and the transfer of primacy from SRA guidance to the National Policy Statement, required a further revision of the Alternative Site Assessment to be carried out in 2012. This report was again undertaken by Nathaniel Lichfield and Partners.

Inspection of the series of reports undertaken in support of the Howbury Park scheme shows an evolution of methodology to meet the guidance of the time. The Savills report, in particular, pays very close attention to SRA guidance, including many quotations from the relevant sources as justification of the selection of specific assessment criteria.

The 2012 report, by contrast, chose not to repeat the "detailed methodology" of the 2004 report, preferring instead to award greater weight to selected comments made by the planning inspector.

The 2004 report referenced the then Strategic Rail Authority guidance on RFI development, including the requirement that the site should possess the "ability to contribute to the national network by filling gaps in provision". This requirement was not retained by the 2012 assessment.

In the main, the 2012 assessment followed NPSNN guidance. NPSNN justifies SRFI development on the basis that "development of additional capacity at Felixstowe North Terminal and the construction of London Gateway will lead to a significant increase in logistic operations".

Whilst this statement is quoted in the 2012 report, it does not lead to the inclusion of connectivity with the Haven and Gateway ports as a factor in alternative site assessment. Howbury Park is very difficult to reach from either port; sites north of the Thames would have held an advantage. The requirement for connectivity with Felixstowe and Gateway would have weakened their case.

The 2012 assessment did retain selected elements of earlier SRA guidance, notably the requirement for "3-4 SRFI to serve London." This endorsement clearly strengthened the developer's case.

Any inference that the assessment of alternative sites had been influenced by commercial considerations would have been mitigated if an independent methodology had been applied.

Independent assessments of suitable sites are undertaken by consultants appointed by Regional Development bodies. The methodologies employed in independent studies are often more detailed than those customarily used by developers.

2. Materials and Methods

This paper applies the methodology developed by AECOM to identify suitable SRFI sites in the "Three Cities Area" (Derby, Leicester and Nottingham) to assess potential SRFI sites within the wider East Midlands. The three sites under assessment are Northampton Gateway (promoted by Roxhill), Rail Central (promoted by Ashfield Land), and Hinckley National Rail Freight Interchange (promoted by DB Symmetry).

The aim of this exercise is to provide a comprehensive, independent and traceable assessment of alternative sites that can be directly compared against the individual assessments submitted by the promoters of each site.

3. Results

The AECOM approach begins with a Go / No Go assessment based on rail and road connectivity, site area and critical planning considerations. All questions have been answered on the assumption that mitigation has been applied in the design, up to the point where mitigation would imply additional Nationally Significant Infrastructure Projects, e.g. junction remodeling of the SRN, or bypassing of a sensitive receptor:

Question	NG	RC	HNRFI
Is rail network connectivity available to either the SFN or secondary network without significant upgrades to get sufficient gauge or capability?			
Is road access to the site sufficient i.e. motorway / trunk roads can be relatively easily reached and there are no significant issues with junction capacity?			
Is there sufficient area for a Strategic Rail Freight site i.e. >60ha and configuration capable of handling trains?			
Is the site within the boundary of a Sustainable Urban Extension?			

Grading of the competing sites begins with an assessment of Rail Access, measured in terms of Connectivity, Frontage, the ability to handle long train lengths and the creation of a network buffer:

1.1	3	Direct Access to an SFN route w/multiple routings	NG	RC	HNRFI
Rail Network	2	Direct Access to an SFN route w/single routings			
Connectivity	1	Within 2 miles of one or more SFN			
Primary	0	Within 5 miles of one or more SFN	2	2	3
	-1	Within 10 miles of one or more SFN			
	-2	Over 10 miles of one or more SFN			
	-3	No Direct Rail Access			

1.2	3	Existing Rail Connection multi-directional	NG	RC	HNRFI
Rail Frontage	2	Existing Rail Connection single-directional			
Available	1	Existing Rail Connection (exists but rails have gone)			
Primary	0	Frontage 1km plus	0	0	0
	-1	Frontage 600m to 999m			
	-2	Frontage 400m to 599m			
	-3	Less than 400m			

1.3	3	775m or over	NG	RC	HNRFI
Train Length	2	600m – 774m	3	3	3
	1	500m – 600m			

Primary	0	450m – 499m			
	-1	775m requires to be split in two			
	-2	775m requires to be split in three			
	-3	775m requires to be split in four			

1.4	3	1000m or over	NG	RC	HNRFI
Network Buffer	2	775m – 999m			
	1	600m – 774m			
Secondary	0	500m – 599m	2	2	2
	-1	400m – 499m			
	-2	300m – 399m			
	-3	Less than 300m			

The next assessment evaluates Road Access:

2.1	3	Access to Motorway or 2 dual carriageways	NG	RC	HNRFI
Access Road	2	Access to rural dual carriageway / SRN			
from Site	1	Access to other dual carriageway			
Primary	0	Access to rural single carriageway A Road	0	2	3
	-1	Access to urban single carriageway A Road			
	-2	Access to any other road with width 11.5m or wider			
	-3	Access to a minor road			

2.2	3	5 minutes or less	NG	RC	HNRFI
Time to Access	2	5 – 10 minutes			
Motorway	1	10 – 15 minutes			
Primary	0	15 -20 minutes	3	2	3
	-1	20 – 25 minutes			
	-2	25 – 30 minutes			
	-3	Over 30 minutes			

2.3	3	0 – 70%	NG	RC	HNRFI
SRN Link Stress	2	70 - 80%			
	1	80 – 90%			
Secondary	0	90 – 100%	-3	-2	2
	-1	100 – 110%			
	-2	110 – 130%			
	-3	> 130%			

2.4	3	No current issues or issues in 5 years	NG	RC	HNRFI
SRN Junction	2	Minor issues within 5 years with potential mitigation			
Performance	1	Minor issues at present with potential mitigation			
Secondary	0		-3	-2	2
	-1	Significant capacity issues within 10 years			
	-2	Significant capacity issues within 5 years			
	-3	Significant capacity issues at present			

2.5	3	Rural dual carriageway local road access to SRN	NG	RC	HNRFI
Local Road	2	High standard rural single carriageway to SRN			
Network Usage	1	Urban dual carriageway local roads to SRN	-2	3	3
Primary	0	Rural single carriageway local road access to SRN			
	-1	Urban local roads; slight issues with standard/peak			

	-2	Rural local roads; significant issues			
	-3	Urban local roads; significant issues			

The next assessment covers the Physical Description of the site:

3.1	3	100 hectares or over	NG	RC	HNRFI
Site Area	2	75 – 99 hectares			
	1	60 – 74 hectares			
Primary	0	50 – 59 hectares	3	3	3
	-1	40 – 49 hectares			
	-2	30 – 39 hectares			
	-3	< 30 hectares			

3.2	3	Site not requiring earthworks	NG	RC	HNRFI
Topography	2				
	1				
Primary	0	Site requiring moderate earthworks	-3	0	0
	-1				
	-2				
	-3	Site requiring complete / extensive earthworks			

3.3	3	Excellent configuration and potential	NG	RC	HNRFI
Warehouse	2				
Configuration	1				
Potential	0	Moderate configuration and potential (incl. split sites)	3	0	0
	-1				
Primary	-2				
	-3	Poor configuration and potential			

The fourth criterion is Site Deliverability:

4.1	3	Single owner known to have expressed interest	NG	RC	HNRFI
Ownership	2				
	1	Single owner, not known to have expressed interest			
Primary	0	Unknown status on ownership	-3	-3	-3
	-1				
	-2				
	-3	Multiple owners			

4.2	3	Mentioned positively by 3 or more organisations	NG	RC	HNRFI
Site Promotion	2	Mentioned positively by 2 organisations			
	1	Mentioned positively by one organisations	1	1	1
Secondary	0	No mentions			

4.3	3	Site has planning permission for B8 / B2 use	NG	RC	HNRFI
Land Allocation	2	Site has an allocation for B8 / B2 use in Adopted Plan			
	1	Site has been proposed as potential B8 / B2 in Emerging Core Strategy	0	0	0
Primary	0	Site has no allocation in an Adopted Plan			
	-1	Site has been allocated an alternative use in an AP			

	-2	Site has been permitted an alternative use			
	-3	Site is protected / severely restrained			

4.4	3		NG	RC	HNRFI
Site Flooding	2				
	1				
Primary	0	No risk of flooding	0	-1	0
	-1	In "Areas Benefitting from Flood Defences"			
	-2	In "Extent of Extreme Flooding Area"			
	-3	In "Flooding from Rivers or without Defences" area			

4.5	3	No known contamination	NG	RC	HNRFI
Site	2				
Contamination	1				
Primary	0	Anticipate manageable contamination issues	3	3	3
	-1				
	-2				
	-3	Significant and Serious Contamination			

The fifth criterion is Contribution to Regional Growth. The number of trains that can be reasonably expected to serve each site at completion is used as a proxy for this Regional GVA figure.

This figure does not include any paths released following the construction of HS2, since the availability of such paths cannot be guaranteed. Furthermore, the figure used is not derived from the developer's own forecast, but from an independent assessment of path availability in competition with other services:

5.1	3	Up to 12 trains per day	NG	RC	HNRFI
Contribution to	2	Up to 10 trains per day			
Regional GVA	1	Up to 8 trains per day			
Primary	0	Up to 7 trains per day	1	1	3
	-1	Up to 6 trains per day			
	-2	2 – 5 trains per day			
	-3	One train or less per day			

5.2	3	More than 30% above average	NG	RC	HNRFI
Job Creation	2	20 – 30% above average			
	1	10 – 20% above average			
Secondary	0	Plus / minus 10% of average	3	3	3
	-1	10 – 20% below average			
	-2	20 – 30% below average			
	-3	More than 30% below average			

5.2	3	More than 30% above average	NG	RC	HNRFI
Deprivation	2	20 – 30% above average			
	1	10 – 20% above average			
Secondary	0	Plus / minus 10% of average	0	-2	1
	-1	10 – 20% below average			
	-2	20 – 30% below average			
	-3	More than 30% below average			

The inclusion of the Economic Deprivation Index highlights those areas where job creation will be most beneficial. The AECOM methodology incorporates a model originally prepared for the Warrington Parkside Terminal assessment.

The sixth criterion is Commuting:

6.1	3	More than 75% above average	NG	RC	HNRFI
Sustainable	2	50 – 75% above average			
Commuting	1	25 – 50% above average			
Primary	0	Plus / minus 25% of average	-1	-2	-1
	-1	25 – 50% below average			
	-2	50 – 75% below average			
	-3	More than 75% below average			

6.2	3	Site can be reached within 15 minutes	NG	RC	HNRFI
Public /	2				
Dedicated	1				
Transport	0	Site can be reached within 30 minutes by 50% of staff	0	-3	0
Secondary	-1				
	-2				
	-3	Site cannot be reached in 30 minutes by 50% of staff			

6.3	3	24hr public transport with 15 minute frequency or less	NG	RC	HNRFI
Public /	2				
Dedicated	1	Existing public transport with 30 mins freq or less			
Transport	0	Existing public transport with hourly freq or less	0	-3	0
Secondary	-1				
	-2				
	-3	Remote location			

The seventh criterion is demand. Following the freight flows analysis found in Annex B, the allocation of scores between Leicestershire, Northamptonshire and Buckinghamshire have been allocated as follows:

7.1	3	Leicestershire	NG	RC	HNRFI
Proximity to	2	Northamptonshire			
Market	1	Buckinghamshire			
	0		2	2	3
Primary	-1				
	-2				
	-3				

7.2	3	More than 30% above average	NG	RC	HNRFI
Proximity to	2	20 – 30% above average			
Population	1	10 – 20% above average			
	0	Plus / minus 10% of average	0	0	1
Primary	-1	10 – 20% below average			
	-2	20 – 30% below average			
	-3	More than 30% below average			

7.3	3	Anchor tenant	NG	RC	HNRFI
Anchor Users	2	Potential Anchor Customer with significant volume	0	0	0
	1	Small potential rail freight users			

Primary	0 -1 -2 -3	Unknown potential users			

The eighth criterion is Cost of Development:

8			NG	RC	HNRFI
Cost of Development	3 2 1	Re-use of existing terminal Low Cost Medium Cost			
Primary	0 -1 -2 -3	High Cost / High Escalation Risk	0	1	1

Finally, the ninth factor evaluated was Environmental and Heritage:

9.1			NG	RC	HNRFI
Environmental Factors	3 2 1				
Primary	0 -1 -2 -3	Negligible Low Medium Very High (SPA, SAC, SSSI, etc)	0	0	0

9.2			NG	RC	HNRFI
Heritage and Archaeological	3 2 1				
Primary	0 -1 -2 -3	Negligible Low (sites of local importance) Medium (designated historic landscapes) Very High (WHS, listed buildings etc)	0	0	0

Following the original methodology by allocating double weight to the factors identified as "Primary", we obtain the following result:

10	NG	RC	HNRFI
Overall Assessment			
Final	22	26	55

4. Discussion

Hinckley National Rail Freight Interchange is found to be a substantially superior alternative site to either Rail Central or Northampton Gateway.

The high ranking for the Hinckley site is attributed to the enhanced connectivity to Felixstowe, a high potential for modal shift (being next to the A14 corridor) and a generally strong performance in respect of other factors of Primary importance (i.e. of double weight).

Northampton Gateway is the least attractive site of the three proposals, though it trails Rail Central only marginally. The difference is unlikely to be significant.

Whilst Northampton Gateway scored more highly than Rail Central in respect of factors such as Commuting, Northampton Gateway's costly earthworks reduce its ranking below that of Rail Central.

The developer's application for Northampton Gateway does not include a separate Assessment of Alternative Sites. The same developer chose to use the AECOM methodology to support an earlier scheme, at East Midlands Gateway, but has not been consistent in their approach to the Assessment of Alternative Sites with regard to Northampton Gateway.

Had the AECOM methodology been used to assess Northampton Gateway, the proposal would not have passed the Go / No Go stage at the first attempt. Concerns over the links to the motorway network and future capacity issues on the M1 would have resulted in a red flag situation.

However, the developer has persisted with the proposal and has brought forward plans to remodel the motorway junction concerned (M1 J15), to bypass a sensitive receptor (the village of Roade) and to undertake extensive earthworks in order to mitigate the visual and noise impacts of the scheme.

These are expensive mitigations and must be construed as implying an unusually high risk appetite.

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Summary of Objection to Northampton Gateway Rail Freight Interchange TR050006

Andrew Gough

Summary of Written Representation

The aim of the full Written Representation is twofold: (a) to place an independent version of the Need Case, the Strategic Context and the Operational Superiority of the proposed site into the public domain and (b) to provide a commentary on the collective interpretation of their results in the context of the proposed Northampton Gateway development.

Summary of Studies

Network Rail's published forecasts assume that 179,000 m^2 of rail-connected warehousing will be brought forward in South Northamptonshire by 2023/4, in addition to the expansion of DIRFT. This figure is projected to rise to 322,000 m^2 by 2033/4.

Northampton Gateway proposes to bring forward 468,000m^2, which represents a 145% over-provision of rail-served warehousing.

Annex A to the WR contains a new analysis which compares the Rail Central and Northampton Gateway proposals against a background of other planned schemes that are being brought forward in the study area, with a view to establishing whether one, other or both proposals can be accommodated within an overall strategic demand.

Only one of the three schemes proposed for the East Midlands – Northampton Gateway, Rail Central or Hinckley NRFI – is shown to be needed in the medium term, in addition to DIRFT III.

To a first degree of approximation, we can expect that 80% of the jobs created by Northampton Gateway will be taken by a workforce relocating from elsewhere.

The calculations within the Socio-Economic Assessment would appear to have been based on gross population projections, and not on estimates of the working age population. This is likely to have led to a number of errors, not only in terms of the estimation of socio-economic benefits but also in the inputs to other workstreams.

Annex B contains a strategic model of UK freight flows, compiled with the assistance of the DfT. A combination of the already-consented capacity at East Midlands Gateway, DIRFT III and the proposed Hinckley National Rail Freight Interchange is shown to provide an optimum network solution, sufficient to meet both market needs and national policy objectives in the medium term.

Annex C contains the output of a review of the suitability of three proposed SRFI sites in the East Midlands (Hinckley, Northampton Gateway and Rail Central) using the methodology used to support the East Midlands Gateway proposal.

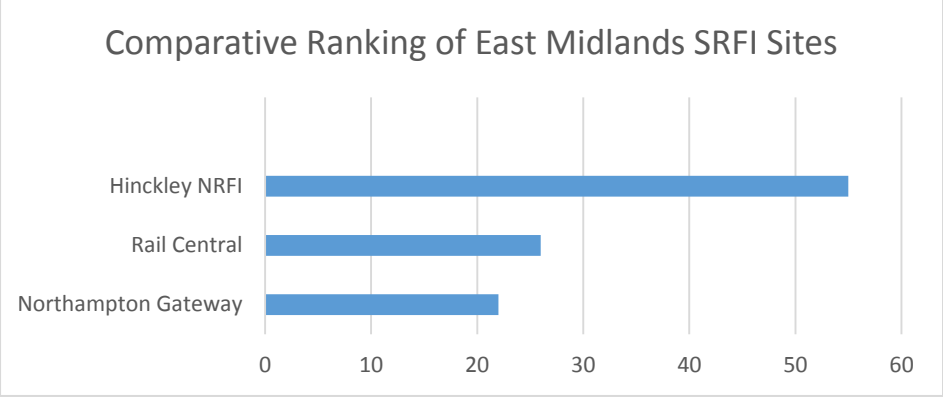

Figure 7: Ranking of proposed SRFI sites in the East Midlands

Northampton Gateway is shown to be the least attractive site of the three proposals, Hinckley NRFI is shown to be the best site under consideration.

Network Rail and the Ports have established a number of key interventions in the short-term, as well as longer-term priorities out to 2024 (Control Period 6).

The priorities set “to enable new flows” run to the North of Northampton Gateway, along the Felixstowe to Nuneaton route, and to the West of Northampton Gateway, along a route from the West Midlands to Southampton.

The implication of these priorities is tha*t* Northampton Gateway (and Rail Central, if consented) will be effectively bypassed by investment in rail infrastructure.

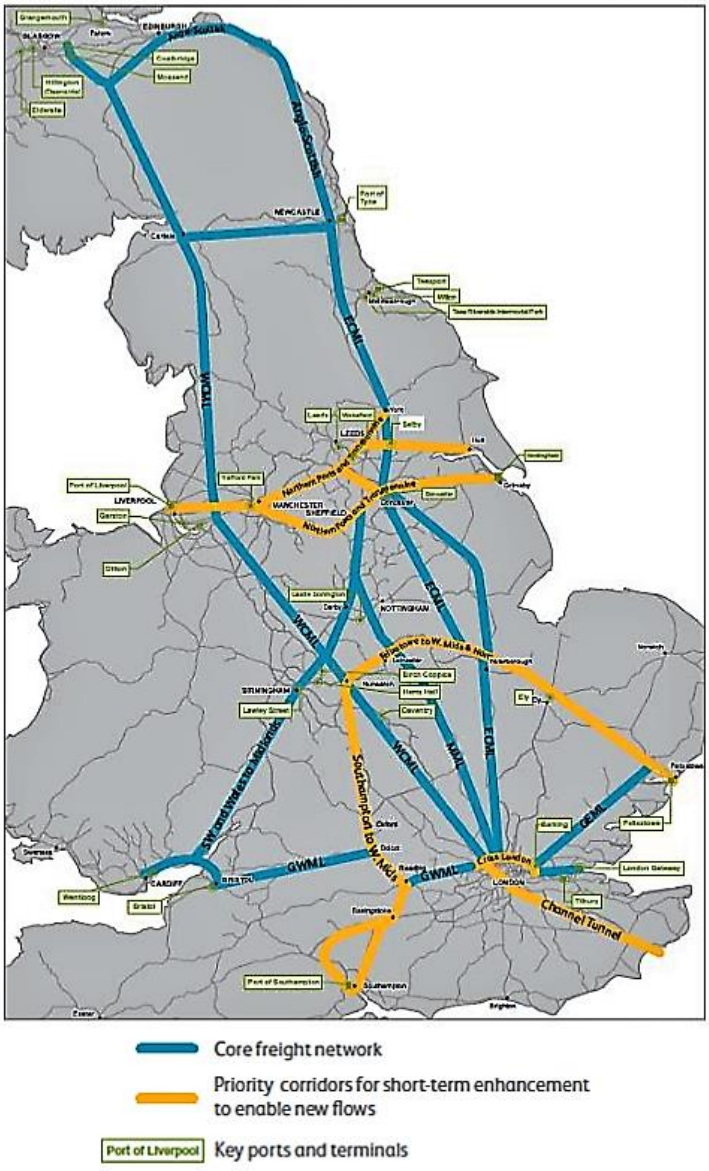

Figure 8: Network Rail's Core Freight Network Priorities for Short Term Intervention[1]

[1] Network Rail (2017), Freight Network Study, Long Term Planning Process, April 2017 https://cdn.networkrail.co.uk/wp-content/uploads/2017/04/Freight-Network-Study-April-2017.pdf

Summary of Objection

Deficiencies in the Assessment of Alternative Sites result in significant non-compliance with planning legislation. Deficiencies in the socio-economic case highlight non-alignment with NPSNN policies on availability of labour. Non-alignment with the NPSNN policy of sustainable design, particularly in terms of traffic and nuisance, cannot be mitigated by earthworks, bypass or junction remodelling.

Planned investment in the Strategic Rail Network targets the major freight flows from Felixstowe and Southampton to the West Midlands, effectively bypassing Northampton Gateway to the West and North. Only when paths are released by HS2 would there be any real prospect of significant modal shift.

The mere prospect of future capacity should not be used as justification for consent as it cannot be guaranteed. The application is therefore premature.

Alternative sites exist that are better able to take advantage of investments made in other infrastructure schemes, such as the development of port-centric logistics and specific investments in increasing rail freight capacity.

The proposed scale of the development is in excess of that needed in Northamptonshire, according to Network Rail's own forecasts. Market demand for Northampton Gateway is primarily driven by a shortage of high-quality, large-footprint buildings, not by any proven desire to enact modal shift.

Granting development consent to Northampton Gateway would risk the environmental success of DIRFT by creating a situation whereby both sites competed for the same train paths.

Priority should be given to filling gaps in the national network of SRFIs, through schemes that provide new routes to the deep-water ports from locations North of the A14 / M6 corridor, such as Hinckley NRFI and West Midlands Interchange.

Department for Transport statistics

Road Freight Statistics

Table RFS0140
Goods moved by region and country of origin and destination, 2006

UK activity of GB registered heavy goods vehicles

Million tonne kilometres

	NUTS 1	North East			North West			Yorkshire and The Humber				East Midlands			West Midlands			Eastern			London		South East			South West			Wales		Scotland			Northern Ireland	
	Destination NUTS 2	Tees Valley and Durham	Northumberland and Tyne and Wear	Cumbria	Greater Manchester	Lancashire	Cheshire	Merseyside	East Yorkshire and Northern Lincolnshire	North Yorkshire	South Yorkshire	West Yorkshire	Derbyshire and Nottinghamshire	Leicestershire, Rutland and Northamptonshire	Lincolnshire	Herefordshire, Worcestershire and Warwickshire	Shropshire and Staffordshire	West Midlands	East Anglia	Bedfordshire and Hertfordshire	Essex	Inner London	Outer London	Berkshire, Buckinghamshire and Oxfordshire	Surrey, East and West Sussex	Hampshire and Isle of Wight	Kent	Gloucestershire, Wiltshire and Bristol/Bath area	Dorset and Somerset	Cornwall and Isles of Scilly	Devon	West Wales and The Valleys	East Wales	North Eastern Scotland	Highlands and Islands	Eastern Scotland	South Western Scotland	Northern Ireland	Subtotal
NUTS1	Origin NUTS2																																			
North East	Tees Valley and Durham	641	267	78	135	94	161	87	176	100	62	153	41	111	57	:	46	50	139	:	:	:	:	:	:	:	:	:	:	:	:	:	231	188	:	3282
	Northumberland and Tyne and Wear	179	799	81	55	:	53	39	84	63	94	67	53	70	:	:	:	120	:	:	:	:	:	:	:	:	:	:	:	:	:	:	220	129	:	2525
North West	Cumbria	104	101	389	122	205	133	:	:	57	:	54	:	161	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	92	232	:	2551
	Greater Manchester	101	64	71	1,402	225	237	256	105	45	45	153	144	200	60	210	113	221	164	88	:	98	97	:	:	:	160	:	:	:	57	90	:	99	301	:	5233
	Lancashire	49	:	86	233	961	102	113	101	76	25	76	77	157	:	77	101	105	:	:	:	:	:	:	:	:	:	:	:	:	48	59	:	227	151	:	3567
	Cheshire	136	104	155	305	428	801	216	191	83	114	231	90	162	:	78	215	136	111	323	:	73	:	:	:	:	:	:	:	:	231	182	:	:	257	:	5541
	Merseyside	168	:	:	138	101	292	752	193	:	56	154	46	108	89	:	114	169	:	:	:	:	:	:	:	:	:	:	:	:	60	81	:	:	350	:	3604
Yorkshire and The Humber	East Yorkshire and Northern Lincolnshire	258	176	:	330	272	249	247	597	282	364	620	286	247	176	139	252	196	291	:	:	184	:	:	:	:	:	:	:	:	109	208	:	153	:	:	7269
	North Yorkshire	211	85	:	151	82	88	132	170	612	63	261	89	156	:	:	:	75	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	2814
	South Yorkshire	148	223	:	61	53	144	48	115	81	673	233	137	80	80	54	58	99	146	152	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	3243
	West Yorkshire	325	559	91	160	117	116	125	275	108	147	1,503	215	184	56	84	147	221	176	70	139	:	101	52	:	127	:	237	:	:	:	68	:	:	58	:	5233
East Midlands	Derbyshire and Nottinghamshire	92	98	:	247	150	167	93	300	83	307	296	1,414	337	107	50	182	167	332	136	154	52	97	146	:	220	286	198	:	:	109	82	:	:	:	:	6334
	Leicestershire, Rutland and Northamptonshire	111	71	192	288	88	199	144	182	46	97	183	240	1,839	112	150	276	325	716	382	272	98	345	214	166	223	347	255	92	:	:	59	215	:	:	:	:	8375
	Lincolnshire	125	:	:	91	:	80	:	112	54	74	73	223	140	552	33	47	65	422	56	181	:	:	117	:	:	:	123	:	:	:	:	:	:	:	:	:	3165
West Midlands	Herefordshire, Worcestershire and Warwickshire	:	:	:	236	129	68	63	61	:	96	155	127	234	26	1,251	209	180	240	80	109	53	198	161	70	140	117	234	50	:	:	189	212	:	:	:	:	5153
	Shropshire and Staffordshire	76	88	:	150	170	127	125	39	:	44	180	164	248	37	144	1,213	252	313	123	154	44	250	79	131	174	165	238	:	:	:	100	135	:	:	249	:	5519
	West Midlands	138	122	41	153	88	122	91	73	28	99	157	115	250	24	222	215	1,289	141	108	126	49	283	153	71	162	234	209	66	:	95	157	151	:	:	97	:	5408
Eastern	East Anglia	:	:	:	247	135	187	:	:	181	53	202	294	204	843	311	272	313	382	3,023	359	307	169	704	328	78	136	234	161	:	:	:	203	:	:	:	:	:	10252
	Bedfordshire and Hertfordshire	:	:	:	110	:	142	:	:	:	48	47	39	159	11	72	38	108	259	958	117	45	256	158	85	118	171	129	:	:	:	:	90	:	:	:	:	:	3462
	Essex	:	:	:	:	:	:	:	:	:	:	94	86	400	61	116	183	193	706	279	1,094	141	402	303	148	172	237	199	:	:	:	:	135	:	:	:	:	:	5817
London	Inner London	:	:	:	:	:	:	:	:	:	:	:	:	111	:	25	:	53	92	216	129	26	36	56	58	55	:	202	:	:	:	:	72	:	:	:	:	:	1196
	Outer London	:	:	:	86	:	:	:	:	:	:	31	37	187	:	50	150	209	139	197	220	127	1,111	137	159	170	156	194	83	:	:	:	72	:	:	:	:	:	3914
South East	Berkshire, Buckinghamshire and Oxfordshire	:	:	:	96	:	:	:	:	:	66	:	45	149	14	150	43	130	150	112	111	95	273	1,008	116	192	274	269	72	:	95	39	109	:	:	:	:	:	4092
	Surrey, East and West Sussex	:	:	:	:	:	:	:	:	:	:	:	:	95	:	35	111	51	16	17	29	39	117	157	667	156	118	44	43	:	:	:	:	:	:	:	:	:	1904
	Hampshire and Isle of Wight	:	:	:	:	:	:	:	:	:	:	131	77	230	:	118	166	189	87	109	110	:	144	115	188	1,335	133	301	189	:	161	67	90	:	:	:	:	:	4463
	Kent	:	:	:	:	:	:	:	81	:	:	125	227	404	42	157	165	282	288	219	186	102	255	215	154	165	1,030	202	112	:	:	:	70	:	:	:	:	:	5393
South West	Gloucestershire, Wiltshire and Bristol/Bath area	:	:	:	96	:	165	80	:	:	86	99	111	164	38	236	79	150	81	148	49	60	321	294	70	195	181	2,192	297	129	395	306	239	:	:	:	:	:	6628
	Dorset and Somerset	:	:	:	:	:	:	:	:	:	:	:	:	63	:	61	76	78	:	:	:	:	255	107	63	274	95	350	870	74	127	106	60	:	:	:	:	:	3065
	Cornwall and Isles of Scilly	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	58	47	247	187	:	30	:	:	:	:	:	896
	Devon	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	75	:	:	:	:	:	:	:	71	:	242	107	128	804	:	21	:	:	:	:	:	1945
Wales	West Wales and The Valleys	:	:	:	60	41	97	42	67	:	:	:	39	59	:	212	80	150	107	:	:	:	60	95	:	60	:	210	38	:	:	999	371	:	:	:	:	:	3211
	East Wales	:	:	:	87	59	157	129	67	:	:	114	58	101	:	198	139	195	99	47	72	:	60	98	:	121	134	173	47	72	61	368	713	:	:	:	:	:	3686
Scotland	North Eastern Scotland	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	343	97	158	189	:	1161
	Highlands and Islands	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	57	331	209	202	:	1241
	Eastern Scotland	110	173	140	105	74	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	214	265	1,922	926	:	5692
	South Western Scotland	53	140	159	126	161	117	306	176	:	:	105	:	:	:	:	69	171	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	301	248	727	2,081	:	5946
Northern Ireland	Northern Ireland	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	109	183
	Subtotal	3,190	3,161	2,288	5,851	4,223	4,383	3,658	4,126	2,446	3,240	5,881	4,731	7,954	2,047	4,524	5,240	6,165	8,715	4,368	4,346	1,638	6,085	4,582	2,688	4,857	4,969	7,240	2,817	1,061	2,691	3,739	4,195	1,369	1,284	5,394	7,114	186	

': = none recorded in the sample or not available due to small sample size

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Notes & definitions

Source: Continuing Survey of Road Goods Transport (Great Britain)

Department for Transport statistics
Road Freight Statistics

Table RFS0140
Goods moved by region and country of origin and destination, 2015
UK activity of GB registered heavy goods vehicles

Million tonne kilometres

NUTS1	Origin NUTS2	North East: Tees Valley and Durham	North East: Northumberland and Tyne and Wear	North West: Cumbria	North West: Greater Manchester	North West: Lancashire	North West: Cheshire	North West: Merseyside
North East	Tees Valley and Durham	497	238	99	105	:	:	:
	Northumberland and Tyne and Wear	143	1,285	44	:	:	:	:
North West	Cumbria	60	26	577	:	166	:	:
	Greater Manchester	88	:	:	1,462	175	152	143
	Lancashire	:	:	91	206	1,527	80	177
	Cheshire	:	:	136	207	148	556	132
	Merseyside	:	:	:	203	181	172	756
Yorkshire and The Humber	East Yorkshire and Northern Lincolnshire	240	:	:	372	290	145	259
	North Yorkshire	187	141	126	180	65	:	:
	South Yorkshire	192	107	:	116	65	68	49
	West Yorkshire	176	105	:	124	124	132	127
East Midlands	Derbyshire and Nottinghamshire	103	:	:	216	146	133	129
	Leicestershire, Rutland and Northamptonshire	289	:	:	266	212	151	170
	Lincolnshire	:	:	:	:	:	:	:
West Midlands	Herefordshire, Worcestershire and Warwickshire	:	:	:	185	132	126	128
	Shropshire and Staffordshire	:	:	230	142	151	158	180
	West Midlands	:	:	:	94	97	26	87
Eastern	East Anglia	:	:	:	290	:	:	:
	Bedfordshire and Hertfordshire	:	:	:	:	:	:	:
	Essex	:	:	:	:	:	:	:
London	Inner London — West	:	:	:	:	:	:	:
	Inner London — East	:	:	:	:	:	:	:
	Outer London — East and North East	:	:	:	:	:	:	:
	Outer London — South	:	:	:	:	:	:	:
	Outer London — West and North West	:	:	:	:	:	:	:
South East	Berkshire, Buckinghamshire and Oxfordshire	:	:	:	:	:	:	:
	Surrey, East and West Sussex	:	:	:	:	:	:	:
	Hampshire and Isle of Wight	:	:	:	:	:	:	:
	Kent	:	:	:	:	:	:	:
South West	Gloucestershire, Wiltshire and Bristol/Bath area	:	:	:	:	:	:	:
	Dorset and Somerset	:	:	:	:	:	:	:
	Cornwall and Isles of Scilly	:	:	:	:	:	:	:
	Devon	:	:	:	:	:	:	:
Wales	West Wales and The Valleys	:	:	:	:	:	63	:
	East Wales	:	:	:	74	86	101	99
Scotland	North Eastern Scotland	:	:	:	:	:	:	:
	Highlands and Islands	:	:	:	:	:	:	:
	Eastern Scotland	237	165	216	:	120	:	:
	South Western Scotland	81	210	200	200	231	175	:
Northern Ireland	Northern Ireland	:	:	:	:	:	:	:
	Subtotal	3090	3517	2609	5256	4622	3090	3588

NUTS1	Origin NUTS2	Yorkshire and The Humber: East Yorkshire and Northern Lincolnshire	Yorkshire and The Humber: North Yorkshire	Yorkshire and The Humber: South Yorkshire	Yorkshire and The Humber: West Yorkshire	East Midlands: Derbyshire and Nottinghamshire	East Midlands: Leicestershire, Rutland and Northamptonshire	East Midlands: Lincolnshire	West Midlands: Herefordshire, Worcestershire and Warwickshire	West Midlands: Shropshire and Staffordshire	West Midlands: West Midlands
North East	Tees Valley and Durham	242	358	113	200	99	256	:	:	:	:
	Northumberland and Tyne and Wear	:	49	:	63	:	:	:	:	:	:
North West	Cumbria	:	74	:	:	:	:	:	:	197	:
	Greater Manchester	147	126	71	154	124	196	:	55	137	120
	Lancashire	142	117	73	155	67	258	:	:	148	78
	Cheshire	130	:	31	189	69	79	:	126	184	85
	Merseyside	171	:	:	133	90	142	:	214	206	114
Yorkshire and The Humber	East Yorkshire and Northern Lincolnshire	1,150	345	363	398	499	357	224	:	258	266
	North Yorkshire	150	795	104	240	93	136	:	:	:	:
	South Yorkshire	217	122	489	172	188	164	53	:	147	129
	West Yorkshire	241	153	199	1,074	149	324	39	80	221	104
East Midlands	Derbyshire and Nottinghamshire	286	130	175	158	918	286	113	149	292	160
	Leicestershire, Rutland and Northamptonshire	138	:	167	339	195	1,796	146	197	336	352
	Lincolnshire	116	:	57	57	126	199	651	:	:	:
West Midlands	Herefordshire, Worcestershire and Warwickshire	:	:	:	182	162	208	:	1,358	190	243
	Shropshire and Staffordshire	215	:	115	233	246	272	:	179	1,809	268
	West Midlands	76	:	104	18	152	177	:	220	207	1,752
Eastern	East Anglia	191	:	318	216	342	601	234	239	315	313
	Bedfordshire and Hertfordshire	:	:	:	:	47	118	49	64	78	57
	Essex	:	:	:	:	99	368	:	:	:	313
London	Inner London — West	:	:	:	:	:	18	:	:	:	:
	Inner London — East	:	:	:	:	:	20	:	:	:	:
	Outer London — East and North East	:	:	:	:	:	90	:	:	:	:
	Outer London — South	:	:	:	:	:	:	:	:	:	:
	Outer London — West and North West	:	:	:	:	:	44	:	:	:	68
South East	Berkshire, Buckinghamshire and Oxfordshire	:	:	:	:	77	169	35	94	141	96
	Surrey, East and West Sussex	:	:	:	:	:	:	:	:	:	:
	Hampshire and Isle of Wight	:	:	:	:	:	124	:	157	113	149
	Kent	:	:	:	:	217	453	83	185	:	247
South West	Gloucestershire, Wiltshire and Bristol/Bath area	:	:	:	:	95	200	:	190	207	144
	Dorset and Somerset	:	:	:	:	:	:	:	65	:	:
	Cornwall and Isles of Scilly	:	:	:	:	:	:	:	:	:	:
	Devon	:	:	:	:	:	95	:	:	:	:
Wales	West Wales and The Valleys	:	:	:	:	109	:	:	72	279	118
	East Wales	:	:	:	:	:	151	:	94	211	170
Scotland	North Eastern Scotland	:	:	:	:	:	:	:	:	:	:
	Highlands and Islands	:	:	:	:	:	:	:	:	:	:
	Eastern Scotland	:	:	:	:	:	:	:	:	:	:
	South Western Scotland	:	:	:	208	:	:	:	:	:	:
Northern Ireland	Northern Ireland	:	:	:	:	:	:	:	:	:	:
	Subtotal	4789	3752	3261	4817	4928	7962	2422	4558	6595	6457

NUTS1	Origin NUTS2	Eastern: East Anglia	Eastern: Bedfordshire and Hertfordshire	Eastern: Essex	London: Inner London — West	London: Inner London — East	London: Outer London — East and North East	London: Outer London — South	London: Outer London — West and North West	South East: Berkshire, Buckinghamshire and Oxfordshire	South East: Surrey, East and West Sussex	South East: Hampshire and Isle of Wight	South East: Kent
North East	Tees Valley and Durham	:	:	:	:	:	:	:	:	:	:	:	:
	Northumberland and Tyne and Wear	:	:	:	:	:	:	:	:	:	:	:	:
North West	Cumbria	:	:	:	:	:	:	:	:	:	:	:	:
	Greater Manchester	:	:	:	:	:	:	:	:	:	:	:	:
	Lancashire	:	:	:	:	:	:	:	:	:	:	:	:
	Cheshire	:	:	:	:	:	:	:	:	:	:	:	:
	Merseyside	:	:	:	:	:	:	:	:	:	:	:	:
Yorkshire and The Humber	East Yorkshire and Northern Lincolnshire	233	:	:	:	:	:	:	:	:	:	:	:
	North Yorkshire	:	:	:	:	:	:	:	:	:	:	:	:
	South Yorkshire	311	:	:	:	:	:	:	:	:	:	:	:
	West Yorkshire	48	:	:	:	:	:	:	:	:	:	:	:
East Midlands	Derbyshire and Nottinghamshire	333	126	105	:	:	227	:	:	162	:	:	281
	Leicestershire, Rutland and Northamptonshire	464	254	445	46	106	246	:	95	308	177	210	345
	Lincolnshire	228	115	:	:	:	:	:	:	163	:	:	145
West Midlands	Herefordshire, Worcestershire and Warwickshire	214	:	:	:	:	:	:	:	207	:	135	197
	Shropshire and Staffordshire	333	120	:	:	:	:	:	:	223	:	83	197
	West Midlands	303	47	139	:	:	95	:	:	155	:	171	135
Eastern	East Anglia	2,743	298	381	:	95	264	:	75	315	:	97	311
	Bedfordshire and Hertfordshire	205	1,359	121	16	28	93	:	114	130	66	60	104
	Essex	741	302	820	64	80	112	51	141	264	190	124	200
London	Inner London — West	29	37	25	49	12	26	3	42	58	36	:	22
	Inner London — East	:	15	80	9	469	80	6	12	:	5	:	29
	Outer London — East and North East	119	100	117	43	46	1,021	17	21	53	45	:	157
	Outer London — South	:	:	38	13	13	8	67	39	28	63	:	25
	Outer London — West and North West	47	49	66	30	26	30	21	247	107	89	54	43
South East	Berkshire, Buckinghamshire and Oxfordshire	135	113	72	38	:	108	16	167	1,248	109	212	144
	Surrey, East and West Sussex	:	28	49	17	17	20	48	41	134	898	183	101
	Hampshire and Isle of Wight	124	50	89	:	:	:	:	25	160	216	990	100
	Kent	461	145	200	65	116	134	89	102	235	257	139	1,038
South West	Gloucestershire, Wiltshire and Bristol/Bath area	147	151	:	:	:	:	:	96	303	:	222	264
	Dorset and Somerset	:	:	:	:	:	:	:	:	112	:	124	95
	Cornwall and Isles of Scilly	:	:	:	:	:	:	:	:	:	:	:	:
	Devon	:	:	:	:	:	:	:	:	:	:	77	:
Wales	West Wales and The Valleys	:	:	:	:	:	:	:	:	:	:	:	:
	East Wales	:	:	:	:	:	:	:	:	:	:	:	:
Scotland	North Eastern Scotland	:	:	:	:	:	:	:	:	:	:	:	:
	Highlands and Islands	:	:	:	:	:	:	:	:	:	:	:	:
	Eastern Scotland	:	:	:	:	:	:	:	:	:	:	:	:
	South Western Scotland	:	:	:	:	:	:	:	:	:	:	:	:
Northern Ireland	Northern Ireland	:	:	:	:	:	:	:	:	:	:	:	:
	Subtotal	8430	4166	3968	1282	1257	3209	515	1810	5376	2776	3650	4879

NUTS1	Origin NUTS2	South West: Gloucestershire, Wiltshire and Bristol/Bath area	South West: Dorset and Somerset	South West: Cornwall and Isles of Scilly	South West: Devon	Wales: West Wales and The Valleys	Wales: East Wales	Scotland: North Eastern Scotland	Scotland: Highlands and Islands	Scotland: Eastern Scotland	Scotland: South Western Scotland	Northern Ireland: Northern Ireland	Subtotal
North East	Tees Valley and Durham	:	:	:	:	:	:	:	:	196	198	:	3448
	Northumberland and Tyne and Wear	:	:	:	:	:	:	:	:	239	146	:	3089
North West	Cumbria	:	:	:	:	:	:	:	:	250	221	:	2617
	Greater Manchester	:	:	:	:	:	36	:	:	:	292	:	4446
	Lancashire	:	:	:	:	:	44	:	:	304	298	:	4470
	Cheshire	:	:	:	:	140	89	:	:	:	134	:	3319
	Merseyside	:	:	:	:	135	110	:	:	:	:	:	4143
Yorkshire and The Humber	East Yorkshire and Northern Lincolnshire	:	:	:	:	:	265	:	:	:	:	:	7436
	North Yorkshire	:	:	:	:	:	:	:	:	:	:	:	3550
	South Yorkshire	:	:	:	:	:	:	:	:	:	:	:	3431
	West Yorkshire	:	:	:	:	:	:	:	:	:	:	:	4626
East Midlands	Derbyshire and Nottinghamshire	316	:	:	:	:	:	:	:	:	:	:	6053
	Leicestershire, Rutland and Northamptonshire	380	166	:	:	:	85	:	:	:	:	:	8953
	Lincolnshire	:	:	:	:	:	:	:	:	:	:	:	3084
West Midlands	Herefordshire, Worcestershire and Warwickshire	243	149	:	:	82	95	:	:	:	:	:	5313
	Shropshire and Staffordshire	338	:	:	:	108	238	:	:	:	:	:	6857
	West Midlands	176	:	:	:	188	127	:	:	:	:	:	5415
Eastern	East Anglia	284	:	:	:	:	:	:	:	:	:	:	9352
	Bedfordshire and Hertfordshire	80	:	:	:	:	:	:	:	:	:	:	3460
	Essex	199	:	:	:	:	:	:	:	:	:	:	5243
London	Inner London — West	:	:	:	:	:	:	:	:	:	:	:	648
	Inner London — East	:	:	:	:	:	:	:	:	:	:	:	933
	Outer London — East and North East	115	:	:	:	:	:	:	:	:	:	:	2662
	Outer London — South	:	:	:	:	:	:	:	:	:	:	:	424
	Outer London — West and North West	54	:	:	:	:	:	:	:	:	:	:	1247
South East	Berkshire, Buckinghamshire and Oxfordshire	236	:	:	:	:	:	:	:	:	:	:	3983
	Surrey, East and West Sussex	:	:	:	:	:	:	:	:	:	:	:	2179
	Hampshire and Isle of Wight	185	88	:	84	:	100	:	:	:	:	:	3366
	Kent	184	178	:	:	:	:	:	:	:	:	:	5365
South West	Gloucestershire, Wiltshire and Bristol/Bath area	1,876	274	224	434	308	175	:	:	:	:	:	6316
	Dorset and Somerset	374	916	:	70	:	40	:	:	:	:	:	2664
	Cornwall and Isles of Scilly	105	:	339	238	:	:	:	:	:	:	:	990
	Devon	243	29	196	801	:	:	:	:	:	:	:	2157
Wales	West Wales and The Valleys	217	146	:	:	1,142	226	:	:	:	:	:	3260
	East Wales	219	71	:	:	325	650	:	:	:	:	:	3358
Scotland	North Eastern Scotland	:	:	:	:	:	:	682	46	150	253	:	1456
	Highlands and Islands	:	:	:	:	:	:	109	825	238	306	:	1745
	Eastern Scotland	:	:	:	:	:	:	351	290	1,564	666	:	5175
	South Western Scotland	:	:	:	:	:	:	144	194	573	1,986	:	5507
Northern Ireland	Northern Ireland	:	:	:	:	:	:	:	:	:	:	364	522
	Subtotal	6717	2976	1331	2547	3409	3242	1755	1585	5219	6353	497	

':' = none recorded in the sample or not available due to small sample size

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Notes & definitions

Source: Continuing Survey of Road Goods Transport (Great Britain)