

Rail freight interchange facilities for South Holland District

Summary report

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Intermodality

in association with

IGS

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1 Introduction

1.1 Background

- 1.1.1 The interest in securing rail freight access to the Spalding area has arisen from work by Intermodality LLP with the “CSR-Rail” working party of the UK’s leading retailers, who have in recent years been assessing ways to increase use of rail freight within the retail supply chain. When asked in 2006 where the national rail network was deficient in terms of rail freight interchanges, Spalding was considered by the retailers to be one of the key “missing links.”
- 1.1.2 From this, and in connection with research for other projects at the time, a dialogue was initially opened in 2006 with the University of Lincoln’s Food Campus in Holbeach, which led in July 2006 to discussions with Gist and other local distributors with premises in the Spalding area. Background discussions then progressed towards meetings in August and October 2007 with the local authorities and the University.
- 1.1.3 In May 2008 the parties agreed to sponsor some initial research by The University of Lincoln, which highlighted the scale of road traffic related to the local food processing and distribution sector and the potential for converting some longer-distance flows to rail. Subsequent discussions with South Holland District Council suggested that the University of Lincoln findings represented only a proportion of the total volume of road traffic generated by this sector.
- 1.1.4 The District Council then engaged with other authorities, including Lincolnshire County Council, The Regional Assembly, East Midlands Development Agency, Lincolnshire Enterprise and Network Rail (the Client group), to consider the extent to which there would be support for development of a local rail freight interchange. Network Rail has raised no objections to the principle of an interchange being created (subject to demonstrating operational and engineering viability), and development of facilities which encourage modal shift of freight to rail would be in line with European, national and regional policy.

1.2 Remit

- 1.2.1 The absence of any local rail-linked processing or distribution facilities constrains the opportunities to promote modal shift from road to rail in line with national and regional policies. There is concern that a lack of local facilities may, in turn, lead to employers relocating from Spalding to other regions or countries with better connectivity. There are also concerns that creating a rail-linked development, with interchange / processing / distribution facilities, might lead to localised concentrations of HGV traffic and visual / noise impacts on the local community, or could have negative impacts on local road hauliers.
- 1.2.2 The initial scoping discussions over the last three years suggest an opportunity may exist to create a rail-linked ‘hub’ to serve the Spalding and surrounding area of South Holland. However, if the Client group is to further commit to the principle of development in policy terms, a more robust evidence base is now required, from which to address key issues related to need, locational factors and deliverability. Such evidence will not only be critical to any future policy support, it will also be important in attracting financial support from public sector grants and/or private-sector inward investment.
- 1.2.3 This report contains the key findings of the study, together with our conclusions and recommendations.

2 Market research

2.1 National trends in fresh produce

- 2.1.1 According to the Institute of Grocery Distribution (IGD), fresh produce accounts for around one-fifth of UK consumer grocery spend, and the UK retail industry (taken to include multiples, independents, foodservice and wholesale) seeks to both respond to and influence changing consumer preferences.
- 2.1.2 A range of factors affect the “food chain”:
- Consumer choice / trends – growing interest in organic food, local produce and “5 portions per day”;
 - Dominance of major retailers – the development of Efficient Consumer Response (ECR), through initiatives such as commodity trading and Factory Gate Pricing (FGP);
 - Quality assurance – the need for greater visibility and transparency in the supply chain, more stringent controls on temperature in transit to maximise shelf life;
 - Transport – the impact of congestion, the Working Time Directive, labour shortages and lorry bans;
 - Production and distribution facilities – existing ‘legacy’ sites may not offer the range / quality / location to suit modern customer needs, with the trend towards larger sites constrained by available land;
 - Dispersed / fragmented local supply networks, with work by agricultural co-operatives to address this.
- 2.1.3 UK food retailers are amongst the most sophisticated in the world and the demands which they place on their suppliers, particularly their suppliers of own label produce, render the British food manufacturing industry one of the most efficient and innovative in the world.
- 2.1.4 The role of fresh produce in the strategies of the major supermarkets has changed dramatically over the past ten years. The growing importance of the fresh produce category has led to vertical co-ordination and the steady move towards fewer larger suppliers operating in dedicated (if not exclusive) supply chains for specific supermarket customers.
- 2.1.5 Improved supply chain integrity and greater consistency in the quality of fresh produce, coupled with the need to squeeze costs out of the supply chain, through greater control (either directly, through grower/co-operative partnerships or indirectly, through pre-packers with their own grower networks) has resulted in the rationalisation of the supply base, with retailers dealing with fewer, larger, technically efficient and innovative suppliers.
- 2.1.6 In the face of increasing public awareness and concern about environmental issues and claims of supermarket profiteering, the major retailers are also keen to demonstrate a greater sense of corporate responsibility and sustainability. Examples from retailer websites include programmes for CO2 reduction in transport fleets, use of gas and biofuels, and use of rail (Tesco, Asda, M&S).
- 2.1.7 The emergence of retailer / supplier “alliances” has sought to boost UK production by shifting emphasis from continental imports to UK domestic sourcing, eg Asda and Kent Cox apples, Ayrshire potatoes sold in most of Asda’s Scottish stores, Tesco sourcing all Cox apples from UK, all cauliflowers from Cornwall (previously imported from Spain) and supply of strawberries from Kent. Some of these alliances have seen local suppliers developing into regional or national suppliers, consolidating other products either from the surrounding area and/or supplementing these with imported products.

2.2 National trends in distribution and rail freight

- 2.2.1 Britain's economy has become increasingly dependent on road haulage to distribute goods, for long-distance and local deliveries. The sustainability of this approach is now being challenged not only by road congestion and the wider operational and commercial pressures on road-based distribution, but also by concerns from business and society about climate change.
- 2.2.2 The Corporate Social Responsibility (CSR) policies of major companies are now increasingly focussed on means to promote more sustainable business methods, such as Marks & Spencer's 'Plan A', Tesco's latest CSR report indicating that use of rail has saved the company 2,900 tonnes of CO₂ per annum over 2006. Logistics companies such as Eddie Stobart are responding in turn, with a recent press statement indicating the company wishes to move 10% of its volume by rail.
- 2.2.3 In making the distribution element of business more sustainable, business will need to seek alternative and more efficient means of transport, as well as to develop more space- and energy-efficient distribution development. In this regard, the environmental impact of rail transport is significantly lower than for road transport, with Government policy guidance suggesting that:
- Rail freight generates between 8% and 12% the level of emissions of road freight per tonne-kilometre, with the exception of Sulphur Dioxide (SO₂) where road is 30% the level of rail;
 - Per tonne moved, road produces nearly three times the CO₂ produced by rail transportation;
 - Per tonne carried, road transport requires around 4 times more energy than rail.
- 2.2.4 Since privatisation of the railway industry in the mid-1990's, rail freight traffic has seen a dramatic turnaround. This is in part related to the comprehensive framework of Government policies, creating conditions favourable to the planning and development of rail freight.
- 2.2.5 Rail freight traffic has now grown by more than 60% since the mid-1990's, with major shipping lines, manufacturers, retailers and distributors now use rail as an integral part of their supply chains, and are looking to increase the volume of goods moved by rail.
- 2.2.6 In terms of the fresh produce market, almost all traffic had been diverted from rail by the time of rail privatisation in the mid 1990's, due to the rationalisation of the freight network and attendant problems with rail transit times, service reliability and price, but since then the retailers have returned chilled and ambient products to rail, examples in recent years including:
- Asda moves frozen produce in refrigerated containers between Tilbury and Wakefield, and moves chilled and ambient products between Daventry, Grangemouth and Aberdeen;
 - Morrisons use rail between the Midlands, North West and Scotland;
 - Tesco moves ambient products in 3 dedicated trains, operating between Daventry, Grangemouth and Inverness, with plans to expand this network to other routes across the UK;
 - Fyffes has this year trialled the movement of bananas by rail in refrigerated containers from Portsmouth.
- 2.2.7 More recently, two new cross-Channel rail services have commenced, targeted at the fresh produce sector:
- Bakkavor (a major local employer in Spalding) has commenced using a Norfolk Line train between Novara (Italy) and the Midlands (Hams Hall), conveying melons in temperature-controlled swap bodies. Satellite 'track and trace' is provided and the temperature is continuously monitored throughout. The service has achieved a 100% reliability record to date. Bakkavor's Inbound Logistics Manager Neil Horner (a respondent to the market research on this project) has said in a press release that:

"Bakkavor is committed to reducing the carbon footprint associated with its operations, this trial represents a small but very significant step forward."

- DB Schenker and Stobart Rail have launched a weekly rail service from Valencia (Spain) to Barking (London), carrying Spanish fresh produce in temperature-controlled swap bodies over the 1,100 mile route. The service is expected to save 13.7 million kilometres of road journeys and 8,625 tonnes of CO₂ emissions annually.

2.2.8 In response from a request from Government for a robust single industry view about future rail freight growth, the Freight Transport Association, the Rail Freight Group and the Rail Freight Operators Association have produced forecasts, based on a combination of market research and demand forecasting. The forecasts, as quoted by Network Rail in its Freight Route Utilisation Strategy (RUS) 2007, suggest rail freight tonnes lifted growing by around 30% from 2004/5 to 2014/5, with the non-bulk sector (eg food, drink and other consumer goods) expected to triple, thus accounting for most of the additional growth.

2.2.9 The Government's last White Paper on the railways in 2007 endorsed these industry forecasts as realistic, and in turn set out a long-term ambition for a railway that can handle double today's level of freight and passenger traffic. Government has confirmed the importance of rail freight in delivering significant environmental benefits over other modes (saving 6.74 million lorry journeys and 122 billion lorry kilometres in 2005/6). Noting constraints on the rail network, the Government has committed £200m towards development a Strategic Freight Network with Network Rail – Spalding is located on one of the proposed key routes in this network.

2.2.10 Government and industry forecasts predict that the majority of future rail freight traffic growth will occur in the non-bulk sector of the freight market. However, unlike the bulk freight market, most of the rail freight interchanges for non-bulk traffic were lost between post-war rationalisation and the subsequent privatisation of the rail network in the mid-1990s.

2.2.11 In the absence of such interchange facilities, the non-bulk freight market has evolved around road-based distribution parks (eg Magna Park in Leicestershire). These parks are often located at some distance from the nearest practicable railhead, necessitating relatively long collection and delivery (C&D) movements by road, which then impacts on the commercial and operational viability of rail within the supply chain.

2.2.12 To demonstrate the theoretical impact of improved rail connectivity on breakeven distance, research undertaken for EMDA suggests that (our highlighting):

“...cost comparisons show that, as a general rule of thumb, rail freight moved in full trainload quantities, including grant funding, is cost competitive with road haulage in the following circumstances:

- For flows from a non rail-connected origin to a non rail-connected distribution centre (a road haul is required at both ends of the journey), rail freight becomes cost competitive at distances **over 400km**;
- For flows from a rail connected origin e.g. container port, to a non rail connected distribution centre (eliminating one road haul), rail freight becomes cost competitive with road transport at distances **over 200km**;
- For flows from a rail connected origin e.g. container port, to a rail connected distribution centre (no road hauls), rail freight generally is **always cost competitive** compared to road transport over any given distance given adequate volume to fill a daily train.”

2.2.13 Government policy guidance indicates that improved Rail Freight Interchange (RFI) facilities will be key to promoting a shift of goods onto rail. Forecasts in the Government's policy on Strategic RFI indicate that the greater the availability of rail-linked warehousing, the higher the forecast rail freight tonnage.

2.2.14 An analysis of all inland Rail Freight Interchanges for non-bulk traffic in Great Britain shows the current provision as 34 existing and 22 additional sites either consented or proposed. These 56 sites in total account for more than 4,300 Ha of land and 9.5 million square metres of associated distribution floorspace. The East Midlands region is home to 16% of the existing RFI floorspace and 39% of the additional consented / proposed floorspace, reflecting the region's prime position for national distribution.

2.3 Regional context

The East Midlands property market

- 2.3.1 Distribution and warehouse functions are generally located in areas that have easy links to the national motorway network and a diverse and immediate labour pool. The regional distribution market is therefore concentrated along the M1, M69, A1 and A14.
- 2.3.2 As with elsewhere in the country, the East Midlands B8 market has seen a substantial decrease in take up in the last 12 months. The amount of available floorspace within the East Midlands increased by 4.6% in the last 6 months of 2008.
- 2.3.3 The last 12 months has seen a cessation of speculative schemes (following significant spike in completed speculative space), which is expected to continue for the next few years. Developers and investors are focussed on letting existing void buildings. At end of January 2009, there was a total of 15,000 m² (162,000 ft²) under construction across six schemes in the East Midlands, which represents a 91% reduction since July 2008.
- 2.3.4 The total number of speculative buildings (> 930 m²) currently available in the region totals approximately 530,000 m² (5,700,000 ft²), the locations of which reflect the established B8 development nodes along major access routes. Up to 40% of individual speculative buildings available are under 100,000 ft², 46% in buildings between 100,000 ft² and 300,000 ft² and the remaining space comprising over 300,000 ft².
- 2.3.5 The increasing importance of distribution / logistics to the East Midlands economy has seen the emergence of a number of sites with planning permission for B8 or a number of new speculative developments in recent years. Examples of these sites are outlined below. Any demand for large scale B8 accommodation in Spalding is likely to have been attracted to alternative locations along A1/A14, such as Peterborough (32km south of Spalding) where supply is available through speculative developments. This has accentuated the lack of supply in Spalding for reasons of its poorer access and perceived relative remoteness.

Rail freight interchanges

- 2.3.6 The East Midlands benefits from access to the Strategic RFI at Daventry (DIRFT), located on the border of the East and West Midlands and which serves both regions. DIRFT is generally regarded as Britain's most successful SRFI, located alongside the M1 motorway and the West Coast Main Line, with provision for intermodal and conventional wagonload traffic, and adjacent warehousing, some of which has integral rail links.
- 2.3.7 DIRFT1 covers a 174 Ha greenfield site, and of the total permitted floorspace of 390,646m², around 17% (66,100 m²) is rail-linked, the three units operated by DHL (2) and the Malcolm Group (1). DIRFT 2 is a phased expansion on a site of 53.8 Ha, with outline consent for 180,740m² of warehouse, distribution and industrial development, of which some 90% will be designed with provision for direct rail connections from the existing DIRFT reception sidings. This would take the combined development at DIRFT to a total floorspace of 571,400m², with around 40% of this capable of direct rail connection. A further phase is under consideration, which could add as much as 800,000m² of additional floorspace.
- 2.3.8 At least 2,600 people are employed on site, and the proposals for DIRFT2 (see below) are anticipated to generate a further 1,600 jobs once the expansion land is fully developed out.
- 2.3.9 The intermodal terminal, or "Railport", covers 5.5 Ha and is operated by WH Malcolm. The Railport has 5 x 750m long reception sidings (for holding trains arriving from / departing onto the West Coast Main Line), and 4 x 375m handling sidings, each capable of holding half a full-length intermodal train for loading and unloading by a fleet of mobile cranes ("reachstackers").
- 2.3.10 DIRFT has therefore developed into a thriving SRFI, stimulating the local economy and employment market, and fostering 12 freight trains per day through the site, from deepsea ports, mainland Europe, London and Scotland.

2.3.11 Closer to Spalding, the nearest rail freight interchange at Ely (70 km to the south east) currently provides 20,400m² (220,000 ft²) of distribution/storage accommodation. Traffic passing through the site includes paper, panel boards, textiles, aggregates, white goods, packaged animal feeds, food and beverages.

2.3.12 The East Midlands Regional Spatial Strategy has responded to the opportunities for rail freight interchanges by incorporating a specific policy on land for Strategic Distribution Uses, with a priority on allocating sites which can be served by rail freight, and operate as intermodal terminals.

Location and demographics

2.3.13 The South Holland Local Plan provides the starting point for setting the area in context, noting that:

- South Holland covers 74,238 hectares, consisting almost entirely of fenlands. The area is of national agricultural significance, with 80% of the land being of Grade 1 quality;
- This has produced an economy highly dependent on certain industries, with a large proportion of the workforce employed in the agricultural, food processing and distribution industries. The road haulage distributors located in South Holland are intimately linked to food production. As a distribution centre of food produce the District is also of national significance. Unemployment rates are low, but there is a consensus that economic diversification is required to secure this trend in the long term;
- A Rural Action Zone (RAZ) has been created to deliver integrated solutions to the area's economic weaknesses. Increasing accessibility, both for passengers and freight, is a main priority;
- The workforce is relatively low skilled, as shown by 10.2% being qualified to degree level or higher compared to an average in England and Wales of 19.8% (2001 Census). Wages are currently (2006) low at 18% below the national average;
- The region has a great capacity to develop biomass energy production, mainly through energy crops, poultry litter and straw. The high agricultural waste production in the area represents a relatively untapped resource;

- The A1073 links the area with Peterborough, and is renowned for traffic congestion and a poor safety record. Between 1986 and 1997 the A17 experienced a 54% increase in traffic flow on some sections of carriageway, compared to a national average of 40%, and as such was the busiest route in the area. Traffic growth continues, and between 2000 and 2004 the level of growth on major roads in the District averaged between 15% and 19%. The A1073 is currently being realigned and upgraded and will open throughout in summer 2010.

2.3.14 The location of B8 distribution development is influenced by the accessibility to major trunk roads and motorway junctions and proximity to a large labour pool, as outlined in the East Midland Strategic Distribution Study (November 2006). On this basis, the relative remoteness of the Spalding area and its low density of population, leads to a lack of demand as a distribution destination.

2.3.15 Spalding is accessed by the A16 (north-south) and A151 (east-west). The A1, which links with the M18, M1 and M25 motorways, is 20 miles west.

2.3.16 The relative distances from Spalding to key communication nodes and regional urban centres, highlights the existing access issues that deter any significant distribution development, apart from that which is necessary to service the local food industry.

2.3.17 South Holland is made up of 5 towns, with one of the sparsest populations in the East Midlands (82,600 persons; ONS 2007 estimate). Approximately a third of the District's population live in Spalding. The average population density is 107 people per km compared to 207 per km for the wider East Midlands area and 380 per km for England as a whole. Population growth (27% between 1982 and 2002) is dominated by the inward migration of retired population and migrant workers in the food processing industry.

2.3.18 56% of the population is of working age. Occupational profiles are dominated by commuting professionals and varying skills occupations associated with the local food industry. Food-related producers and suppliers are attracted to the area by the benefits of an agglomeration economy and the associated easy cross-over of existing local skills in this sector.

Land values

- 2.3.19 An analysis of industrial land values is difficult given current market conditions, where the availability of comparable land sale transactions is extremely limited. The current economic turmoil has had a significant effect on land values through reduced occupational demand, yield shift, decline in rental values, lack of availability of finance, withdrawal of exemption for void rates on vacant property (which is likely to prevail beyond the current recession) and general market sentiment.
- 2.3.20 Values for commercial employment land (suitable for B8) in the South Holland area are inevitably lower than the wider East Midlands region, due to the comparative remoteness and lack of access. Equally, evidence of notable employment land transactions in the area is infrequent, even in a buoyant market.
- 2.3.21 Land values in the Spalding area, assuming serviced and planning permission for B8 use, are in the region of £210,000 - £310,000 per hectare (as at Spring 2009), depending on size and location.
- 2.3.22 Land values at more established industrial locations in the region (large scale B8 plot sizes), justified by more immediate access to trunk roads, motorways and population, are as follows (December 2008):
- Mansfield £500,000 per hectare;
 - Nottingham £800,000 per hectare;
 - Derby £740,000 per hectare;
 - Leicester £865,000 per hectare.
- 2.3.23 Note values were considerably in excess of these at the peak of the market in 2007.
- 2.3.25 The area is dominated by the outward distribution of indigenous and internationally-sourced fresh, processed or packaged products, much of the produce having been imported from abroad and transferred to this area for value-added packaging before further distribution inland.
- 2.3.26 A cluster of large scale manufacturing facilities, which incorporate packing and storage (including chilled) functions, are located along West Marsh Road, Spalding. Established occupiers include Fowler Welch, Bakkavor, Christian Salvesen Food and British Sugar Corporation.
- 2.3.27 The requirements for large-scale storage at the production source is generally limited as the goods form part of multiple supply chain strategies, predominantly driven by retailers, whereby they are transferred to a regional distribution centre (RDC), which then re-distributes to the regional hinterlands within a specific dwell time envelope. On this basis, there are very few B8 industrial transactions of note in the immediate area, with limited demand for large-scale development.
- 2.3.28 The majority of B8 units available within an approximate 15 mile radius of Spalding are under 470m² (5,000 ft²) and used predominantly for storage. The availability of new units or new build opportunities for B8 is also predominantly under 470m². Properties in the area greater than 1,400m² (15,000 ft²) are generally second hand and often incorporate packing / chilling facilities. B1/B2 industrial accommodation, with only ancillary B8 function, dominates the >1,400m² market.
- 2.3.29 Spalding, Boston and Wisbech are similar-sized centres which dominate supply in the immediate area, particularly for new builds. However, whilst distribution of supply is irregular, the relative take-up (in percentage terms) in the various localities is similar, driven by quality, age and specification of building available to match a specific requirement as opposed to a preferred location.

Local B8 market

- 2.3.24 Government statistics show a total of 960,000 m² (10.3m ft²) of industrial floorspace in South Holland on 240 Ha of land, the majority (57%) in factories, the balance in warehousing (35%) and other bulk industries (8%). Local demand for B8 uses is generally of a smaller scale, associated with the local food produce manufacturing sector, with very short dwell times and emphasis on the capacity for cold storage.
- 2.3.30 From the market research amongst local business (see below), Spalding stands out as the preferred site for a rail freight interchange.

- 2.3.31 In identifying demand for a new large-scale distribution park, the requirements are invariably dominated by manufacturers/suppliers as opposed to distribution operators. Such operators are then driven by an identified sustainable need, large enough to make a dedicated logistics function viable. The nature of the local produce, in terms of short dwell times and perishable goods, would require a consortium of local companies to provide this scale of demand (see market research results below).
- 2.3.32 In turn, the commercial property market is almost entirely bespoke to the needs of the niche local market. Given the area currently lacks the attributes to deliver a buoyant B8 market, a significant shift of emphasis from road to rail would be required in the mindset of local producers, suppliers and end-retailers (see market research results below), to justify a major development focussed on rail access and B8 use.
- 2.3.33 There have been no recent transactions in the local area which would be comparable to new build B8 accommodation associated with an interchange facility. It would be reasonable to expect achievable rents of new stock to be in excess of existing accommodation, which is mostly secondary, and such rents would need to be at a level to achieve viability. Occupiers would need to accept this new rental level.
- 2.3.34 Some of the operator/producer demand would require new cold store facilities, which are considerably more costly to construct. Rental levels for new build cold stores are a function of build cost rather than market value and therefore anticipated rental levels would be significantly higher. Evidently however, the level of this uplift would have to strike a sufficient compromise with any associated up front restructuring costs incurred by those locally based operators / producers committing their operation to the use of rail.

2.4 Market research

- 2.4.1 The initial research undertaken by the University of Lincoln covered a sample of the major organisations moving food-related products to and from the Spalding area, in terms of the volume and regional distribution of heavy goods vehicle (HGV) traffic. We have made an initial estimate of the potential for converting some of the longer-distance flows into equivalent trainloads, as set out in Table 1 below.
- 2.4.2 The Spalding area currently has no active rail freight interchange, the nearest operational interchanges being at Ely (Potter Group), DIRFT and Doncaster (Freightliner), some 70, 120 and 130km distant respectively. The only significant rail freight access locally previously linked into a cold store, an unnamed depot and the former sugar beet factory (which closed in 1989), all connected by a spur into the Spalding – Boston line which ran along the south bank of Vernatt’s Drain, as shown in Figure 1 below.
- 2.4.3 In response to initial in-principle interest from the CSR-Rail retailer working party in securing rail freight access to Spalding, a sample of organisations was contacted, drawing from major retailers, their suppliers and third-party logistics operators, focused on key decision-makers in management of operational and/or property-related aspects.
- 2.4.4 A questionnaire was produced, containing structured questions and “free form” responses. The objective was to identify as far as possible the respondent’s commercial / operational position within the supply chain, the volume and distribution of transport-related activity (eg daily / weekly volumes to key origins and destinations outside the South Holland area) and any current challenges or opportunities which might favour modal shift to rail.

Table 1 Sample of existing food-related HGV traffic to/from Spalding and potential for rail freight

Destination	HGVs each way per day	Equivalent trainloads (30 HGVs each)	Assumed rail capture, trains per day each way	km per HGV round trip	Assumed inland rail terminals	Assumed delivery km†	Net HGV km savings per day‡
Scotland	114	3.8	2	1100	Mossend, Grangemouth	80	61,000
North West England	219	7.3	1	420	Trafford Park, Ditton	80	10,200
North East England	74	2.5	1	550	Teesport	80	14,100
East & West Midlands	268	8.9	1	290	Hams Hall, DIRFT, BIFT	80	6,290
Greater South East*	448	14.9	1	320	Willesden, Tilbury	80	7,200
South West England & Wales	179	6.0	1	580	Avonmouth, Exeter	80	15,000
Total per day	1,302	43.4	7				113,990
Total per annum¶							28,500,000

* Defined as London, the South East and East of England, likely to include traffic to/from mainland Europe

† In order to achieve a robust view of net mileage savings through use of rail, compared to using road haulage door-to-door, it is assumed that an element of local road collection and delivery will still be required at either or both ends of the rail haul, which is then subtracted from the door-to-door HGV km per round trip to arrive at a 'net' reduction in HGV km

‡ Based on [trains per day each way] x [30 HGV loads per train] x [km per HGV round trip – assumed delivery km]

¶ Based on 250 working days per annum

Figure 1 Former rail freight facilities in Spalding (aerial photo source Google Earth)



2.4.5 Table 2 below summarises the views of respondents to the survey:

Table 2 Summary market research findings

Company	Type	Potential interest in rail to/from South Holland	Potential interest in new facilities on rail freight interchange
Fowler Welch Coolchain	Logistics	Yes	Yes
Norbert Dentressangle	Logistics	No	No
Russell Group	Logistics	Yes	Don't know
Turners of Soham	Logistics	No	No
Wincanton	Logistics	Yes	Yes
Yearsley	Logistics	No	No
Asda	Retailer	Yes	Don't know
Boots	Retailer	No	No
Co-operative Group	Retailer	Yes	Don't know
Marks & Spencer*	Retailer*	Yes	Don't know
Morrisons	Retailer	Yes	Don't know
Sainsburys	Retailer	Yes	Yes
Tesco	Retailer	Yes	Don't know
Bakkavor	Supplier	Yes	Yes
Birds Eye	Supplier	Yes	No
Mars Food UK	Supplier	No	No
Premier Foods	Supplier	Yes	Yes

* Questionnaire completed by M&S logistics provider Gist, on request from M&S

2.4.6 The results of the market research have provided a considerably higher level of support from end users than would normally be anticipated at this stage for a conceptual and speculative interchange proposal. The principle of using rail services (and as such the development of interchange facilities) to and from South Holland is supported by 17 (70%) of the sample, of which 5 (30%) have potential interest in securing added-value facilities on any local rail freight interchange.

2.4.7 This level of support may be explained by the high volumes of freight traffic generated to and from the area, the long-distance nature of many of the HGV trips, the quality of the road links, and the influence of the major retailers in their growing usage of, and interest in, rail transport within their supply chains.

2.4.8 Emerging clusters where rail should be capable of competing with road haulage from Spalding include Scotland, North West, Yorkshire, South East, South West and mainland Europe. The connecting rail routes from Spalding are shown on the map in Figure 2 below, which also provides an indication of distance, which can be compared with the breakeven distances for rail as outlined in paragraph 2.2.12 earlier in this report.

2.4.9 Table 3 below sets out data from a sub-set of the total sample (ie those which provided suitable traffic data), which whilst not providing an indication of the total traffic potential, gives an indication of the relative distribution of traffic per week.

Figure 2 Longer-distance rail freight opportunities from Spalding



Table 3 Market research from selected respondents - weekly HGV volumes and equivalent trainloads via Spalding

Destination	HGVs trips each way per week (from selected respondents)		Equivalent trainloads per week (30 HGVs per train)	
	From Spalding	To Spalding	From Spalding	To Spalding
Scotland	300	50	10.0	1.7
North West England	120		4.0	
North East England	270	85	9.0	2.8
Yorkshire & Humberside	356	80	11.9	2.7
Midlands	285	60	9.5	2.0
South East England	390	165	13.0	5.5
South West England	369	65	12.3	2.2
Wales	30		1.0	
Mainland Europe		35		1.2
Various		300		10.0
Total per week from selected respondents	2,120	840	70.7	28.0
Total per day (based on 6 working days per week)	353	140	11.8	4.7

2.4.10 Apart from the strong degree of support, another distinct characteristic of the findings is the relatively close catchment area for interest in rail freight, with a number of respondents indicating either a strong preference to use a rail service and interchange in close proximity to Spalding, and/or a lack of interest for using interchanges in the surrounding area, such as Ely and the proposed development at Peterborough.

2.4.11 This may reflect the current quality of the onward road links from Spalding, and the decision on whether to promote a new rail freight interchange local to Spalding will depend in part on progress with third-party proposals such as Magna Park Peterborough in the interim, and the likelihood of substantive improvements being achieved to the connecting highway network, noting that the latter may in itself encourage the existing freight movements to remain on road.

2.4.12 It is important to note that this strong interest in modal shift at an interchange in the Spalding area cannot be taken for granted as a permanent situation. Should progress not be achieved in the short term with any new local interchange facilities, retailers, distributors and consolidators will investigate and implement alternative solutions to combine greater efficiencies and improved sustainability, including technical developments such as using double-deck trailers.

2.4.13 In terms of guiding downstream areas of the study, the market research findings suggest that the type of interchange development which might be anticipated is unlikely to have the regional catchment area or role which might be expected from a 'Strategic' rail freight interchange such as DIRFT, as defined in national and regional policy guidance.

- 2.4.14 However, any interchange would nonetheless be critical locally to creating opportunities for modal shift of freight to rail, which would otherwise be less likely to be achieved by interchanges outside of the immediate area. Furthermore, as the economics of rail freight are optimised where both ends of the freight flow are directly rail-linked, so a local rail freight interchange would (on the strength of the market research) be anticipated to at worst retain and at best attract further business activity, either industrial (eg processing) or distribution (ie storage) in nature.
- 2.4.15 In seeking to estimate the potential level of added-value development on or around a rail freight interchange, if the response from Wincanton is taken as representative, the five companies indicating interest in locating on site would then produce a combined requirement for 45,000m² (480,000 ft²) of floorspace, equating to an 11 Ha footprint, together with 12.5 Ha of additional open storage space and the 5.5 Ha nominal area for the interchange itself, a combined total of 29 Ha. The extent to which this would provide a robust guide to any initial allocation of land for such purposes would need to be tested further with both prospective occupiers and the Local Development Framework.

3 Specification of interchange facilities

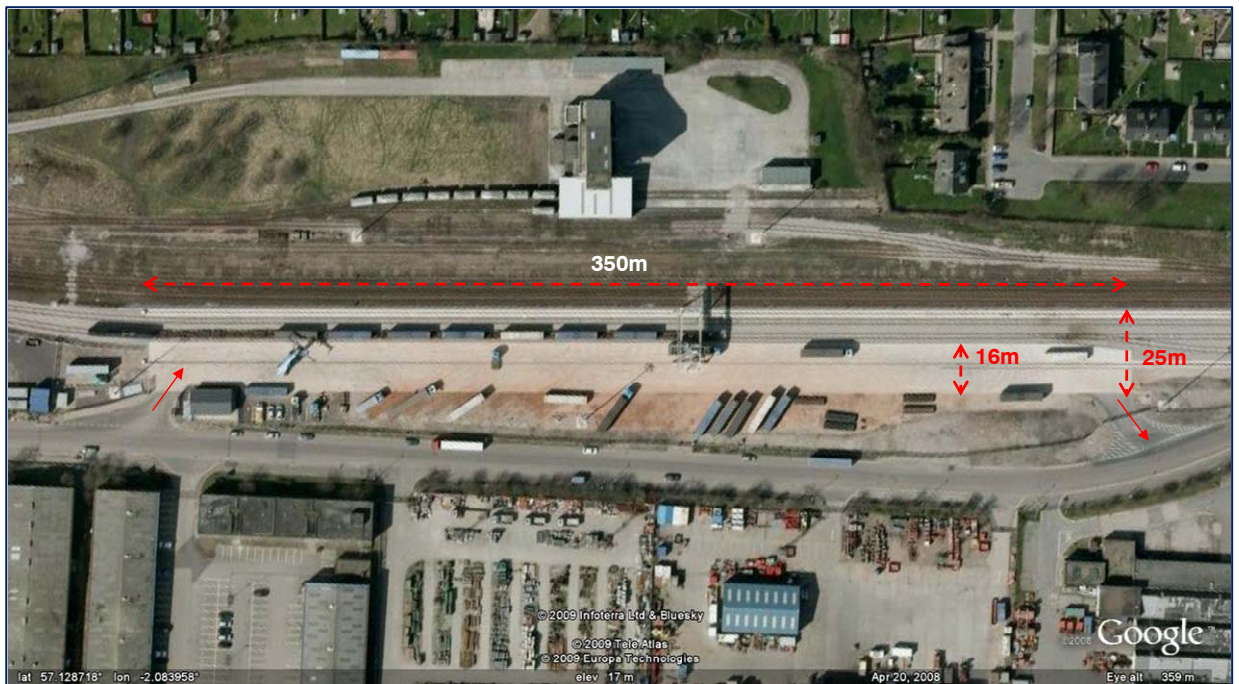
3.1 Working assumptions

- 3.1.1 At the most basic level, a rail freight interchange can be effected with an area of open hardstanding with adjacent road and rail access. Beyond this basic facility, additional development may be provided on site for value-added storage, processing and associated management functions.
- 3.1.2 In order to provide an indicative range of outcomes, working assumptions have been produced on the possible specification of rail freight interchange facilities. Two scenarios have been identified to cover the anticipated range of possibilities, as follows:
- 'Basic' rail freight interchange, with road and rail access, handling apron and office accommodation, with a nominal footprint of 1-5Ha;
 - 'Integrated' rail freight interchange, as above plus 200,000 m² (2 million ft²) of associated industrial / distribution floorspace, within a nominal footprint of 50-60Ha.
- 3.1.3 The interpretation of the market research findings, with an initial estimate of some 29Ha of land, would therefore sit towards the centre of this range.
- 3.2.3 A 'Portakabin' type building might typically be provided to accommodate office and staff amenities, with suitable fencing and lighting to prevent unauthorised access into the site or to the main line.
- 3.2.4 Assuming a green field site with no existing main line or highway connections, an interchange of this size might be anticipated to cost in the order of £15m (£10m for 2 x main line connections, £5m for construction of the interchange and highway access). A basic facility of this nature would, at best, cover its operating costs (typically £20-25 per container lift), and in the absence of any associated 'value added' activities such as warehousing facilities on site, public-sector 'pump priming' funding (eg a Freight Facilities Grant) would be required to support the construction costs.
- 3.2.5 Subject to spacing of trains to and from the site, and with sufficient handling equipment and staff, a basic interchange of even 1 Ha (see below) should be capable of handling 2-4 trains per 24 hours, the equivalent of 80-160 HGV loads. By comparison, the intermodal terminal at DIRFT, at 5.5 Ha, handles 10 trainloads per day.

3.2 Basic rail freight interchange

- 3.2.1 The basic facility provides a simple interchange between road and rail. The facility should provide sidings of sufficient length and layout to permit a freight train (ideally between 550-750m in length) to enter or depart the site in one manoeuvre, to avoid any part of the train blocking the main line.
- 3.2.2 Similarly, highway access should enable goods vehicles to enter or depart the site in a single manoeuvre, to avoid causing queues or other safety hazards to other road users. Hardstanding between rail and road should be provided to permit safe movement and storage of goods vehicles and handling equipment for goods or complete intermodal units (eg containers or swap bodies).

Figure 3 Rail freight interchange, Aberdeen (aerial photo source Google Earth)



Case study – Aberdeen (1Ha, intermodal terminal)

- 3.2.6 Figure 3 above shows how a basic facility has recently been constructed in Aberdeen, on a constrained site located between a parallel main line and highway route. The site is connected to the main line at either end, enabling trains to access the site from either direction of travel. The two main line connections are spaced some 850m apart, enabling a train of up to 720m length to be accommodated within the site, which can then be split between two sidings alongside a central handling apron 350m in length and 16m in width (25m over the apron and adjacent sidings), a total footprint of around 1 Ha.
- 3.2.7 Road access is provided at each end of the site, which permits a one-way flow of road vehicles through the site, avoiding the need for a wider apron which would otherwise be necessary for articulated HGVs to turn within the site itself (a 24m diameter turning circle).
- 3.2.8 In this case, handling between road and rail is effected by an overhead gantry crane (towards the centre of the picture) and a mobile ‘reachstacker’ crane (at the left-hand end of the handling apron), which together transfer entire ‘swap body’ intermodal units between road and rail vehicles. The terminal typically handles 40 swap bodies per train, ie 20 offloaded and 20 reloaded, with each swap body representing a single HGV movement on and off the site to the local area (and a saving in the equivalent number of long-distance HGV trips from the road network).
- 3.2.9 A site of this size might typically employ 6-12 members of staff to manage the interchange activity (subject to the number of trains handled per day), with local road haulage undertaken either by additional staff based on site and/or by third-party road hauliers based locally.

3.3 Integrated rail freight interchange

3.3.1 The market research indicates interest from a number of companies in co-locating on a rail freight interchange in the local area, albeit the results do not indicate how far the associated requirements for rail-linked floorspace would approach the ‘critical mass’ necessary to achieve a commercially-viable, integrated interchange development (see also section 1.1).

3.3.2 The experience of the “freight village” concept at sites such as DIRFT demonstrates that larger, multi-faceted and integrated sites can produce more rail freight traffic opportunities than the same capacity dispersed across numerous smaller sites. This is not to imply that only large rail freight interchanges can be viable. Smaller facilities exist which offer either an intermodal terminal and/or a rail-linked distribution unit, where the traffic levels from an “anchor” customer base may be sufficient to sustain specific rail freight operations. Indeed, the East Midlands Regional Spatial Strategy acknowledges the potential role of smaller sites in Policy 21.

3.3.3 The commercial considerations which will tend towards larger sites include:

- The larger the number and size of distribution units and intermodal terminal facilities on site, the greater the opportunities for generating rail freight traffic from those locating on site;
- The on-site rail freight infrastructure and intermodal terminal facilities can involve significant up-front investment, with only marginal contributions to operating costs, which can be better absorbed by larger developments as these will form a decreasing proportion of the overall site development costs, compared to smaller sites.

3.3.4 In terms of determining the “critical mass” for an integrated rail freight exchange, the SRA’s Strategic Rail Freight Interchange Policy (March 2004, subsequently adopted by DfT as policy guidance) states that the scale of SRFI will vary considerably around the UK reflecting, inter alia, existing and potential business growth. The policy guidance cites DIRFT (147 Ha) and Hams Hall (169 Ha) as examples but indicates that in general the size range would be likely to be between 40 and 400 Ha.

3.3.5 By comparison, our analysis of all 27 existing and proposed SRFI in Great Britain indicates an average footprint of 125 Ha and floorspace of 312,000 m². The guidance also indicates that a valuable characteristic is the need for expansion potential.

3.3.6 This threshold has subsequently been adopted by developers in undertaking alternative sites assessments. Developers at Howbury Park, for example (see below), adopted a minimum 40 Ha threshold for the consideration of alternatives and concluded that below this, it would not be possible to achieve a scale of development to accommodate an appropriate rail layout, and a sufficiently large intermodal area and rail-linked warehouse development without prejudicing viability.

3.3.7 Elsewhere, a higher threshold has been adopted. A local authority report in the North West, for example, provides a useful summary of third-party calculations in this area:

“The scale of SRFI and the critical mass required to provide an economically viable rail freight destination which meets the needs of industry is not precisely defined. However, the criteria for providing successful regional freight interchange facilities in the Freight Interchange Policy, and the evidence put forward by SKM on behalf of Burford and the Council in respect of Trafford Interchange, which has been corroborated by the evidence put forward by others including MDS Transmodal in respect of Port Salford and Ditton, which was accepted by the Inspector at the Halton UDP Inquiry, point towards the following requirements:

(i) The need to provide a range of major warehousing and manufacturing buildings, directly served by rail, including buildings of between 30,000 -100,000m². The ability to provide buildings of at least 30 to 50,000m² is regarded as essential;

(ii) A critical mass of rail served warehousing to support infrastructure costs, and to provide economies of scale for occupiers, of between 200,000 to 300,000m² of rail served warehousing, the exact level of which will be influenced by the existence of existing major rail freight businesses with existing regular rail service.”

3.3.8 Research undertaken for the EMDA suggests 200,000m² of rail served floorspace would equate to a developable site area of 50 Ha, and similar research undertaken for the West Midlands Region itself refers to the 50 Ha threshold for regionally-significant sites:

“In our view, a competitive site is one which is at least 50 Ha in size. Scale is material to competitiveness; achieving a critical mass is crucial. This analysis clearly shows that there is a relationship between the size of a site and the competitiveness of that site. In many ways ‘the bigger the better’, and 50 Ha should be seen as the absolute minimum, rather than a target average size or a maximum size. It is for this reason that a region is best served by a handful of large sites instead of a larger number of small sites.

There are a number of good reasons for this:

- The accommodation of a series of very large warehouses (up to 100,000m²)
- The flexibility to provide expansion opportunities to existing occupiers
- Planning efficiency – approximately the same amount of effort, time and expense may be incurred in trying to seek planning permission for a 50 hectare site and a 150 hectare site
- Infrastructure costs – economies of scale can be gained from any infrastructure which is required
- Infrastructure efficiency – maximising the usage of investment in road, rail and utilities infrastructure
- The generation of full length train services
- The overall environmental impact may well be less.”

Case study – Howbury Park (64 Ha, intermodal terminal and rail-linked warehousing)

- 3.3.9 The above assumptions are borne out by experience with the ProLogis Howbury Park interchange development in South East London (consented in 2007) which provides for 198,000m² of rail-linked floorspace, a 3.4 Ha intermodal terminal, and siding space for 775m length trains, within a 63.8 Ha site. Overall, the site is anticipated to employ up to 2,400 people.
- 3.3.10 The site, a former quarry and landfill within London’s Green Belt, is located adjacent to the North Kent main line and a dual-carriageway highway link to the M25 motorway. The site would be connected to the main line through reinstating a disused spur off an existing train maintenance depot, which has main line connections in both directions of travel. Road access would be provided via a connection into an existing roundabout, thence via a lifting bridge over a navigable waterway into the site’s internal estate road layout.
- 3.3.11 The masterplan for the site (Figure 4 below) provides for sufficient siding length to accommodate trains of up to 750m in length (albeit trains on the adjacent main line are currently limited to 512m), which would then be split into shorter length sidings for unloading and reloading. The site will have both an intermodal terminal (with 2 gantry cranes supplemented by reachstackers) as well as direct siding access to all of the four warehouses on site, which range from 13,500m² to 102,000m² (145,000 – 1.1m ft²), with the largest unit capable of being subdivided into smaller units if required.
- 3.3.12 The site is designed to handle up to 12 trains per day of 512m length (or the equivalent volume of goods), the plans anticipating primarily intermodal trains (9) with the balance (3) consisting of “conventional” rail wagons serving the rail-linked warehouses on site. Timetable studies undertaken for ProLogis have identified capacity on the main line for these extra 24 trains per day, despite the line handling more than 400 passenger and freight trains at present.

Figure 4 Howbury Park proposed masterplan (photo source ProLogis website)



3.3.13 This level of rail freight traffic is estimated to equate to around 760 HGV loads per day (about 30 per train each way on average) removed from the national road network, whilst the site itself is estimated to generate some 2,000 HGV trips per day to and from the local area. By comparison, the proposed Radlett interchange on the opposite side of the M25, with 330,000m² of rail-linked floorspace, is estimated to generate some 3,000 HGV trips per day.

3.3.14 Although there are overall savings on HGV use on the regional and national network road networks, there is an intensification of use around the development. This will be accommodated by the construction of a new access road and amendment to a roundabout on the existing dual carriageway. There will also be associated studies and monitoring to measure the impact on the M25 motorway.

3.3.15 Based on DIRFT (which latterly has itself handled up to 12 trains per day) an interchange site of this size might typically employ up to 20 members of staff to manage the interchange activity (subject to the number of trains handled per day), with local road haulage undertaken either by additional staff based on site and/or by third-party road hauliers based locally.

3.4 The influence of local market conditions on interchange size

- 3.4.1 The “critical mass” threshold for a new rail freight interchange, whether a basic or integrated facility, will depend upon local conditions – for example:
- A new single-siding, 420m length railhead for Portsmouth Commercial Port, utilised two existing main line connections on Network Rail land protected for rail freight purposes, costing less than £1m to develop, the majority of this covered by DfT and EC/RDA grant funding;
 - The new 9 Ha Telford rail freight interchange, which required reinstatement of a main line connection and a 4km branch line into the site (involving a Transport & Works Order process) has cost £8m, funded by ERDF, Telford & Wrekin Council, English Partnerships and Advantage West Midlands;
 - The Howbury Park development referred to above will not require a brand new main line connection, and with scope for 200,000m² of floorspace (including provision for a single large unit if required) and relatively high underlying rental values in the South East, should be capable of covering its development costs without grant support.
- 3.4.2 The market research indicates support for at least a basic interchange facility, able to handle trains upwards of 520 metres in length, with some respondents indicating potential interest in co-locating on site to minimise or avoid road movements to and from the rail interchange, and/or to consolidate traffic into trainload quantities (ie upwards of 20-30 articulated HGV loads each way) on site. This implies that an area of at least 5.5Ha needs to be identified, surrounded by an area for associated development and future expansion. The latter needs to reflect the emerging level of demand, and the capacity of the local employment pool and infrastructure to adequately service the activity to, from and on the site.

4 Assessment of key local impacts

4.1 Introduction

- 4.1.1 Subject to scale, location and design, a new interchange development may have a range of impacts on the local community and environment, such as:
- Increase in local investment and employment, both direct on site and indirect in the surrounding area;
 - Retention or relocation of activity from existing sites in the surrounding area;
 - Reduction in long-distance HGV traffic to and from the local area and associated emissions;
 - Localised increase in road vehicle activity to and from the site and associated emissions;
 - Localised visual, noise and ecological impacts arising from construction and operation of the site;
 - Increased rail traffic on the main line.

4.2 Direct employment effects

- 4.2.1 As well as serving other industries, distribution (also known as logistics) is also an important sector of the economy in its own right, accounting for around 5% of gross domestic product, generating annual revenues of around £75 billion. As one of the world's oldest trading nations, the UK is now one of the world's leading countries in supply chain management.
- 4.2.2 Up to 2.5 million people are employed in distribution across the UK, representing the fifth largest sector of the UK job market. Data provided by the Office of National Statistics indicates that distribution employment has increased by approximately 1 million in the past 30 years compared to a decrease of 4 million in the manufacturing sector. Skills for Logistics has suggested that up to 10-12% of jobs in most regions are logistics-related.
- 4.2.3 In terms of employment densities, a series of research studies over recent years have sought to quantify the number of job opportunities typically associated with strategic warehouse developments. The results of these studies appear to show a trend towards an increase in employment densities within such developments.

4.2.4 For example, the 2001 English Partnerships' guide to employment densities recommends standard employment densities for general warehousing of 1 job per 50 m² whereas larger warehousing is responsible for 1 job per 80m². As an example, ProLogis has estimated that Howbury Park, at 198,000m² could generate up to 2,400 jobs on site (ie 1 job per 82.5m²).

4.2.5 A smaller study undertaken by King Sturge and the Cranfield School of Management surveyed 45 strategic distribution units of more than 10,000m² and estimated a density of one job per 95m². A study by warehouse developer ProLogis relating to 33 occupied distribution units in excess of 10,000m² indicated an average density of 1 job per 95m². A 2006 survey of the Magna Park distribution park in Leicestershire found an average floorspace per job of between 80 and 90m², but noted a wide variation across individual warehouses from 40-330m² per job.

4.2.6 However, an example of more recent research is a study undertaken by Savills which concludes that there has been substantial change in almost every aspect of the industry, from policy and regulation to the specification of warehouses, which have become more diverse to meet the storage requirements of the relevant sectors. Savills conclude that this change in operational characteristics is creating higher employment densities and this conclusion is supported by the results of a further study undertaken by Atis in 2007 and a second study undertaken by RETRI Group that both identify employment densities for B8 of one job per 60m² in larger warehouses.

4.2.7 Further comparisons with other traditional employment uses can be found in a study undertaken by Reading University, which in comparing distribution and manufacturing activities in warehouses throughout the UK, found that the B8 workforce was, on average per site, 40% greater than the non-B8 (in their study, 178 employees vs. 128.)

Table 4 Employment densities for distribution development

Source	Date	Survey	Employment density (m ² per job)		
			Minimum	Maximum	Average
Arup (for English Partnerships)	2001	Guidance	N/A	80	50
King Sturge / Cranfield University	2003	45 strategic distribution units of more than 10,000m ²	N/A	N/A	95
ProLogis Developments	2005	33 occupied distribution units in excess of 10,000m ²	N/A	N/A	95
Magna Park	2006	Survey of distribution park	330	40	85
RETRI	2006	100 sites totalling 2m m ²	59	43	51
Atisreal	2007	Industry survey	60	43	51

4.2.8 Another study by Savills has considered employment ratios in 50 warehouses built since 1996, concluding that for three out of four size categories, the distribution warehouses employed more people per square metre than B1c (light industrial) or B2 (general industrial). Further research by Atis suggests employment densities for B8 (51m² per employee) being greater than for B2 uses (84m²).

4.2.9 These various studies are summarised above in Table 4 to provide an indication of the range of employment densities that might be expected in distribution-based development. In the context of this study, it should be noted that in some cases any value-added development alongside a rail freight interchange may span both 'distribution' and 'industrial' in nature.

4.2.10 The relatively anonymous nature of distribution development creates perceptions of a relatively low-skilled workforce. However, Atis research cites surveys undertaken by ProLogis across 6,000 people employed in 32 warehouses developed by the company, which gave the following skills profile;

- Skilled workers 36%;
- Semi-skilled workers 24%;
- Office workers 23%;
- Drivers 12%;
- Others 5%.

4.2.11 In a Cranfield University survey of large warehouses in the UK, 18% of workers were classified as managerial, administrative or support staff, along with 68% as warehouse staff, 13% as drivers and 1% as "other".

4.2.12 The West Midlands Regional Logistics Study (2005) noted that:

"A commonly held perception of the logistics sector is that it creates low value/low skill employment comparable to 'supermarket shelf stacking. This perception is incorrect, and many positions within the sector now require a variety of skill levels..."

4.2.13 The Greater London Authority further suggests that the cross-section of B8-related jobs can play an important community role:

"Warehousing and logistics also have the potential to contribute to social inclusion by providing a range of employment opportunities at different skills levels and typically within, or close to, areas of relative deprivation."

4.2.14 In terms of relative wage rates, research by Atis suggests weekly earnings for the B8 sector compare favourably with B1c and B2, as follows:

- B2 (general industrial) £497;
- B8 (distribution) £486;
- B1c (light industrial) £444.

4.2.15 Modelling by Atis suggests that, in the East Midlands region, a 13,595m² (150,000ft²) development (a typical size for any anticipated demand in the Spalding area) would generate the following comparative effects depending on use, as shown in Table 5 below.

Table 5 Comparison of development uses (source Atis)

Contribution	B8	B1c	B2
Employment created on site	323	325	166
Earnings over 5 years (£m), East Midlands Region	£33m	£29m	£17m

4.3 Indirect employment effects

- 4.3.1 As well as the direct employment effects of a development on site, there is also the potential for indirect employment opportunities to be created in the surrounding hinterland, both during construction and subsequently once a site is operational.
- 4.3.2 Indirect employment would normally be estimated using multipliers derived from research on similar operations elsewhere to reflect the specific characteristics of the development, the amount of spending retained in the local area and local labour and market conditions. For Howbury Park (South East London) a combined employment multiplier of 1.2 was used to reflect both indirect and induced employment for the relatively small catchment area, while a multiplier of 1.4 was assumed to reflect regional job impacts.

4.4 Effect on existing business

- 4.4.1 The extent to which rail freight access would impact positively or negatively on existing or future business activity in Spalding can be considered through the following evidence gained from the market research exercise, with 12 of the 17 companies which responded expressed interest in using rail services to and from Spalding, of which 5 expressed interest in co-locating business activity on any local rail freight interchange in the Spalding area.
- 4.4.2 Indeed, it is apparent from the market research that a number of rail-linked distribution developments are being proposed elsewhere in the East Midlands and adjoining regions. Such developments, with direct rail access to mainland Europe and the UK regions, could over time attract processing or distribution activity away from the Spalding area, which would then continue to be served by road vehicles as at present.

- 4.4.3 Whilst there are major disincentives to moving premises, including lease commitments, staff retention and exit / set-up costs, one of the companies interested in using rail to and from Spalding has indicated that should a rail freight interchange not be established locally, there is a risk that the company would relocate elsewhere.
- 4.4.4 Premier Foods represents an example of this, where the interchange activity between road and rail takes place at DIRFT, 130 km away, rather than closer to the source of the traffic at Wisbech. Unlike the nearest railhead at Ely, DIRFT benefits from a critical mass of freight activity from the site itself and the surrounding area, which has fostered a network of multi-user rail services. This enables end users such as Premier Foods to access rail services with as little as 1-2 loads per day, compared to the 30 or more loads which would otherwise be needed to justify a new rail service. Ely by contrast now has a single weekly service from the port of Harwich, having recently lost its twice-weekly feeder service to and from London.
- 4.4.5 The example of Premier Foods above not only represents a marginal lost opportunity for generating economic activity in the local area (around £20K per year in handling revenue), but also a significant lost opportunity for modal shift, as 1-2 HGV loads per day between Wisbech and DIRFT represents over 120,000 HGV trip-km per annum. If a rail freight interchange and suitable rail services were to be developed in the Spalding area, the road leg from Wisbech could be reduced from 130km down to 36km.

4.5 Road vehicle traffic generation

Introduction

- 4.5.1 The traffic generation from both the smaller basic and the larger integrated interchange can be estimated by reviewing both the train loads and the overall operation of the sites. Given the potential use it is relevant to consider both the HGV loads and the other (or light) vehicles. This is because the HGVs clearly have different travel characteristics to the lighter vehicles which tend to be employees and people servicing the sites. It should also be recalled that the trip generation tends to be localised as the vehicles, most notably HGVs, will already be on the road network somewhere. They are merely reassigned to the proposed development.
- 4.5.2 The smaller basic interchange will have fairly simple traffic patterns which can be obtained from first principles, whereas the larger integrated interchange has a number of inter-related operations.
- 4.5.3 As outlined earlier, DIRFT is the most successful rail freight interchange of its type in the UK. It has been operating for a number of years and consequently has well-established patterns of working. Surveys of the travel patterns at DIRFT have been undertaken and these have been used to derive some of the following trip characteristics. These have primarily been used for the larger integrated option, but they also provide information on the profile of HGV movements for a basic interchange.
- 4.5.5 The proposed number of daily HGV loads generated by the rail freight interchange has been estimated from data and estimates in connection with other interchange projects, based on an estimate of train movements per day. The HGV loads are the loaded vehicles only. They do not include the number of back-loaded HGVs, ie those either arriving or leaving empty to collect or deliver a load. Using information gathered at the DIRFT intermodal terminal in 2006, a factor has been calculated which, when applied to the number of HGV loads, provides the total number of HGV trips generated by the interchange. Table 6 below summarises the daily volume of HGV loads and the resulting number of HGV movements.
- 4.5.6 In order to establish the daily profile of HGV trips and therefore the occurrence of trips within the AM (0800 – 0900) and PM (1700 – 1800) peak hours, 2008 DIRFT survey data has been used. The trip profile from the DIRFT survey has been applied to the daily HGV trip generation in Table 6. Table 7 below summarises the resultant peak hour external intermodal related HGV trips to / from the interchange.

Integrated interchange option

- 4.5.4 The smaller basic interchange option is assumed to require approximately six staff on site in a 24-hour period. Given the small numbers involved it can be assumed, as a worst case, that there would be a 100% single-occupancy car driver mode share for these staff. They could therefore generate in the region of 12 two-way vehicular movements per day (ie 6 staff/vehicles in and 6 out). Given the conventional shift working pattern of 0600-1400, 1400-2200, and 2200-0600 hours it can be seen that, even allowing for this worst case assumption, the addition of these trips onto the local highway network would not be expected to have any material impact.
- 4.5.7 In order to obtain the HGV and non-HGV trip generation for the integrated interchange option, trip rates have been derived from the surveys undertaken at DIRFT in 2006 and 2008. As discussed previously, DIRFT provides an intermodal terminal with associated rail-related warehousing. It is located to the west of Junction 18 of the M1. Although its scale and location in relation to the motorway network are somewhat different to that which might be anticipated for a facility in South Holland, the patterns of operation are considered to be comparable. In respect of this it is considered appropriate to use DIRFT as the basis for deriving vehicular trip rates.

Table 6 Daily external rail-related HGV trips to / from basic interchange

HGV Trip Type	Arrivals	Departures	Total
HGV Loads	40	40	80
Back-loaded HGVs	14	14	28
Total HGV Trips	54	54	108

Table 7 Peak Hour external rail-related HGV trips to / from basic interchange

HGV Trip Type	Time Period	Arrivals	Departures	Total
HGV Loads	AM Peak	2	2	4
	PM Peak	2	2	4
Back-loads HGVs	AM Peak	1	1	1
	PM Peak	1	1	1
Total HGV Trips	AM Peak	3	2	5
	PM Peak	2	3	5

Non-HGV Trip Generation

- 4.5.8 The non-HGV trip generation is based on trip rates derived from the 2008 survey at DIRFT and an occupancy survey in 2006. The 2008 surveys have been used to calculate car driver and light goods vehicle trip rates. A vehicle occupancy factor, calculated from the 2006 survey at DIRFT, has been applied to these to create person trip rates. These rates have then been used to calculate the person trip generation for the interchange.
- 4.5.9 Table 8 below summarises the likely person trip generation for the AM peak (0800 – 0900), PM Peak (1700 – 1800) and 24 hour period.
- 4.5.10 For this study, the car driver use can be determined from Special Workplace Statistics data (2001 Census) for the surrounding region. By applying the existing car driver mode share of 63% to the person trips in Table 8 it is possible to derive the car driver and light goods vehicle trip generation as shown respectively in Table 9 and Table 10 below.

HGV Trip Generation

- 4.5.11 The HGV trips associated with any development will be generated by two sources:
 - Rail freight interchange facilities (eg an intermodal terminal); and
 - Associated warehousing.
- 4.5.12 Undoubtedly, these two elements are not exclusive of each other and there will be an element of interaction between them. Therefore, some of the trip generation will be internal and the rest is external and bound for the surrounding highway network.
- 4.5.13 The 2006 and 2008 surveys at DIRFT were undertaken at the access to DIRFT South, within which lie the intermodal terminal (Railport) and rail-linked warehousing. DIRFT South is only part of the larger DIRFT site and there are a considerable number of movements between DIRFT South and other occupiers at DIRFT.

Table 8 Non-operational person trip generation to/from integrated interchange

Time Period	Arrivals	Departures	Total
AM Peak	161	38	199
PM Peak	58	200	258
Daily	2,222	2,220	4,442

Table 9 Non-operational car driver trip generation to/from integrated interchange

Time Period	Arrivals	Departures	Total
AM Peak	101	24	125
PM Peak	37	126	162
Daily	1,398	1,396	2,794

Table 10 Light goods vehicle trip generation to/from integrated interchange

Time Period	Arrivals	Departures	Total
AM Peak	24	4	28
PM Peak	4	4	7
Daily	162	89	251

4.5.14 The 2008 survey included an HGV movement count within DIRFT South. From this it could be established that 17% of the HGVs leaving the intermodal terminal remained within the DIRFT South site. It follows that the percentage of HGVs remaining within the whole of DIRFT is likely to be much higher.

4.5.15 In order to take into consideration the internalisation of some of the rail-related HGV trips, the total rail-related HGV trip generation has been reduced by 17%, based on the evidence from the 2008 DIRFT surveys. The resulting external daily rail-related HGV trips are summarised in Table 11 below.

4.5.16 Based on the same distribution principles employed for that of the basic interchange option, Table 12 below summarises the peak hour external rail-related HGV trips.

4.5.17 In order to derive trip rates for warehouse-related HGV trips, those which originate from and are bound for the rail freight interchange have been removed from the total HGV trips surveyed at DIRFT.

4.5.18 The remaining HGVs have then been compared with the surveyed area at DIRFT to create trip rates which can be applied to the floor area of the warehousing at the proposed integrated interchange. The resultant AM peak, PM peak and daily warehouse related HGV trips for the SRFI are summarised below in Table 13.

4.5.19 The total number of HGVs for the integrated interchange can be established by adding together both the rail-related and the warehouse-related HGV trip generation. The resultant total HGV trips for the interchange are summarised in Table 14 below along with the total light goods vehicle trip generation based on the earlier Tables.

HGV Distribution

4.5.20 The assumed distribution of HGV traffic has drawn on the earlier work by Lincolnshire University, in mapping out regional origins / destinations for traffic to and from South Holland (Table 1), which can be compared with the more recent sample drawn from the market research (Table 3), as shown in Table 15.

Table 11 Daily external rail-related HGV trips to/from integrated interchange

HGV Trip Type	Arrivals	Departures	Total
HGV Loads	226	226	452
Back-loaded HGVs	81	81	163
Total HGV Trips	307	307	614

Table 12 Peak hour external rail-related HGV trips to/from integrated interchange

HGV Trip Type	Time Period	Arrivals	Departures	Total
HGV Loads	AM Peak	12	10	22
	PM Peak	9	12	21
Back-loads HGVs	AM Peak	4	4	8
	PM Peak	3	4	7
Total HGV Trips	AM Peak	17	13	30
	PM Peak	12	17	28

Table 13 Warehouse-related HGV Trips to/from integrated interchange

Time Period	Arrivals	Departures	Total
AM Peak	61	43	104
PM Peak	45	22	67
Daily	1,189	1,143	2,332

Table 14 Total Vehicular Trips to/from integrated interchange

Vehicle Type	Time Period	Arrivals	Departures	Total
HGVs	AM Peak	78	56	134
	PM Peak	57	39	95
	Daily	1,496	1,450	2,946
Light Vehicles	AM Peak	125	28	153
	PM Peak	41	130	169
	Daily	1,560	1,485	3,045

Table 15 Comparison of HGV traffic distribution, % of outbound HGVs per week from Spalding

Direction to/from	Assumed regional destinations	University of Lincoln sample	Intermodality sample	Average
North	Scotland, North East, North West, Yorkshire & Humberside	49%	31%	40%
South	South East, London, Mainland Europe	18%	34%	26%
East	N/A	-	-	-
West	Midlands, Wales, South West	32%	34%	33%

4.6 Rail traffic generation

- 4.6.1 With the exception of some diverted freight services which occasionally travel via the GE/GN Joint Line through Spalding, the route does not carry any scheduled freight services at present.
- 4.6.2 Whilst any new rail freight interchange might be anticipated to create between 1 and 12 trains per day to and from the site throughout a 24-hour period, this needs to be set against the wider context of the forthcoming upgrade by Network Rail of the Joint Line as a 'freight bypass' for the East Coast Main Line between Peterborough and Doncaster. The upgrade will then provide paths for up to 2 freight trains per hour in each direction, with Network Rail forecasting traffic levels of up to 32 freight trains per day each way by 2015 and 45 trains per day each way by 2031 (regardless of any interchange development at Spalding), in addition to the existing (or proposed) passenger services.
- 4.6.3 The role of the Joint Line could expand further still in future, as a recent statement from the Department for Transport regarding development of the Strategic (Rail) Freight Network suggests (our highlighting):
- “ To secure early diversionary and resilience benefits and provide incentives for the use of electric freight traction the SFN should consider selective strategic and infill electrification. Candidate routes are likely to include:

 - Ipswich to Nuneaton;
 - **Joint Line (Peterborough to Doncaster via Spalding);**
 - Small scale infill schemes.”
- 4.6.4 Electrification of the Joint Line might then be expected to attract improved passenger services via the route.
- 4.6.5 The projected significant increase in rail traffic levels along the Joint Line, whether a rail freight interchange is constructed or not, will create local impacts in terms of a greater number of longer trains operating through Spalding during daytime and night-time periods.
- 4.6.6 A particular issue for the Spalding area is the large number of level crossings, which then will be operating with much greater frequency than at present, which is likely to create localised traffic congestion, particularly during peak road traffic periods in Spalding itself.
- 4.6.7 The ability to remove these numerous level crossings is constrained to an extent either by the surrounding terrain (eg where underpasses might not be feasible due to the low-lying nature of the land and associated flood risk), by a lack of space to replace level crossings with overbridges, or by the considerable severance which would occur were the crossings simply to be closed altogether.
- 4.6.8 In the longer term, consideration could be given to creating a diversionary rail route around Spalding, either dedicated to freight and through passenger services, or for all rail traffic (the latter requiring a new station to replace the existing site).
- 4.6.9 Precedents exist elsewhere where 'avoiding lines' have been created, such as the 45km diversion of the East Coast Main Line (opened in 1983) around Selby to avoid mining subsidence. More recently, the £11m Allington Chord on the East Coast Main Line (two main line connections and 0.5km of track) was built to provide a new double track link between the Nottingham to Grantham, and Allington to Skegness lines, enabling Skegness services to and from Grantham to access Grantham station without having to cross over the East Coast Main Line.
- 4.6.10 To provide a rail bypass for Spalding would require at least 5km of new double-track route and, assuming the existing route through Spalding remained, would then require two new main line connections.
- 4.6.11 Cost estimates vary for new rail construction, but an indication of the range can be determined from the recent reinstatement of a disused 21km single-track route between Stirling and Alloa in Scotland, which cost £85m (ie £4m per km) and a recent estimate to reinstate a disused 12km single-track route between Lewes and Uckfield for £141m (ie £12m per km).

- 4.6.12 Notwithstanding that any diversion around Spalding would be on 'greenfield' land rather than former railway trackbeds, it would be reasonable to assume that a route across relatively flat agricultural land could be delivered by Network Rail (as opposed to a third party contractor / developer) within a range of £10-15m per km, suggesting an outturn cost of £50-60m.
- 4.6.13 Against these costs, the principal benefit of a bypass would be to significantly reduce the number of level crossings and/or crossing operations, with the associated improvements in road and rail traffic flow and safety. The Rail Safety and Standards Board (RSSB) safety risk model (SRM) shows that collisions between trains and road vehicles, and collisions between trains and pedestrians on road vehicle level crossings, respectively represent the largest categories of train accident and member of public risk (excluding trespass and suicide) on Network Rail controlled infrastructure (NRCI).
- 4.6.14 A further option would be to divert the railway from the centre of Spalding to a new alignment, to reflect the potential expansion of Spalding westwards, together with a new station. This would eliminate several level crossings through Spalding, with scope to convert the existing trackbed into a cycleway or bus route, and offer redevelopment opportunities for the existing station site and surrounding railway lands.
- 4.6.15 Our recommendation is that this issue should be discussed with Network Rail and other interested parties, to determine a more robust view on feasibility, costs and benefits. Should the concept offer potential in the medium to long term, there is scope for any new rail freight interchange to create one of the initial main line connection points for a future bypass, through suitable site identification and trackwork design. The planning and development of an interchange should where possible facilitate, or at least not prejudice, the future development of a main line bypass.

4.7 Noise, visual and ecological impacts

- 4.7.1 Distribution is a continuous activity, with a considerable amount of operations undertaken at night as well as during the day. This will apply equally to distribution facilities as to transport operations, such that a new rail freight interchange and any associated development will create potential noise and visual impacts.

- 4.7.2 The main aspects of any development that could give rise to noise and vibration are the site clearance and construction works, additional road and rail traffic (including HGV movements), operations within the development site (such as the arrival and unloading of vehicles) and building services plant associated with the new office and warehouse units.

Construction noise

- 4.7.3 Experience from other projects in relatively flat and exposed terrain, suggests that in general the average noise levels from the construction works would be unlikely to exceed the adopted limits that are normally set for construction sites. However, the worst case noise levels, which are likely to occur on only a few days when certain phases of the works are being undertaken at the closest areas of the site to nearby houses (in the case of Howbury Park, within 10 metres of the site boundary), are predicted to slightly exceed the adopted criteria. The noise impact during the construction works could therefore be significant where a site was adjacent to residential areas, albeit for a short duration.

Vibration from construction works

- 4.7.4 A comparison of the predicted vibration levels from the construction works for other projects with adopted limits reveals that there is a low probability of receiving adverse comments about vibration. As such, vibration impact from construction works is considered to be negligible.

Noise from vehicle movements

- 4.7.5 On other projects it has been found that the introduction of noise mitigation in the form of landscaped bunding around the site boundary would result in only a small increase in noise levels as a result of road vehicle movements to, from and within the site.
- 4.7.6 As with rail noise (see below), the extent to which an interchange then creates new traffic movements in the surrounding area (and associated noise) will depend on the underlying level of existing traffic across day and night-time periods, and the extent to which movements to and from the interchange represent new activity being brought into the area, or simply the "interception" of existing long-distance HGV trips which would otherwise continue to move by road to and from the local area.

Noise from train movements

- 4.7.7 Given concerns about noise impacts from the movement of trains within a site, as well as the handling of containers and other goods to and from trains, modern designs for rail freight interchanges such as DIRFT, Hams Hall and Howbury Park, seek to locate most of the rail infrastructure away from residential areas, such that the surrounding buildings or terrain provide a degree of visual and acoustic shielding.
- 4.7.8 At other sites such as ProLogis Park Coventry, and proposed developments at Corby, Parkside (North West), Radlett (M25) and Rossington (Doncaster), the rail infrastructure is placed towards the centre of the development such that it is surrounded by distribution buildings along each side, further shielding noise and visual aspects. This arrangement also offers operational benefits, in that a degree of segregation can be achieved between road vehicles, operating to and from the outward-facing sides of the buildings and rail vehicles contained in the centre of the site.
- 4.7.9 Beyond the layout of the site, additional features such as landscaping and earth bunds can be introduced to further shield an interchange development, albeit there has been debate on some projects about the extent to which extensive landscaping and bunds may be as obtrusive as leaving part or all of the development exposed.
- 4.7.10 The Howbury Park and Rossington schemes, to be created on relatively flat terrain in areas of known flood risk, provide an indication of measures which could be adopted for any integrated interchange development in the Spalding area.
- 4.7.11 The Howbury scheme acknowledged that the height and scale of the proposed buildings, combined with the topography of the area and open character of the marsh landscape, meant that planting and ground modelling treatments would never totally screen the visual impacts of the built form from all viewpoints. The design therefore aims to minimise the effects by sympathetic integration of the proposed development into the surrounding environment.
- 4.7.12 A key element of this will be the establishment of a strong landscape framework appropriate to the location. Embankments around the site (in part to create a level development plateau above the flood plain), combined with significant areas of indigenous woodland, thicket and hedgerow will help to minimise the visual impact of vehicle movements and other general low-level activity associated with such a facility.
- 4.7.13 Over time this planting should increasingly soften the impact of the buildings, and provide additional wildlife habitat. Further measures include creating a number of balancing ponds designed to include permanent wet and marginal habitat, as part of a sustainable drainage solution for the development.
- 4.7.14 The assessment of noise from rail movements on the Howbury Park project found that at the worst affected location (where sidings will be immediately adjacent and in an elevated position relative to existing housing) the increase in noise levels due to the new railway sidings would be barely perceptible and, therefore, insignificant. To provide additional mitigation at this location, an acoustic hood is proposed to be installed over the far end of the sidings to mask the noise of any locomotives.
- 4.7.15 Furthermore, because in this case the nearest dwellings are already exposed to noise from the existing main line (and an adjacent rail maintenance depot), the new sidings at Howbury would not be perceived as an alien or unusual noise source. This is an important point to note in the context of the timing and scale of any interchange development in the Spalding area, given that the main line will in any case experience a considerable increase in freight traffic in the coming years.

5 Initial site assessment

5.1 Overview

- 5.1.1 From an operational perspective, an “ideal” site for a rail freight interchange would be located on a level plot at the intersection of key road and rail routes (and other modes such as waterways or airports), close to its immediate catchment in terms of customers and employees, and remote from residential areas.
- 5.1.2 It is apparent that such criteria could not be satisfied simultaneously, particularly from a “people” perspective in being both close to employees and yet remote from residents. As an example, whilst DIRFT benefits from its strategic location between the M1 motorway and the West Coast Main Line and being relatively distant from residential areas, has as a consequence required staff to be brought in from further afield by either company shuttle buses or private cars.
- 5.1.3 A compromise must therefore be sought between the above key locational criteria, for example sites relatively close in to road and rail networks, but more distant from residential areas, the trade-off being broadly between on the one hand minimising initial development costs in terms of infrastructure connections, and on the other hand increased journey times and mileage for employees and end users (for those not co-locating on the site itself) in getting to and from the site.
- 5.2.2 A local resident made contact during the course of this study to highlight the role of Sutton Bridge as a local port facility which services local business (a role also identified in the East Midlands State of Freight Study in 2002). This suggests that scope might exist to create a tri-modal interchange facility between road, rail and water by reinstating rail access (closed in 1965) either from Spalding, Kings Lynn or March. Whilst in principle a tri-modal interchange might offer more opportunities to promote modal shift than a bi-modal facility, the considerable distance from Spalding (25km) and the nearest railway line (16km) would make such a facility too remote for those interested in using rail and too costly to consider reconnection to the network.
- 5.2.3 We have therefore focussed the site search within the Spalding area, to focus on securing rail traffic from those companies expressing interest in the short term, which in turn could then attract other companies to locate in Spalding over time. This approach then complements the catchment areas of other rail freight facilities in the surrounding hinterland, such as the existing Potter Group site at Ely (70km by road), or the proposed Magna Park site east of Peterborough (30km by road).
- 5.2.4 Broad criteria can be established from national and regional policy guidance on rail freight interchanges and rail-linked development sites, as set out in Table 16:

5.2 Initial site identification criteria

- 5.2.1 The results of the market research suggest that the development of rail freight interchange facilities in the South Holland area would service a relatively concentrated catchment area centred on Spalding and the existing business community. Areas such as Peterborough (32km by road from Spalding) are seen as too remote to secure rail traffic from the Spalding area, whilst conversely Mars Foods in Kings Lynn (50km by road from Spalding) regards Spalding as being too remote to make rail transit viable to the West Midlands.

Table 16 National and regional criteria for rail freight interchanges

Criteria	National guidance	Regional Spatial Strategy
Size	At least 40 Ha (for integrated sites with both intermodal facilities and warehousing)	Not prescriptive in site size
Rail access	Suitable rail access - on rail freight routes with capacity and avoiding congestion	Good rail access with routes capable of accommodating large maritime containers (W10 or W12 gauge), the ability to handle full length trains, available capacity and full operational flexibility
Road access	Suitable road access - with good access to motorway junctions, primary and trunk roads	Good access to the highway network and to appropriate points on the trunk road network
Site layout	Adequate level site area and potential for expansion	A suitable configuration which allows large scale high bay warehousing, intermodal terminal facilities, appropriate railway wagon reception facilities and parking for all goods vehicles
Market proximity	Proximity to commercial customers, both existing and potential (Noting the potential to change to rail achieved by close proximity)	A need for such facilities due to demand from the logistics industry
Site location	Ability for 24/7 working Fit with primary freight flows in the area Ability to contribute to the national network by filling 'gaps' in provision Fit with [SRA] strategies, including the Freight Strategy, Route Utilisation Strategies and Regional Planning Assessments	A location which allows 24 hour operations and which minimises environmental and community impact The need to avoid locations near to sensitive nature conservation sites that have been designated as being of international importance, or that would directly increase traffic levels that would harm such sites
Employment access	Proximity to workforce	Good access to labour

5.2.5 Based on these broad criteria and alternative site searches undertaken elsewhere, and taking account of the results of the market research, we have then used the following criteria to establish broad areas of opportunity:

- No more than 2km from suitable main line route (in this case the existing Joint Line), reflecting the costs of constructing new rail links against the available funding which might be available;
- For larger strategic interchange projects, particularly where proposed sites would lie within sensitive locations such as Green Belt, Areas of Outstanding Natural Beauty or adjacent to residential areas, additional highway criteria would tend to be applied, typically looking for alternative sites within 5km of a suitable highway in addition to the 2km rail criteria above. However, in the case of Spalding the focussed nature and scale of the demand suggests that the local planning authority should focus primarily on the rail corridor, rather than employ a wider area of search within which a rail freight interchange development of this kind might not be deliverable;

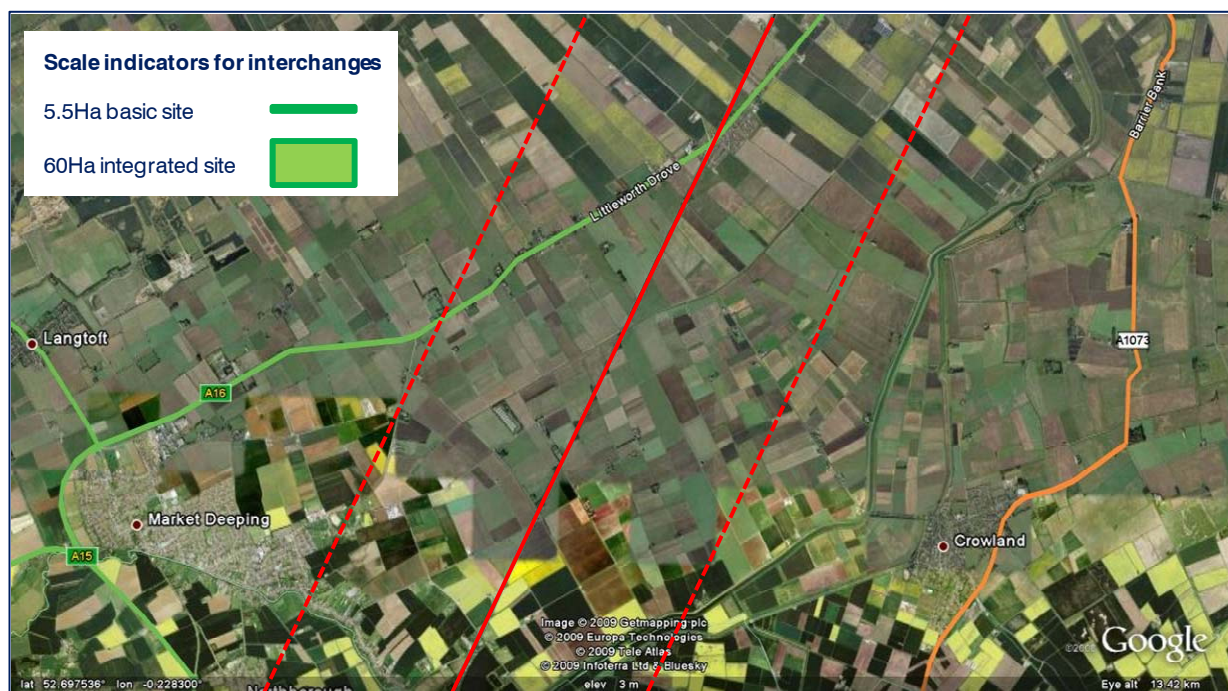
- 5 – 60Ha footprint (or smaller sites with scope to expand) to cover basic to integrated site options;
- Ability to accommodate 550-750m length trains wholly within site, equating to a rail frontage of at least 1,100m for stabling 750m length trains.

5.3 Broad locations

5.3.1 Within the Spalding area, the generally flat topography is favourable for interchange development, however the low-lying nature of the area and extensive networks of dykes and channels will require suitable design to ameliorate flood risk, as most of the area of interest lies within the Environment Agency's flood risk zone.

5.3.2 The existing main line corridor provides the focus for identifying broad locations. Whilst Network Rail has suggested longer-term scope for reinstating the March – Spalding line (closed in 1982, see para 8.3.3) to allow freight trains from Felixstowe to bypass Peterborough, the timescale for this (up to 2036) would make any short-term consideration of this route impractical beyond the 2km search area centred on the existing main line.

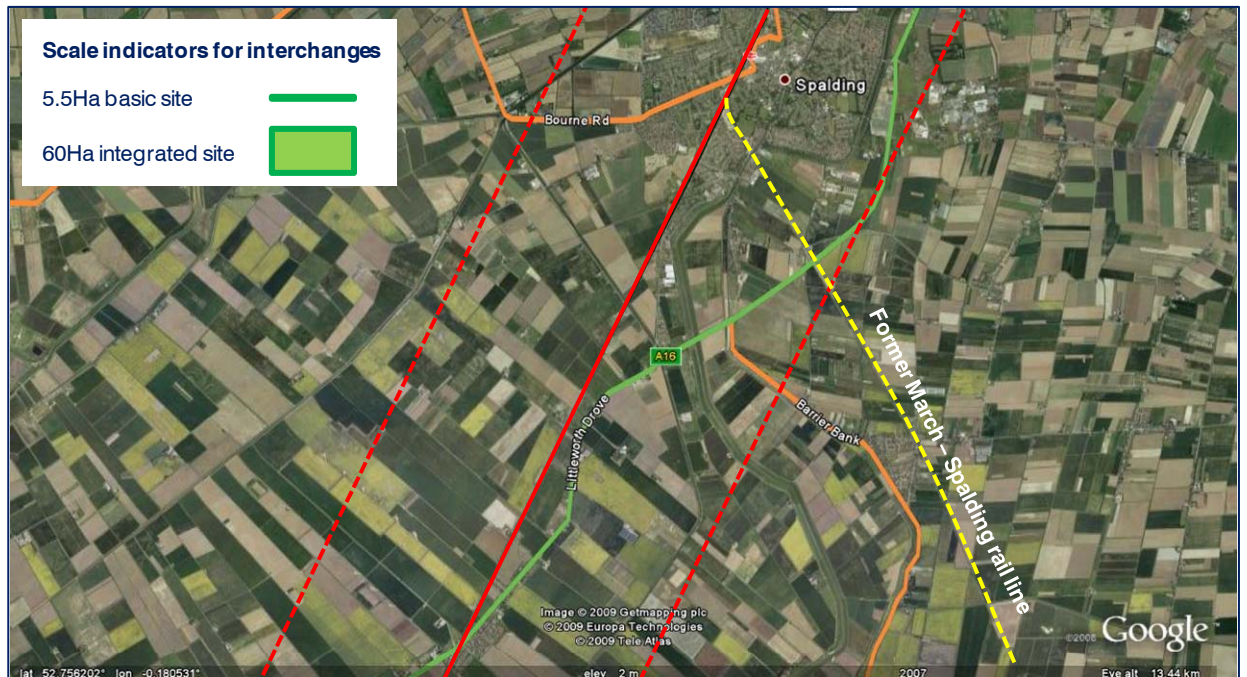
Figure 5 Deeping St James to Deeping St Nicholas (aerial photo source Google Earth)



5.3.3 The Joint Line passes through the settlements of Market Deeping and Deeping St Nicholas, the A16 level at 3m above Ordnance Datum (AOD). There are 10 level crossings between the 2 settlements, some of which would have to be removed to facilitate a main line connection and adjacent development (raising potential severance issues).

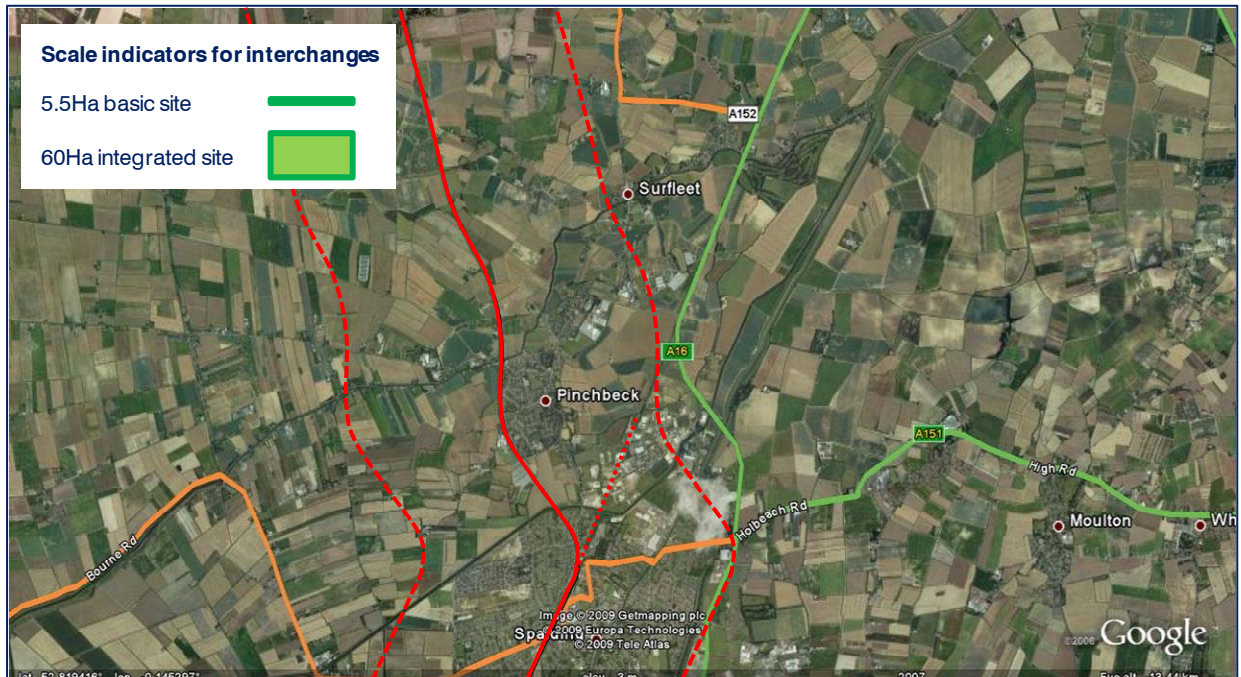
5.3.4 A number of individual dwellings are located along the A16 frontage, which could raise localised issues regarding highway access arrangements in terms of achieving suitable sight lines. A wind farm has been constructed to the west, which may mitigate the visual effects of introducing further built form into the local landscape.

Figure 6 Deeping St Nicholas to Spalding (aerial photo source Google Earth)



- 5.3.5 The A16 and Joint Line railway run parallel within 500m through this section on the approaches to Spalding. The A16 maintains a level of 3m AOD throughout. There are 6 level crossings on this section, some of which would have to be removed to facilitate a main line connection and adjacent development, whilst a number of individual dwellings are located along the A16 frontage, which could raise localised issues regarding highway access arrangements in terms of achieving suitable sight lines.
- 5.3.6 A high-voltage power line runs east-west across the area of interest at the junction of the A16 and B1172. As noted above, a wind farm has been constructed to the west, which may mitigate the visual effects of introducing further built form into the local landscape.
- 5.3.7 This section of the search area includes an area of proposed major housing expansion to the south and west of Spalding. Over the next 15 years an extra 2,500 dwellings are anticipated, together with a new road access which could form part of an eventual western highway bypass for Spalding, enclosing the eventual expansion of the town westwards.
- 5.3.8 The options would include either a basic interchange located between the A16 and the Joint Line, or a larger integrated development to the north/west of the Joint Line, which would necessitate a new road access from the A16 with an overbridge across the Joint Line (as level crossings are generally not permitted for new developments). The rail access could be designed in such a way as to facilitate a future rail “bypass” for Spalding to the west, as discussed previously.
- 5.3.9 Mention should also be made at this stage regarding the disused railway corridor from March to Spalding, which closed in 1982, the trackbed of which can be seen approaching Spalding from the south east in the picture above, to the right of the Barrier Bank highway.
- 5.3.10 The March - Spalding route has been breached in several places within Spalding, to the extent that trying to reinstate this route to reach a rail freight terminal to the south east of Spalding would be impractical, and would not assist any future plan opportunities for a rail bypass of Spalding to the West. Should Network Rail identify any longer-term opportunity to reinstate the March – Spalding line, this should ideally divert from its original formation south of Spalding to join the existing main line, possibly where the main line could in turn then be diverted around Spalding to the west if required.

Figure 7 Spalding to Surfleet (aerial photo source Google Earth)



- 5.3.11 The Joint Line and A16 corridors diverge through this section (on levels of 3-6m AOD), with settlements at Spalding, Pinchbeck and Surfleet situated between the two. There are 6 level crossings through this section. Site opportunities exist on either side of the Joint Line, in particular east of Pinchbeck, west of the A16 and north of the existing industrial area around Wardentree Lane and Enterprise Way. Whilst good road access could be achieved to the A16, rail access would be a challenge. Two rail access options have been considered below.

5.3.13 The second option for effecting rail access would be to construct a new 2km link from the Joint Line, passing north of Crossgate to avoid residential areas to the south. A potential connection point from the Joint Line exists on the section between the level crossings at Langhole Drove to the south, and Burtey Fen Lane to the north.
- 5.3.12 The first option would require reinstating part of the former railway to Boston to achieve a direct link into the existing industrial area as previously existed (Figure 1). This would extend existing sidings in Spalding station northwards for 1km along the disused trackbed. However, the trackbed is now bounded by housing (raising noise and visual concerns), and reinstatement would require crossing Pinchbeck Road where this intersects with Park Road, West Elloe Avenue and two other private road access points. There is no scope to achieve a grade-separated crossing by lifting either road or rail alignments. The alternative option of a level crossing is likely to be resisted on the grounds of safety and traffic congestion.

5.3.14 The main challenges with this option would be the cost of creating an extended main line link, which with land purchase, securing statutory powers (through Transport & Works Order procedure) and construction of the line (including main line connections and river / road crossings) is likely to cost in the order of £20-30m. Finding a suitable alignment around Crossgate and across the various highways is also likely to create challenges, in terms of minimising visual and noise impacts and securing local support.
- 5.3.15 As an alternative to seeking rail access into the existing industrial cluster, a further option would be to develop an interchange on land to the west of the Joint Line between Spalding and Pinchbeck, with a new road access from Enterprise Way / Spalding Road crossing the Joint Line to the west. As with options for broad locations to the south and west of Spalding, a suitable layout, along with the potential coalescence of Spalding and Pinchbeck, could facilitate a future western rail / highway bypass.

Figure 8 Surfleet to Gosberton (aerial photo source Google Earth)



5.3.16 Further north the Joint Line and A16 corridors continue to diverge through this section. There are 6 level crossings through this section. Land north of this section and south of Donington falls outside of the Environment Agency's flood risk area but is increasingly distant from Spalding. A potential interchange opportunity could be achieved by extending the A152 – A16 link road westwards from the B1356 junction, together with a main line connection from the Joint Line further west.

Figure 9 Gosberton to Donington (aerial photo source Google Earth)



5.3.17 Within the final section of the search corridor, the main site opportunities exist between the A52 and the Joint Line. There is an existing employment allocation north and west of Donington, which abuts the Joint Line to the west and the A52 to the south. The main disadvantage with this site is the considerable distance from the existing industrial cluster in Spalding. It is some 22km via the suitable A16, A17 and A52 or 16km via the A152 direct route which is an inappropriate standard for significant freight traffic.

5.3.18 Given the market research confirming a strong desire to secure rail access and services as close to Spalding as possible, and the risk of HGVs taking unsuitable roads from Spalding via local roads to reach any interchange at Donington, we would not consider there to be merit in pursuing this as a suitable broad location for interchange development serving Spalding.

6 Prioritise alternative site option(s)

6.1 Suggested criteria

6.1.1 Again, based on alternative site searches undertaken for developers elsewhere, a selection of the following criteria could be used to further inform and refine the site selection process, reiterating the previous criteria:

- Operational / commercial criteria – primary sift:
 - Location relative to catchment area – within 5km of the centre of Spalding, as a reasonable distance to address the requirements from existing and prospective users / occupiers;
 - Location relative to rail network – within 2km of a main line rail route is considered a maximum given operational efficiencies, costs, lead time and potential environmental impact, with capacity for the quantum of rail traffic anticipated from the site;
 - Location relative to highway network – within 5km of suitable primary roads (subject to satisfying the 2km rail criteria above), again with capacity for the quantum of vehicular traffic anticipated;
 - Ability to assemble land holding of 5 – 60Ha footprint (or smaller initial footprints with ability to expand), preferably in single ownership;
 - Ability to accommodate 550-750m length trains wholly within site boundaries, which equates to a rail frontage of at least 1,100m for stabling 750m length trains;
- Operational / commercial criteria – secondary sift:
 - Ability to achieve sidings on site with gradients no steeper than 1:50 away from the main line, and preferably no steeper than 1:300 or level on site (this is unlikely to be an issue in the local area);
 - Rail infrastructure feasibility and cost (see below);
 - Highway infrastructure feasibility and cost (see below);
- Sustainability criteria (based on Central Government objectives for transport) – final sift, identifying potential net impacts on local area in terms of:
 - Environment - air quality, noise, HGV mileage savings, reduction in greenhouse gases;
 - Safety - accidents on highway network;
 - Economy - direct and wider indirect economic benefits;
 - Accessibility – access to workforce;
 - Policy alignment – eg landscape, heritage, biodiversity, water, agriculture, severance, land use and transport. A particular example would be the relative quality of any agricultural land lost.

6.1.2 To reiterate, the above list of criteria would typically be used for larger strategic interchange developments in sensitive locations (eg Green Belt or AONB), where an applicant would need to demonstrate a lack of alternative sites where such a development could take place. In order for the District Council as local planning authority to determine suitable sites for potential allocation in the Local Development Framework, not all of the above criteria would necessarily have to be addressed or quantified at this stage.

6.2 Highway considerations

6.2.1 At this more detailed stage of site assessment, it would be relevant to consider the highway infrastructure required to access the possible rail freight terminals. The requirement for highway infrastructure will vary depending on whether the basic or integrated option is pursued. For example, the basic interchange is expected to generate significantly fewer vehicular trips than the integrated site. Therefore, existing traffic conditions on the local road network will be of lesser importance.

6.2.2 The key criteria which can be used in assessing the sites from a highways perspective are set out below. These will be used in reviewing the potential sites although, as stated above, their importance may vary depending on the type of interchange envisaged:

- Surrounding roads suitable for HGVs – it will be a requirement of either use that the existing highways in the vicinity of the site are suitable for carrying HGVs. This will require a carriageway width of at least 7.3m and roads should have good quality alignments. These may either be roads built to modern standards or other roads which have been improved to reduce or minimise poor horizontal and vertical alignments;
- Existing traffic conditions – the surrounding road network should not be subject to existing congestion such that additional vehicular trips associated with the proposed development will cause further significant delay;
- Distance to suitable road network – the distance of the site to the nearest suitable road for carrying HGVs should allow for a short connection from the site onto the local highway network. This will serve to minimise the need for construction of access roads or improving existing minor roads;
- Surrounding sensitive receptors – sensitive receptors including schools and residential properties which have frontage onto suitable roads or which are in close proximity will need to be taken into consideration. An increase in HGV movements on roads where such receptors exist will have implications for road safety, road noise and amenity;
- Current access opportunities – existing access opportunities will need to be identified. Existing access points and turning heads should be considered as they may already provide a suitable means of access. Where sites do not benefit from such access opportunities, potential access points will be identified on the basis of their visibility and practicality in relation to the proposed site and layout;
- Location of rail access – where there is the need to reinstate railway track or to lay new track for sidings consideration must be given as to the interaction with the highway network. It is unlikely that the highway authority or Network Rail would accept the provision of new or reinstated level crossings. Similarly, an increase in rail traffic over an existing level crossing as a result of new freight movements may also be considered less desirable due to road safety implications and increased delay to traffic, especially in higher density areas;

- Road safety records – consideration should be given to the prevailing road safety conditions in the vicinity of each site and along its likely access routes. Where trends in personal injury accidents can be identified these will need to be considered in relation to the development proposals. Routes where there is a discernable trend in accidents associated with HGVs may require mitigation measures to be put in place. For example, the A1073 between the A47 at Eye and the A16 at Spalding is subject to a 50mph speed restriction as part of an accident reduction scheme, whilst construction is in hand of a bypass for this section of the route. Consideration will need to be given as to how such schemes may impact or contribute to the development proposals at each of the candidate sites.

6.3 Railway considerations

- 6.3.1 The broad locations that have been identified for potential interchange development generally lie in proximity to the existing Joint Line. Locally the route is essentially a double-track, rural railway, with a regular passenger service comprising lightweight Diesel Multiple Units (DMU). The tracks are configured as conventional, uni-directional, 'Up' (southbound towards London) and 'Down' (northbound away from London) main lines.
- 6.3.2 The main line south of Spalding operates Track Circuit Block working, controlled by Spalding signal box. North of Spalding the main line operates Absolute Block working (ie with no track circuits) controlled by Mill Green and Gosberton signal boxes. At Donington, working is again by Absolute Block controlled by Gosberton and Blotoft signal boxes. Signalling is generally of the two aspect (ie red and green), colour light type. Line speeds are currently 100km/h south of Spalding and 90km/h for those sites north of Spalding. As noted earlier, this route has a high number of level crossings.
- 6.3.3 Much of the trackwork in the area comprises jointed flat bottom rail on baseplated timber sleepers. Some of this existing track exhibits the sort of vertical alignment problems typically associated with railway loadings on the underlying compressible soft clays and peats of the Lincolnshire Fens, which may require special treatment when subject to railway loadings.

- 6.3.4 Network Rail is currently developing proposals to upgrade the Peterborough to Doncaster route to take pressure off of the core East Coast Main Line and enhance the number of paths for high speed operation of passenger services on this route.
- 6.3.5 The works between Peterborough & Doncaster will include linespeed increases for freight traffic and clearing the route to the larger W10 loading gauge (the height and width of rail vehicles and their loads). The current aspiration is to increase linespeeds to 120km/h for trains with axle loads of up to 23 tonnes, and to 100km/h for heavier trains with axle loads up to 25 tonnes.
- 6.3.6 To achieve these enhancements will involve extensive replacement of existing jointed track on timber sleepers with continuous welded rail on steel/concrete sleepers. Some structures and earthworks will require strengthening, sub-grades will require stiffening, track drainage will be improved and tracks will be realigned to increase clearances for W10 loading gauge. Although not currently an identified part of the upgrade works, Network Rail will also be looking at the potential for level crossing closures and signal box rationalisation. There is also no proposal to electrify the route under the upgrade project, although as noted earlier, Government has identified this as a longer-term opportunity.
- 6.3.7 The above works represent a significant investment in the route and as such will be both costly and have an extended programme of implementation works. Network Rail have currently established the December 2013 timetable change date as their target for completion of the works and commissioning of the route to the higher line speeds and enhanced loading gauge.
- 6.3.8 The route upgrade works should not be seen as an obstacle to the provision of a road/rail interchange facility in the local area. In fact, the reduced journey times, modernised infrastructure and enhanced gauge capability for the route are all features that would better support the provision of a new road/rail interchange facility.
- 6.3.9 If a new interchange proposal is to be considered further, it is recommended that Network Rail is consulted in the short term, to determine whether any “enabling works” or “passive provision” can be included within the Joint Line upgrade programme for new main line connection(s).
- 6.3.10 The following is a list of core rail requirements for a typical rail freight interchange, which would need to be addressed when considering site opportunities in more detail:
- Main line connections should ideally be effected on straight and level main line tracks rather than curved or banked ('canted') track;
 - The on-site rail infrastructure should be similar to, and fully integrated with, the adjacent Network Rail infrastructure;
 - Trains must be accepted and despatched from the site under the full control of the appropriate Network Rail signal box;
 - Fixed communication must be provided between the site and the controlling signal box;
 - The site must be so laid out as to accept trains of up to 775m without fouling the adjacent running lines;
 - Unauthorised movements from the depot must be arrested or deflected away before they foul the adjacent running lines;
 - Track geometry and structural clearances shall accord with at least the minimum requirements of the relevant national standards;
 - Track construction for the site arrival and departure sidings shall accord with the relevant national standards;
 - The extent of 'wrong line' working on the running lines (eg having to cross from the Up to the Down Line before entering the site) shall be restricted to an absolute minimum;
 - The site shall be designed to accept and despatch trains from both the north and the south at 40km/h;
 - Crippled rail vehicles must be capable of being detached and held within the depot infrastructure, pending repair.
- 6.4 Recommended options for further consideration**
- 6.4.1 We would recommend focussing on the broad areas to the immediate north and south of Spalding for further consideration of site opportunities. This takes into account proximity to users, occupiers and employees, distance from residential areas, the relative position of road and rail infrastructure, and the scope to create a future western rail bypass for freight and/or all rail traffic.

7 Business case development

7.1 Commercial drivers and business models for rail freight interchanges

- 7.1.1 Both from a business and local authority perspective, improving access to South Holland creates opportunities for commercial, operational or environmental benefits, which over time may help retain or expand economic activity in the area. This will require some form of basic or integrated interchange to be developed.
- 7.1.2 It is important to reiterate from previous sections that the basic interchange activity, ie transferring goods or intermodal units between road and rail vehicles, is at best a marginal economic activity; the typical £25 market charge for a single lift of a container or swap body from a train to a truck (or the equivalent rate for moving individual loads between rail wagons and road vehicles by fork lift truck) will at best cover the operating costs of the handling equipment, staff and associated overheads.
- 7.1.3 Yet as the prerequisite to unlocking rail-linked development opportunities, an increasing commercial priority for those who operate or use freight transport, investment in rail freight interchange facilities can be justified within a larger integrated distribution development as a means to increase the relative attractiveness of such sites to prospective occupiers, compared to sites with no rail access.
- 7.1.4 Whilst there is no evidence at present of developers being able to obtain significant rental premiums for rail-linked sites, the combination of highway, railway and site-specific criteria mentioned earlier will inevitably impose constraints on the number of practicable and viable rail freight interchanges that can be constructed: faced with this scenario, it is conceivable that some developers are seeking to secure longer-term footholds in the rail interchange market, from which to obtain future premiums as the demand for interchange capacity increasingly exceeds supply.
- 7.1.5 Additionally, the operator of an intermodal terminal, whether a train operating company or a logistics provider, can similarly obtain a commercial return overall by linking the interchange activity to other “value-added” services, such as adjacent storage facilities, processing and onward distribution by road or rail.
- 7.1.6 Within the public sector, a number of local authorities and development agencies have promoted new interchange developments of various sizes, from basic terminals at Doncaster, Portsmouth and Telford, through to major strategic interchanges at Markham Vale, Mossend, Wakefield, Wentloog and Widnes.
- 7.1.7 The larger developments have tended to be public / private sector initiatives involving a development partner and/or operator linking with the local authority, eg:
- Markham Vale: Derbyshire County Council / Henry Boot;
 - Wakefield Europort: Wakefield MBC / Amec Developments / British Railways;
 - Wentloog: Welsh Development Agency / Cardiff County Council / Freightliner / Railtrack / Euroclad;
 - Mersey Multimodal Gateway, Widnes: Halton Borough Council / Stobart Group.
- 7.1.8 This public sector involvement is justified by a range of direct and indirect benefits, which may include:
- Socio-economic, eg:
 - Regenerating former industrial sites;
 - Improving accessibility / reducing peripherality;
 - Attracting and retaining direct inward investment, economic activity and jobs;
 - Creation of indirect employment and economic activity in the surrounding area;
 - Environmental, eg
 - Remediating industrial land;
 - Creating new landscapes and habitats;
 - Promoting modal shift of employees and goods to more efficient modes of transport.
- 7.1.9 The UK experience of joint public / private sector interchange development is pre-dated by mainland Europe by several decades. An example is the network of Italian interchanges, or *Interporti*, some of which have been in operation for nearly 40 years.

Case study – Quadrante Europa, Verona (250Ha, intermodal terminals, rail-linked warehousing and produce hub)

Figure 10 Quadrante Europa, Verona



7.1.10 One of the Interporti, Quadrante Europa in Verona is a 250 hectare (617 acre) site developed by a public / private partnership involving the local authority, regional development agency and local chamber of commerce. The development lies at the crossroads of motorway and rail links, and has a direct connection to Verona airport. It handles international freight coming from or going to northern central Europe, Spain, France and Eastern Europe. Facilities include:

- 16 Ha intermodal terminal served by 14 trains/day;
- 38 Ha of general rail-linked warehousing with a range of value-added services;
- 22 Ha logistics centre;
- 4 Ha container storage area;
- 1.4 Ha vehicle service centre;
- 6 Ha parking area and amenities for international goods vehicles and their drivers;

7.1.11 Together, the facilities on site handle 18m tonnes by road and 6.7m tonnes by rail per annum. More than 100 companies are based on site, with 4,000 employees.

7.1.12 Whilst the scale of the development is much larger than might be anticipated for Spalding, Quadrante Europa is of relevance due to the subsequent adjacent development of a 60 Ha “Agricultural and Food Centre”, one of the largest developments of its kind in Italy, which acts as a regional consolidation and distribution hub for fresh produce from the surrounding area. The site has ambient, chilled and refrigerated warehousing, together with wholesale markets for a range of agricultural and horticultural products along with a range of tertiary suppliers. The centre (in foreground of Figure 5 above) is interconnected by a fibre-optic communication network, and handles around 500,000 tonnes of product per annum.

Food-related business clusters

- 7.1.13 Reflecting the experience of Verona, there may be scope to use the development of an integrated rail freight interchange and distribution park, as a catalyst for attracting further “clustering” of food-related activities. This would not only provide a more cohesive approach to fostering the fresh produce sector in the local area, but would also enhance the business case for creation of the combined development.
- 7.1.14 A cluster is defined as “geographic concentrations of interconnected companies, specialised suppliers, service providers, and associated institutions in a particular field that are present in a nation or region.” The government believes clusters of firms and skilled workers can be a key economic driver, developing and sharing expertise and skills, achieving economies of scale through buying groups and joint marketing, developing new ideas, finding support services through networking and enabling a supporting infrastructure of professional, legal, financial and other services.
- 7.1.15 A trade article has noted the role of Scottish Enterprise (SE) as one of the first Regional Development Agencies to identify food and drink as a cluster. The RDA's 10-year strategy for the sector was published in 1999, seeking to raise the sector's turnover from £4.2bn to £7.4bn by 2010 and creating 6,000 new jobs. Research was conducted on local business and successful clusters overseas like the Danish pork and American poultry industries and the New Zealand food industry. A strategy group was formed involving management from leading value-added companies. Companies, particularly small and medium sized enterprises (SMEs) have received help with operational efficiencies and around £45m of Scottish Executive money has been invested in buildings and equipment. Food forums have been created to enable ideas to be exchanged.
- 7.1.16 In England, the specialist Yorkshire and Humber Regional Food Group has been created to develop the trade, increase consumer awareness and develop competition and additional value-added services. Yorkshire Forward has worked with companies ranging from small cheese makers to large seafood producers.
- 7.1.17 Recognising that smaller producers can have difficulties securing adequate premises, funding has been provided to upgrade some starter units on a new park at Melmerby to food grade standard. There are economies of scale in training too, with companies co-operating and new courses developed, like a course for chefs at Thomas Danby College, now reportedly fully subscribed.
- 7.1.18 North East Lincolnshire Council has branded Grimsby as "Food Town" and 90% of the local Europarc enterprise park (see case study below) is now food-related. Although the once huge fishing industry has declined significantly, it is still close to a major horticultural area and the two industries have left a large concentration of food processors and cold stores, with large companies like Young's Bluecrest, Baxters and Headland Food and developing firms like oriental meal specialist Kwoks.
- 7.1.19 Some 15,000 of the 68,000 employees in the area are in direct food work and the local authority considers that adding in cold stores, logistics, engineering and refrigeration probably trebles this figure. There are 500 to 600 food related companies locally, and the concentration of food companies means that a concentration of support services in engineering, packaging, logistics etc also thrives.
- 7.1.20 The size of the workforce helps to cope with seasonal variations and local education providers like Grimsby Institute of Further and Higher Education, with its Food Manufacturing Technology Centre and Humber Institute of Food & Fisheries, have provided education and training in support. North East Lincolnshire is looking at ways to help food companies on Europarc deal with waste and wastewater to harness economies of scale.
- 7.1.21 A number of case studies are set out below.

Case study – Bradford

- 7.1.22 Yorkshire Forward has supported plans from the International Food Group to establish a £10m food manufacturing park on a 3 Ha site in Bradford in 2003, as part of wider work to promote the sector, stating:

“Yorkshire and Humber is the UK’s food-processing capital, with some of the world’s best known names operating in the region. The region is also home to a concentration of breweries, a growing ethnic cluster and a hub for seafood processing out of the Humber.

Yorkshire Forward is working to ensure that this well established food and drink cluster continues to grow and that business receives the support it needs to expand, export, educate and succeed.

Statistically, over 200,000 people work in the food and drink industry in Yorkshire and Humber; the ethnic food market is growing at a rate of 15% per year and speciality foods at around 35%. We are working to put Yorkshire and Humber food on the world map, increasing international interest in the region and its products as well as ensuring opportunities are available to all at a regional level.

A large proportion of small businesses have the opportunity to supply to large retailers. However, with increasing demands from major retailers requiring food processors to manufacture under full British Retail Consortium standards, associated set-up costs are beyond many of Yorkshire and Humber’s new businesses. As a result, they cannot grow the business and expand at the rate they would like.

To help address these problems, Yorkshire Forward has invested in the six purpose-built food-grade units at Ripon, North Yorkshire, which opened in Summer 2003. Businesses taking advantage of the new units do not have to meet any of the costs required by food and hygiene regulations as the units are built to British Retail Consortium standards. Companies rent the units for 18 months and are then given the opportunity to move to a larger unit on the park. The premises are supported by technical and business services, and training is being provided by Harrogate College.”

Case study –Europarc, NE Lincolnshire

- 7.1.23 Yorkshire Forward has also been behind the development of Europarc, a business park in North East Lincolnshire targeted at companies in the food sector seeking access to the UK and European markets. The 52 ha site (with scope to expand to 200 Ha) is located between the ports of Grimsby & Immingham and adjacent to a motorway link road. The Humber ports complex handles over 20% of the nation's sea-borne trade, Humber International airport is within 10km, and the motorway network provides access to four other international airports.

- 7.1.24 The development attracted £5m of European grants through a Regional Challenge Bid and secured £1.4m of Single Regeneration Budget funding for a regional Technology Transfer Centre on the site. Yorkshire Forward (English Partnerships previously) has spent £20m to buy the land and install services and infrastructure. Additional funding has included £7.2 million from ERDF grants, £3 million from a private development company and £100,000 from the North East Lincolnshire Council. Occupiers include ready meal producer Kwoks (70 jobs) and Baxter’s Soups (£10m investment and over 200 new jobs). Ultimately the site hopes to attract over 3,000 jobs.

Case study – Shrewsbury Food Enterprise Park

- 7.1.25 In the West Midlands, the £4 million Shrewsbury Food Enterprise Park was developed as a joint venture between Advantage West Midlands and Shropshire County Council. The 10 hectare site at Battlefield Enterprise Park provides units for sale or lease for large and small food and drink firms along with an area dedicated to small and medium-sized enterprises. It is intended that the Food Enterprise Park will create a base for the region's food and drink sector.

- 7.1.26 The enterprise park will offer companies the chance to share facilities such as storage and distribution, along with technical and business expertise. Mark Pearce, Advantage West Midlands director for Shropshire, Herefordshire and Worcestershire, said:

“We’re pleased to see the progress being made with this project which will provide a massive boost to the food and drink sectors in this region. Food and drink makes a huge contribution to the West Midlands, accounting for some 170,000 jobs and seven per cent of the economy. By providing a focus for the sector, this project will help cut costs to the businesses and provide specialised support to help make this industry more competitive.”

7.1.27 Malcolm Brown, Head of Economic Development at Shropshire County Council, said:

“This project will help promote Shropshire food. It will also benefit many local food processing businesses that sell their products to niche markets across the UK.”

7.2 Costs and revenues

7.2.1 For a basic interchange, at least £10m of initial capital expenditure to plan and deliver a basic interchange with full rail connectivity to north and south, for which there would at best be sufficient income from interchange activities to cover the running costs and perhaps yield an element of rental income / profit share to the site owner, in the order of £25,000 to £100,000 per year depending on the level of traffic. On this basis it is apparent that the initial investment in a basic terminal could not be predicated simply on commercial returns from the activity on site.

7.2.2 For a larger integrated facility, the main cost elements for a new rail-linked development will include:

- Land purchase – market research (see section 2) suggests land values in the order of £150-300,000 per hectare;
- Infrastructure (road and rail access, intermodal terminal) – we have assumed £10m provision;
- Warehousing – build costs for a standard 9,289 m² (100,000 ft²) B8 distribution warehouse are in the region of £280 - £333 per m², inclusive of externals such as yard and parking. However, build cost is invariably a function of size and procurement (the largest B8 developers can procure at lower build costs because of their supply chain and volume of building contracts). This figure can increase substantially for smaller warehouses;

- Cold stores – B8 coldstores cost considerably more to build, owing to the specialist systems required which are integral to the building construction; and thus cannot easily be removed. On this basis, purpose build coldstores are not directly comparable to standard ambient warehouses in terms of build costs. BCIS quotes construction costs for coldstores at £1,500 per m². We are aware of examples (details of which are confidential) where the construction of a > 18,579 m² (>200,000 ft²) B8 coldstore cost c. £2,153 per m² to build, allowing for temperatures of minus 30 degrees celsius.

7.2.3 As an example, a 60Ha site with 100,000m² of B8 warehousing and 100,000m² of B8 coldstores might be expected to cost in the order of:

- Land: £13.5m
- Infrastructure: £10.0m
- Warehousing: £30.6m
- Coldstores: £185.0m
- Contingencies (25%): £60.0m
- Total **£264.1m**

7.2.4 Against these costs, revenues might be obtained as follows (drawing on market research in section 2):

- B8 rentals £5.95m per annum
- Coldstore rentals £7.44m per annum
- Intermodal handling £4.50m per annum
- Total **£17.89m per annum**

7.2.5 Operating / maintenance costs would then need to be recovered from the revenue, which assuming 10% of rental income and 95% of the intermodal handling revenue, would equate to around **£5.6m** per annum.

7.2.6 On this basis, and taking account of profit, the development as shown would need to be seen as a 25-year investment to cover the initial investment, and is set against current local market conditions with relatively low-value secondhand floorspace remaining unsold.

- 7.2.7 It is apparent that the main cost item in the development as shown would be the cold store element, the level of which has yet to be determined. Whilst the construction cost for a new purpose built coldstore is significantly greater than a standard warehouse, once the coldstore becomes secondary, ie over 10 years old, valuations have demonstrated the assumed value can reduce by over half. The low operating temperatures over such a length of time can result in the deterioration to the fabric of the building over and above that experienced by a standard warehouse, as well as higher ongoing maintenance costs.
- 7.2.8 Similarly, rental levels for a new build coldstore are a function of build cost and evidence suggests this can demand up to four times greater than the market rent for a standard B8 warehouse. The Valuation Office Agency advises a 25% rent addition on the coldstore element, whether it be across a whole building or part. However once the coldstore is considered secondary, rental levels can drop to be comparable to standard market rents owing to the lack of demand and difficulty in re-letting secondary coldstore accommodation. We have therefore assumed a 25% uplift in rental value in the above figures.
- 7.2.9 It should be noted that build costs and rental levels associated with a coldstore have some flexibility dependant on the construction method and specification of the coldstore. There are considered to be 3 standard types of coldstore, which vary in terms of build costs, fundability and future building obsolescence:
- Purpose built cold stores where the structural walls, floors and ceiling of the building contain insulation – uplift in rental levels applied across whole of the building to allow for high build costs;
 - Cold stores of modern pre-fabricated construction installed within an existing building – can form only part of the building and rent addition applied to this facility only, the ease of removal of such a facility is a key consideration to the level of rent addition;
 - Free standing freezer cabinets and chills in the nature of large refrigerators placed on the floor with cooling plant – rental addition is entirely specific to the size, weight and permanence of such a structure
- 7.2.10 Difficulty in re-letting coldstores is compounded by recent market trends in the consumer industry. Over the past 5 years, consumer preference has been towards chilled and fresh produce, away from frozen food, with a more rapid turnaround of goods. This has led to consolidation with the cold store sector of the logistics/storage industry. Most notably, supermarkets have reacted to market demand by reducing their cold storage capacity within multifunctional distribution facilities, utilising the space for chilled product.
- 7.2.11 There have been limited investment transactions in the current market that would be comparable to a development at Spalding; owing to the specialist nature of this market and the type of accommodation that would potentially be required. Yield levels would be particularly sensitive to and dependant on the length of lease and tenant covenant because of the investment market’s perception of Spalding as a secondary B8 location which defines the potential a) to re-let void buildings; and b) for rental growth.
- 7.2.12 Due to the bespoke nature of any development at Spalding, the value of the investment would be in the anticipated inertia of the occupiers who commit to new accommodation at an interchange facility.
- 7.2.13 Lease terms would require a minimum of 15 years with fixed rent uplifts, due to the difficulty of renewing at this location. A standard B8 warehouse, assuming this is leased to a strong national-based covenant, would achieve yields in the order of 7.5 – 7.75%. For a purpose built coldstore, on the same assumptions, this would increase to 8.25%. Coldstore accommodation would appeal to some investors due to the capital allowances likely to be associated with its specialist facilities, this would include private property companies, quoted property companies and German institutional investors. Current market conditions have depressed the level of yield which can be obtained, with a recent 15-year lease proposal to a major supermarket for a standard warehouse in the South West has been made on the basis of a 7.25% yield.

7.3 Business case options

7.3.1 A number of options could be pursued for a new development in the Spalding area, broadly within the range of options set out below:

- Identification by the District Council within the Local Development Framework (LDF) of suitable broad location(s) or more specific site(s) for an interchange and any associated development, publicising the LDF allocation to the freight industry to attract interest;
- A public-sector led scheme, using a range of relevant sources of grant funding from European, national and regional sources to support the investment, to attract downstream private-sector interest;
- A public/private-sector scheme, where private-sector companies can be invited to submit scheme proposals to work alongside the public sector, from which a preferred partner or consortia can be selected to help plan, promote and develop a scheme;
- A wholly private-sector scheme, where it is left to the market to decide the location, scale and investment of any interchange and associated development.

7.3.2 Taking account of the current market conditions, together with the peripheral location of Spalding in commercial development terms, it may not be possible to achieve a wholly private-sector scheme, particularly for a basic rail freight facility. Alternative options would then involve:

- a) Reducing the initial costs;
- b) Attracting third-party funding / grants to offset these costs to reflect wider direct and indirect benefits (eg inward investment, employment, modal shift etc); or
- c) Constructing additional value-added development around the interchange which can then cross-subsidise the initial investment.

7.3.3 The role of Network Rail could be critical in terms of Options a) and b):

- Firstly, it may be possible to integrate some or all of the rail-related works into the current Joint Line Upgrade programme to achieve economies of scale, and to re-use redundant main line track on site.

- Secondly, there may also be scope to use new infrastructure (eg main line crossovers and sidings) as an opportunity to dispense with existing infrastructure elsewhere. One candidate might be the sidings north of Spalding station, which are unlikely to serve any future purpose and sit within the Local Plan Northern Expansion Area, so offering a potential redevelopment opportunity.
- Thirdly, Network Rail could provide discretionary funding to the project, to help grow the rail business in line with its Licence Conditions, albeit the level of such funding is likely to be increasingly limited.

7.3.4 Option b) could also involve support from a range of grants, and examples are set out further below.

7.3.5 In terms of option c), the extent of any value-added development will ultimately be constrained by demand, availability of land and investment, and the level of return which can be achieved from development in Spalding compared to other areas.

7.3.6 In this regard it is apparent from the market research that industrial development further towards the centre of the East Midlands is likely to attract higher levels of interest and potential rental incomes, albeit offset by higher land prices, and that demand in the Spalding area is likely to be for smaller unit sizes than would typically be found on a major rail freight interchange.

7.3.7 Considering the “whole life” business case for development of a rail freight interchange, our recommendations would be:

- Firstly, to test the opportunities with property developers, to establish the likely level of interest, either for attracting standalone commercial schemes or joint public/private schemes;
- Secondly, engage with Network Rail to determine how far the costs of creating the rail infrastructure could be controlled or supported by the company as part of the Joint Line Upgrade programme;
- Thirdly, engage with a range of funding agencies (see below) to determine scope to obtain support for an interchange and/or associated development.

7.4 European Commission freight grants

7.4.1 The European Commission's 'Marco Polo' grant programme is designed to provide start-up support for pan-European intermodal freight services which can transfer freight off the road network. Three types of action are available:

- Modal Shift Actions: these aid the start-up of intermodal services, which transfer freight from road transport, subsidy of up to €1 per 500 tonne-km of freight moved from road, covering up to 30% of eligible costs over a maximum 3-year period;
- Catalyst Actions: these help overcome structural market barriers to achieve modal shift, using high levels of innovation to achieve real breakthroughs, subsidy of up to 35% of eligible costs over a maximum 4-year period;
- Common Learning Actions: these help improve co-operation and sharing of know-how, subsidy of up to 50% of eligible costs over a maximum 2-year period;

7.5 Department for Transport freight grants

7.5.1 The Government operates three main grant schemes under Transport Act 2000 – section 211/249, Transport (Scotland) Act 2001 section 71 and the Railways Act 2005 - Section 8 designed to help subsidise the cost of moving freight by rail and water rather than road:-

- Freight Facility Grants (FFG);
- Rail Environmental Benefits Procurement Scheme (REPS Bulk and Intermodal);
- Water Borne Freight Schemes.

Freight Facilities Grant (FFG)

7.5.2 The level of grant funding is calculated as the minimum necessary to encourage freight to switch from road to rail based on a comparison of the economic case over the period that freight is committed to rail. The level of grant is then restricted to the level of environmental benefits accruing to the UK.

7.5.3 Grants are awarded as a percentage of the eligible capital costs of a project, and the award is entirely discretionary.

7.5.4 The FFG award will only subsidise the capital expenditure exclusively necessary for the transportation of the relevant freight by rail. Any capital expenditure that would be necessary to transport the freight involved by road or rail would be ineligible. If for instance, warehousing is necessary to store freight whether it was transported by road or rail, it could not be grant aided under FFG.

7.5.5 In addition to this eligible capital expenditure is considered to be only that necessary to service the specified freight contracts the applicant commits to at the time of the application. Any part of the rail facility being built to cater for potential future traffic flows would not be eligible for grant support.

7.5.6 Eligible costs therefore include all costs directly associated with the rail freight contracts such as rail works, signalling, and, where appropriate, facilities on site to handle the rail freight. Cranes are also eligible for FFG, if it is essential for the freight contracts in question, as are forklift trucks, reachstackers, locomotives, and professional fees. (Eligibility of individual items is negotiable, as the grant is discretionary.)

7.5.7 The grant applicant must own the assets on which grant is being paid. If some or all assets are to be owned by third parties, they must support the grant application and grant would be paid to them on those assets. The structure of the project in terms of ownership of assets should therefore be decided upon before any application is discussed with the DfT, in order to ensure that assets being leased, for example, could be eligible for grant aid.

7.5.8 FFG is paid out within 5 working days of receiving receipted invoices for the project verified by an independent auditor. A retention of 10% of the grant is retained until the facility has become operational. Claims can therefore be submitted during the construction period, however, the exact timings of the claims are usually negotiated during the application process, and can affect the level of grant funding. The awarding body can reclaim grant if the predicted traffic fails to materialise, but an opportunity will usually be given to find replacement traffic.

- 7.5.9 The economic case for FFG and the environmental benefits of the project will be assessed over the period freight is committed to rail, which usually is the length of the intended freight contract. There will need to be a clear commitment by those organisations controlling the freight contracts, to switch specific traffic flows from road to rail for a definite period. This commitment at the application stage would need to take the form of a board minute or letter of support.
- 7.5.10 Freight contracts for rail will usually only be finally agreed once the rail facility is in place, particularly in view of the requirement that no commitment to the rail option is made until the grant has been awarded.
- 7.5.11 In practice it is usual for the rail operators to confirm in writing their likely charges and the estimated traffic flows during the application process, and for the grant award to be made subject to evidence of the rail contracts being produced at a later date.
- 7.5.12 The minimum period of commitment to rail is usually around 3 years, and the maximum is usually 10 years, but it is possible to negotiate a longer period if this is practical. The level of traffic being switched from road to rail in the "grant project" will also determine the level of capital expenditure needed for these freight contracts. The grant is the incentive to switch freight from road to rail and therefore it is essential that the applicant can demonstrate it has this option.
- 7.5.13 The application process for FFG is very detailed and time consuming, and a decision will usually be made within six months of receiving a full application. In practice this period has been cut to approximately 4 months on occasions, but it is recommended that six months would be a minimum period for the application process. It is also recommended that the first formal meeting to discuss the grant application with the grant awarding body therefore be carried out at the earliest opportunity.
- 7.5.14 No legal commitment to the project can be made until a formal offer of grant is made. It should be stressed that even a perceived commitment could jeopardise the chance of obtaining grant funding. Part of the approval process involves the use of independent consultant engineers to assess the project. This review is designed to be completed in four to eight weeks.
- Rail Environmental Benefits Procurement Scheme (REPS Bulk and Intermodal)***
- 7.5.15 This scheme assists companies with the operating costs associated with running rail freight transport instead of road (where rail is more expensive than road). The scheme is a direct replacement of the Track Access Grant (TAG) and the Company Neutral Revenue Support Schemes (CNRS) in Great Britain.
- 7.5.16 REPS is intended to provide operational subsidy to cover the additional cost of rail operations over road, subject to the level of environmental benefits achieved. The grant is paid out retrospectively so will be based on actual volumes moved rather than estimated volumes as with FFG awards.
- 7.5.17 It is possible to apply for both FFG and REPS support, but in practice the limit imposed by the environmental benefits cap will usually mean that only one form of support will be secured.
- 7.5.18 REPS operates in two parts:
- REPS (Intermodal) for the purchase of intermodal container movements by rail;
 - REPS (Bulk) for the purchase of other freight traffic movements by rail.
- 7.5.19 In each case the grant will be the amount necessary to encourage freight to switch to rail, subject to the environmental benefits cap. Table 17 below uses the DfT calculator to estimate the environmental benefits in terms of HGV trip savings (known as Sensitive Lorry Miles or SLMs) for trains between Spalding and key destinations. In the scenario below, 5 trains per day are operated between Spalding and a spread of destinations including mainland Europe via the Channel Tunnel (note in the case of latter only UK mileage savings are eligible).
- 7.5.20 Whilst it must be stressed that only a proportion of any agreed SLM benefits (typically 1/3) would be available to support any qualifying project at Spalding (the £15m FFG paid to Bristol Port Company was an exception, representing the majority of the costs involved). A decision would need to be taken as to whether these benefits would be used in support of capital investment in a new interchange through FFG, or in revenue support of start-up rail services through REPS.

Table 17 Estimate of Sensitive Lorry Mileage environmental benefits for modal shift to rail

Destination	Trains per day each way	HGV loads per train	Average distance per HGV each way (km)	SLM per HGV trip each way (£)	Total SLM per train over 5 years†
Scotland (Mossend)	1	30	500	£120	£9,000,000
North West (Widnes)	1	30	260	£86	£6,450,000
South West (Avonmouth)	1	30	275	£65	£4,875,000
South East (Barking)	1	30	175	£31	£2,325,000
Mainland Europe (Folkestone)	1	30	275	£40	£3,000,000
Total	5				£25,650,000

† Based on [trains/day each way] x [HGV loads/train] x [SLM/HGV trip each way] x [2 way round trip] x [250 days/year x 5 years]

Changes to DfT grant schemes

- 7.5.21 A number of changes to the grant schemes were approved by the European Commission on 2 July 2009 for the Mode Shift Revenue Support Scheme (MSRS).
- 7.5.22 REPS (Intermodal) will be replaced by MSRS (Intermodal) from 1 April 2010 to 31 March 2015 and will operate on the same principles as REPS (Intermodal). The upper limits of support reflect the new Mode Shift Benefit (MSB) values.
- 7.5.23 REPS (Bulk) will be replaced by MSRS (Bulk) from 1 April 2010 to 31 March 2015. There is no change to how this will operate for rail freight however a significant change is that inland waterway movement will now also be eligible for this support. A Guide for Applicants for MSRS will be made available shortly.
- 7.5.24 Formal confirmation was given by the European Commission on 2 and 6 July 2009 that it has accepted a number of revisions to the freight mode shift grant schemes operated in Scotland, England and Wales.
- 7.5.25 The current means of quantifying the environmental benefits of transferring freight from road to rail and water (known as Sensitive Lorry Miles or SLMs) will be replaced by new values which take account of developments since the SLM values were last assessed. These new values will be known as Mode Shift Benefits (MSB) and will apply from 1 April 2010 and will remain in force until 31 March 2015.
- 7.5.26 The MSB values are segmented into four road types. There are two values for motorways, a Standard value for most motorways and a High value for those sections of motorway where congestion is substantially higher. There is a single value for all A-roads and a further value for all B, C and unclassified roads. The values are shown in Table 18 below. High MSB values will apply between specific motorway junctions.

Table 18 Mode Shift Benefits by highway type (source DfT)

Highway type		Rate per mile
Motorways	High value	£0.86
	Standard	£0.07
All A-roads		£0.74
Other roads (all B, C and unclassified roads)		£1.43

7.6 European regional funds

7.6.1 The East Midlands Region can access a range of European funds, most of which will require match funding and include (source EMDA):

- European Regional Development Fund (ERDF)**, which aims to strengthen economic and social cohesion in the European Union by supporting regional economic development. ERDF funding has been used for a range of projects, including the new intermodal terminal at Portsmouth (£0.5m) obtained by SEEDA via the IMPACTE component of the INTERREG programme) and the Europarc food cluster business park in NE Lincolnshire (£7m). The East Midlands is eligible for approximately £209m between 2007 and 2013 (subject to exchange rate fluctuations), which when combined with national public match funding, provides a programme value of approximately £418m. EMDA is responsible for the programme management and delivery of the region's ERDF Competitiveness Programme;
- European Social Fund (ESF)** aims to improve people's skills and employment prospects. The East Midlands' share of the England ESF programme for 2007-13 is worth approximately £174 million. Two priorities for action have been proposed, namely extending employment opportunities and developing a skilled and adaptable workforce. This programme is being managed in the East Midlands by Government Office for the East Midlands;
- European Agricultural Funding for Rural Development (EAFRD)**, delivered through the Rural Development Programme for England (RDPE), is focused on supporting diversification of rural economies at the local level. This includes interventions in agriculture, including supporting innovative farm diversification and woodland enterprises. It is also used to enable the growth of existing micro-enterprises and encouraging start-ups, and improving skills and employment opportunities for individuals in the rural workforce on low pay;
- Framework Programme 7 (FP7)**: with a budget of over €50bn, FP7 is the European Union's main instrument for funding research. FP7 has five major programmes: cooperation, ideas, people, capacities and nuclear research. Projects must develop transnational partnerships to submit an application for funding in an EU wide competitive bidding process;
- INTERREG** programme: the East Midlands is eligible for funding under the trans-national strand of the programme, providing funding for sustainable regional economic development projects; tackling common issues relevant to urban and rural development; strengthening the innovative capacity and knowledge based economy of regions, sustainable transport solutions and environmental resource management. Projects need to work together with partners in other Member States to share experience and best practice and develop transferable practices and solutions to the four priority issues, namely innovation, environment & risk prevention, sustainable urban development and accessibility. The East Midlands can access funds from the North West Europe and North Sea Programmes.

7.7 Other regional funds

- 7.7.1 EMDA also manages **Grants for Business Investment** (GBI), a discretionary scheme delivered by the Regional Development Agencies, on behalf of BIS, the Department for Business, Innovation and Skills. It is aimed at businesses which need financial help to invest in land and buildings or plant and machinery in order to expand and modernise. In May 2009, EMDA announced that it was providing an additional £9.5 million to the GBI scheme, with ERDF contributing a further £1.4 million. The funding will be made available to support businesses up until 2014.
- 7.7.2 GBI is available to businesses from all parts of the region, however, the ERDF money has a particular focus on supporting projects from the Priority Axis 2 (PA2) areas of the East Midlands. These include the cities of Nottingham, Derby, Leicester and Lincoln, the towns of Corby, Chesterfield, Mansfield, and Boston and the districts of Ashfield, Bassetlaw, Bolsover and East Lindsey. Projects that could, in future, potentially be supported by the ERDF funding, include business projects creating jobs rather than investing in assets alone. The extended GBI scheme will see more of the region's small businesses - particularly in manufacturing sectors - benefiting from funding.
- 7.7.3 As noted earlier, the new 9 Ha Telford rail freight interchange has cost £8m, funded by ERDF, Telford & Wrekin Council, English Partnerships and Advantage West Midlands. It is recommended that the Client group makes contact with Telford & Wrekin Council to understand the business case and funding arrangements in more detail. Similarly, it is recommended that the Client group makes contact with promoters of food cluster developments to understand the development and funding arrangements.

8 Planning policy appraisal

8.1 Overview

8.1.1 Within this section, the hierarchy of policies are reviewed to consider how the principle of a rail freight interchange and potential broad locations in the Spalding area align with or respond to these policies at national, regional and local level.

8.2 National government policy

8.2.1 Government has set out a strategy for addressing climate change by promoting more sustainable means of development and distribution, through a policy framework for land use and transport planning, which spans both national and regional agendas. These policies have been subject to review in recent years, through the reports produced by Sir Nicholas Stern, Kate Barker and Sir Rod Eddington.

8.2.2 Government policy first recognised the emerging challenge on 'sustainability' several years ago, reflecting on concerns raised at the Rio Summit in 1992 and the Kyoto Summit in 1997 about the wider effect of greenhouse gases on climate change. Over the last decade, a comprehensive framework of policies has developed to create conditions favourable to, and supportive of, the planning and development of rail freight services and infrastructure.

8.2.3 The chronology of key national policies is set out below:

- **Sustainable Distribution, A Strategy** (1999) first acknowledged the critical importance of distribution to the wider economy but identified that, unchecked, the current approach to the distribution of goods would create unacceptably high social, economic and environmental impacts. When intensively used, railways could offer a substantially more energy-efficient means of distribution and help to reduce congestion on the road network, with a better safety record;
- **Transport 2010, The 10 Year Plan** (2000) further developed the themes of the previous policies, re-affirming support for rail freight;
- **Strategic Rail Authority Strategic Agenda** (2001) responded to The 10 Year Plan for transport to set the framework for the delivery of the rail component of the plan. The agenda adopted the "challenge of freight" as one of its nine guiding principles. The agenda highlighted the decline in British heavy industry, limiting growth in bulk freight, concluding that the focus of the strategy must be placed on switching non-bulk traffic from road to rail, particularly via major ports and the Channel Tunnel;
- **SRA Freight Strategy** (2001) provided a detailed strategy to promote the development of rail freight. It highlighted the benefits of rail freight, particularly with regard to reducing congestion and yielding environmental benefits, notably reductions in CO₂;
- **Planning Policy Guidance Note 13, Transport** (2001) highlighted the key role of land use planning in delivering an integrated transport strategy. Local authorities should give consideration to protecting sites and routes which could be critical in developing infrastructure or transport choices for passenger and freight. The land use planning system should promote movement of freight by rail where feasible;
- **Strategic Rail Freight Interchange Policy** (2004) set out the need, form, function and operating characteristics of Strategic Rail Freight Interchanges (SRFI), identified as being "key features of national rail infrastructure necessary to promote a shift from road to rail freight". The Department for Transport (DfT) confirmed in 2005 that much of the policy would be retained as a source of advice and guidance. It has since been cited by DfT Regional Planning Assessments. This policy guidance is described further below;
- **Planning Policy Statement 1 - Delivering Sustainable Development** (2005) seeks to promote sustainability through policies that reduce energy use / emissions and encourage patterns of development that reduce the need to travel by private car, or reduce the impact of moving freight;

- **Delivering a Sustainable Railway** (2007) set out a long-term ambition for a railway able to handle double today's level of freight and passenger traffic. It confirmed the importance of rail freight as a means of access to and from ports, delivering significant environmental benefits over other modes. The White Paper quoted industry forecasts of 30% growth in traffic (tonnes lifted) between 2004/5 and 2014/5 as being realistic. Noting constraints on the rail network (including existing rail freight interchanges), the report committed £200m towards the development of a Strategic Freight Network;
- **Towards a Sustainable Transport System** (2007) set out the priorities for transport policy to 2015 and beyond. It confirmed the commitment to a high-quality Strategic Freight Network and emphasised the importance of ensuring effective rail access to the ports;
- **Delivering a Sustainable Transport System** (2008) outlined the key goals for transport, including to support national economic competitiveness and growth, by delivering reliable and efficient transport networks, and to reduce transport's emissions of carbon dioxide and other greenhouse gases. The document identified key strategic transport corridors in the UK. The importance of logistics is acknowledged in a separate 'daughter' report;
- **Strategic Freight Network: The Longer-Term Vision** (2009) has set out the Government's proposals for creation of a core network of trunk freight routes, capable of accommodating more and longer freight trains, with a selective ability to handle wagons with higher axle loads and greater loading gauge, integrated with and being complementary to the UK's existing mixed-traffic network.

8.3 Network Rail Route Utilisation Strategies (RUS)

8.3.1 In order to translate the Government's High-Level Output Statement (HLOS) for the national rail network into a detailed programme, Network Rail has created a number of Route Utilisation Strategies (RUS).

8.3.2 Each RUS covers main line corridors (eg East Coast Main Line RUS) and/or distinct geographic areas (eg Yorkshire & Humberside RUS), to set out current rail traffic patterns and associated issues, from which to then consider and prioritise options for onward development of the rail network in each area. In addition there is a Freight RUS which covers freight-related issues across the network.

8.3.3 Relevant RUS policies include:

- **Freight RUS** (2007) – reiterates Government support and industry forecasts for rail freight growth, and sets out national programme for freight-related route enhancements;
- **East Coast Main Line RUS** (2008) – recommends comprehensive upgrading of the GN/GE Joint Line route from Peterborough to Doncaster via Spalding to accommodate an additional 2 freight trains per hour each way as well as current passenger and freight services, with upgrading or removal of level crossings where required by the increased train service frequency. Notes that if in the longer term (by 2036) a significant volume of traffic remains associated with East Anglian terminals, then Peterborough could become the critical capacity constraint for that traffic. If so the RUS suggests that the area could be avoided and a more direct route provided by reopening of the March – Spalding line, with partial deviation from the original alignment. The medium-term improvements within the upgrade of the GN/GE Joint Line will be designed to provide for this if required later;
- **Network RUS Scenarios & Long Distance Forecasts** (June 2009) – sets out long-range forecasting scenarios for rail freight growth between 2007 and 2031, ranging from 60-310% in international intermodal traffic, and between 200-1200% for domestic intermodal traffic, the latter dependent in part on development of inland rail freight interchanges to help deliver growth;
- **Yorkshire & Humberside RUS** (July 2009) – reiterates the freight upgrade of the Joint Line;
- **East Midlands RUS** (August 2009) – again reiterates the proposed upgrade of the Joint Line.

8.4 National policy guidance on rail freight interchanges

8.4.1 National policy guidance indicates that a need exists for a number of rail freight interchanges to provide a network of facilities across the UK. Whilst this policy guidance is directed towards larger strategic interchanges with regional catchment areas, this provides a useful context for any interchange development in or around Spalding:

“The success and growth of rail freight can only be sustained if there are enough Rail Freight Interchanges to enable modal shift.

Rail freight interchanges have an important role to play whether they are terminals for aggregates or waste, sub-regional interchanges or other rail-served industrial facilities and should be encouraged in the planning process, in accordance with Government policy.

However, this Policy is concerned with a particular class of interchange, the Strategic Rail Freight Interchange. They are needed in relatively small numbers to serve major conurbations and are key to delivering growth of rail in the general freight market.

These interchanges are long-term strategic infrastructure investments with operating lives going beyond 2020, with rail infrastructure, container handling and rail-connected warehousing, on a sufficient scale to enable critical mass for consolidation of trainload freight.

By creating facilities on a scale, which effectively creates a rail-connected distribution park or ‘village’, a wide range of businesses in the general freight market will be encouraged to locate their logistics operations, or production, where they have the option of rail or road transport.

This also has the economic benefit of reducing the viable distance of the rail trunk movement, improving competitiveness with road, by locating businesses with direct access to rail, taking out the ‘last mile’ double handling and transport cost.

In the longer term these interchanges will make a major, essential, contribution to developing the national strategic rail freight network, linking rail freight interchanges of all types, ports and the Channel Tunnel, connected by a range of competitive rail operator services.”

8.4.2 The national policy guidance sets out a hierarchy of rail freight interchanges (see Table 19 below), which based on the market research for Spalding suggests that the characteristics of any rail freight interchange built locally would fall within the “non-strategic sub-regional” category as highlighted below; albeit without the requirement for high-quality motorway links, given the localised catchment area for the traffic in Spalding.

8.4.3 This classification should be taken in the context of the national policy guidance, where the term “strategic” relates to sites with national / regional catchment areas, and should not be taken to infer that any site falling outside of the criteria does not then offer strategic opportunities to a sub-region or local area.

8.4.4 The key features of an SRFI are defined in the policy guidance as follows, and broadly align with the criteria as set out in RSS Policy 21:

- Suitable rail and road access;
- Ability for 24/7 working;
- Adequate level site area and potential for expansion;
- Proximity to workforce;
- Proximity to commercial customers, both existing and potential;
- Fit with primary freight flows in the area;
- Ability to contribute to the national network by filling ‘gaps’ in provision; and
- Fit with policy strategies.

8.4.5 From a national perspective therefore, the development of a rail freight interchange for the sub-region in and around Spalding would therefore be consistent with the above policies.

Table 19 National policy guidance on rail freight interchanges

Type of RFI	Function	Likely size (indicative only)	Transport requirements (indicative only)	Examples
Strategic	Major interchange with significant intermodal and warehousing, located at nationally strategic sites proximate to major conurbations	100 - 400 Ha	Requires high quality links to motorway and trunk road network. Rail links need high capacity and good loading gauge	Hams Hall; Daventry (DIRFT); Mossend
Non-strategic sub-regional	Large interchange with significant intermodal and warehousing, located at important sites within regions	20 – 250 Ha	Requires high quality links to motorway and trunk road network. Rail links need sufficient capacity and good loading gauge	Birch Coppice (BIFT); ProLogis Park Coventry; Potter Group, Selby; Malcolm Group, Grangemouth
Intermodal only	Interchange handling only intermodal traffic, often located at key points in urban areas	10 - 30 Ha	Requires good links to urban road and trunk road network. Rail links require sufficient loading gauge	Freightliner terminals (eg Lawley Street, Birmingham; AHC/ O'Connor Group, Widnes)
Rail-linked warehouse	Single warehouse unit providing rail services	10 - 30 Ha	Requires good links to urban road and trunk road network.	Carlisle Warehousing, DHL, Neasden

8.5 Regional policies and supporting research

8.5.1 The following policy documents and supporting research together set the framework for determining the scale and spread of potential rail freight interchange locations in the region, now encapsulated in the RSS:

- State of Freight in the East Midlands**, SKM for EMRLGA (2002): the Eastern sub-region includes the most significant cluster of, and focus for, food production and processing businesses in the UK, particularly around Spalding. The food industry has been attracted to this area through proximity to important sources of crops and to the ports, with land and labour being readily available and with lower costs, employing thousands of people and generating hundreds of HGV trips each day.
- The sub-region has few rail terminals or other rail facilities, but the proposed upgrade of the ECML would see rail freight services diverted through the area, offering important opportunities for rail. The concentration of food and agricultural industries in Lincolnshire may offer some opportunities for rail freight. However, the traffic is seasonal, diverse, and often requires temperature control, but even if rail can address these issues, potential will still be hampered by the lack of intermodal terminals in Lincolnshire, and particularly by the lack of rail connected food consolidation centres.
- The main location for food processing is Spalding. There are some opportunities to provide rail freight facilities in Spalding, however, these are limited by the potential to develop housing, or the need for significant investment. Donington has been considered in the past as a possible location for a rail terminal - the site would be relatively easy to connect. Several sites could be developed with rail connected warehousing, and these should be promoted to the food industry.
- Forecasts suggested potential for at least 5 trains per day of intermodal traffic by 2010 plus potential food and drink traffic of up to 13 trains per day. Traffic to or from associated rail connected warehouses would be additional to this. The forecast for rail freight can only be achieved if there is adequate provision of intermodal terminals and private sidings;
- SRA Strategic Rail Freight Interchange Policy** (2004): considered that the East Midlands was (in 2004) currently well provided for by existing interchange capacity and there was no immediate perceived need for new capacity, but noted that the region would need development of interchange capacity during the term of the then 10-Year Plan;
- East Midlands Regional Freight Strategy**, EMRA (2005): a potential new role for railfreight is envisaged for the food industry in the Region. If certain technical constraints are overcome, rail could be a realistic option for the Region's food producers, particularly in Lincolnshire.

Key Policy 5 encourages Regional and local partners to work together to identify and promote opportunities to achieve a significant shift from road to rail freight, with a target of increasing the tonnage per annum carried by freight trains originating or terminating in the region by 4.5 million tonnes over 2005 levels, represented by an extra 30 trains per day, of which two-thirds would be non-bulk.

Action 5.4 to address the need for new sub-regional intermodal terminals, and to progress opportunities for smaller transfer facilities.

Action 5.5 to encourage new and expanded rail flows by identifying potential new rail freight traffic, and in particular, progressing detailed work to unlock the potential for modal shift to rail freight for the food distribution sector.

Action 5.6 to pro-actively address the major opportunities for modal shift from road to rail in traffic passing through the Region, as well as that originating or terminating therein. This will involve sustaining a positive ongoing dialogue with the rail freight industry, its customers and potential customers, and neighbouring regions in order to increase understanding of its issues, and seeking to encourage appropriate specific and general infrastructure enhancements of the rail network.

- **East Midlands Strategic Distribution Study**, MDS, Roger Tym and Savills for EMDA (2006): New “strategic logistics sites” (or large plots on existing sites) will be required for future warehouse developments in the region which are greater than 25,000m². In order to meet the Regional Freight Strategy target of 30 additional freight trains, 1.64 million square metres or 55% of the forecast new build greater than 25,000m² will need to be located on rail linked sites.
- Taking into account the supply of large plots on existing sites and at strategic sites in the pipeline, 308 hectares of additional land at appropriate rail connected strategic logistics sites and 78 hectares of additional land at suitable non-rail connected sites will need to be brought forward over the life of the next RSS (to 2026).

- There is clearly significant potential for strategic logistics sites to be promoted by more detailed policies at a regional and local level. If the region is to maintain/enhance its market share as a leading location for logistics warehousing it is imperative that a transparent detailed policy framework, which balances policy and market objectives to realise the potential for the foreseeable future;
- **Toton Freight Terminal Economic and Commercial Feasibility Study**, Intermodality, Knight Frank and Laser Rail for EMDA, EMRA, Nottinghamshire County Council, Broxtowe Borough Council, Strategic Rail Authority and Highways Agency (2006): The East Midlands is the centre of gravity for the UK distribution industry, and the major manufacturers, retailers and the wider economy which depend upon it – the region needs to have greater recognition of this key asset as part of its unique selling proposition for investment.
- There is a healthy demand for, and supply of, B8 distribution development in the East Midlands, which out-performs every other region in this sector. However, constraints on development sites and labour access are forcing occupiers to look further north, with the risk that economic activity migrates into other regions, such as the North West and Yorkshire & Humberside.
- The rail freight industry continues to grow in the UK, and this is reflected in a range of expanding and new rail freight interchanges being developed in the West Midlands, delivering new rail freight traffic with little or no abstraction between sites.
- The contrast with the East Midlands could not be greater, with DIRFT effectively the only existing site in use. In strategic terms, there is a real need for new rail freight interchanges in the East Midlands, as confirmed by discussions with both industry and the local / regional authorities. This is reflected in the East Midlands Regional Freight Strategy, with the need to find interchange capacity to support / foster a target of 20 extra (non bulk) freight trains per day by 2015, which equates to finding at least 2 new interchanges in the region - and more than 80 Ha of land in the region to accommodate them;

- **'A Flourishing Region' The Regional Economic Strategy for the East Midlands 2006-2020** (EMDA) which sets out the vision for the region with a primary focus on economic growth. The strategy highlights the need to enable better connectivity within and outside the region (which it considers is vital in raising productivity) and the need to improve infrastructure. The document states that freight movements are an important enabler that serves many sectors of the economy and contribute directly to regional productivity. A regional priority is to improve the provision of inter modal freight facilities and rail gauge clearance for modern container traffic;
- **East Midlands Regional Plan (Regional Spatial Strategy, RSS8)** (2009): A further partial review of the RSS, looking at spatial planning issues through to 2031, is ongoing. The remit of this review includes ensuring that transport infrastructure and services can meet the needs of a growing population in a sustainable manner. The revised Regional Plan is not expected to be published until Autumn 2011. Relevant policies in the current Plan include:

Policy 3 Distribution of New Development:

Appropriate development of a lesser scale should be located in the Sub-Regional Centres, [including] in the...Eastern Sub-area: Boston, Grantham and Spalding.

New development in these areas should contribute to:

- maintaining the distinctive character and vitality of rural communities;
- shortening journeys and facilitating access to jobs and services;
- strengthening rural enterprise and linkages between settlements and their hinterlands; and
- respecting the quality of tranquillity, where that is recognised in planning documents;

In assessing the suitability of sites for development priority should be given to making best use of previously developed land and vacant or under-used buildings in urban or other sustainable locations, contributing to the achievement of a regional target of 60% of additional dwellings on previously developed land or through conversions.

In applying this policy the influence of major urban areas outside the Region should also be taken into consideration, particularly those fulfilling the role of PUAs for parts of the East Midlands, i.e. Peterborough, South Yorkshire and Greater Manchester, where policies in regional strategies for neighbouring regions will be relevant.

Policy 4 Development in the Eastern Sub-area: Development in the Eastern Sub-area should...

- consolidate and where appropriate strengthen the Sub-Regional Centres of Boston, Grantham and Spalding;
- strengthen the role of the food production and distribution industry;
- promote sustainable patterns of development in those parts of the Sub-area bordering major urban areas in other regions, in particular Peterborough;
- protect the landscape and natural beauty of the Lincolnshire Wolds AONB;

Policy 6 Overcoming Peripherality in the Eastern Sub-area: Peripherality and lack of accessibility in the central and eastern parts of the Sub-area should be addressed through:

- a programme of infrastructure improvements that concentrates on public transport and road improvements in existing key transport corridors;
- improved connections both between the Region and its ports and between its ports and mainland Europe; and improvements to its telecommunications networks; and
- multi-modal accessibility improvements both within and beyond the Sub-area.

Policy 18 Regional Priorities for the Economy: Local authorities in all parts of the region should work together with EMDA and other organisations with relevant responsibilities to encourage and foster the regional economy through implementing the Regional Economic Strategy. It will be especially important to raise skill levels, develop the service sector and high value manufacturing and create innovative businesses, so that the region is better placed to maintain economic competitiveness;

Policy 19 Regional Priorities for Regeneration:

Regeneration activity should be focussed on areas of greatest identified need. These include...

- the Region's Principal Urban Areas and Sub-Regional Centres that exhibit very high and concentrated levels of deprivation;
- 'economically lagging' rural areas identified by the Government's Rural Strategy, including the districts of East Lindsey, West Lindsey, South Holland, Bolsover, High Peak and the more rural parts of Derbyshire Dales, Bassetlaw and Newark and Sherwood;

For regeneration to be successful concerted action is needed across the whole spectrum of local governance and local development documents should translate this into the action required locally. In addition regeneration of all priority areas must conform with the strategy of urban concentration set out in Policy 3.

Policy 20 Regional Priorities for Employment Land:

Local authorities, EMDA and sub-regional strategic partnerships should work together in housing market area groupings to undertake and keep up to date employment land reviews to inform the allocation of a range of sites at sustainable locations. These allocations will:

- be responsive to market needs and the requirements of potential investors, including the needs of small businesses;
- encourage the development of priority sectors as identified in the Regional Economic Strategy, namely

transport equipment, food and drink, healthcare and construction as well as specific sectors which have local economic significance;

- serve to improve the regeneration of urban areas;
- ensure that the needs of high technology and knowledge based industries are provided for;
- promote diversification of the rural economy;
- assist the development of sites in the Priority Areas for Regeneration; and be of a scale consistent with the essential policy of urban concentration as set out in Policy 3;

8.5.2 The supporting text to Policy 20 draws on the findings of a number of studies on employment land that have been undertaken by the regional planning body and EMDA. These include The Quality of Employment Land Supply Study (QUELS 2002) and the Regional Employment Land Priority Study (RELPS) 2003.

8.5.3 These studies have found that at the general level there will be a significant decline in demand for industrial floorspace, but that this overall picture hides a much more dynamic pattern of gains and losses, and sectoral trends, such as an apparent shortage of sites for high tech uses and a high demand for strategic 'B8' logistics sites. The quality and location of existing employment land designations also may not always be consistent with market demands or sustainability principles.

8.5.4 The RSS suggests that Local Planning Authorities should therefore ensure that allocated sites for employment uses are consistent with priorities contained in the Regional Economic Strategy and are attractive to the market. A range of different sites should be provided, and consideration should be given to enhancing marketability by means such as the provision of essential infrastructure, remediation or measures to enhance attractiveness.

8.5.5 Local Planning Authorities will also need to consider whether currently allocated or safeguarded sites are likely to become surplus to future requirements. In such cases they should consider what other uses might be appropriate in line with PPS3.

8.5.6 In identifying need and provision for employment land, Local Planning Authorities should work together in the same groupings as those identified for the purposes of developing Housing Market Area Assessments. This will encourage a balanced approach to housing and employment development.

8.5.7 In the Eastern Sub-area, the RSS notes a limited supply of office space in Lincoln where significant growth is planned as part of the Lincoln Area SRS. There is an apparent over-supply of allocated industrial land, particularly in the north of the Sub-area. However, the RSS suggests that low land values and severe local constraints mean that selective public intervention will be required to ensure an adequate supply of serviced land that can be developed by the market. This will be an important consideration in the context of ‘pump-priming’ the developing rail-linked facilities in the Spalding area on a speculative basis.

- appropriate railway wagon reception facilities and parking for all goods vehicles;
- a need for such facilities due to demand from the logistics industry;
- a location which allows 24 hour operations and which minimises environmental and community impact;
- good access to labour; and
- the need to avoid locations near to sensitive nature conservation sites that have been designated as being of international importance, or that would directly increase traffic levels that would harm such sites.

Policy 21 Strategic Distribution: Local authorities, EMDA, Sub-Regional Strategic Partnerships, the Highways Agency and Network Rail should work together with private sector partners to bring forward sites for strategic distribution use in the region with preference to sites in the following broad locations:

- West Northamptonshire housing market area;
- Derby housing market area;
- Nottingham Core housing market area;
- North Northamptonshire housing market area;
- Leicester and Leicestershire housing market area.

In allocating sites in local development documents local authorities should give priority to sites which can be served by rail freight, and operate as inter-modal terminals. Consideration should be given to the following criteria:

- good rail access with routes capable of accommodating large maritime containers, the ability to handle full length trains, available capacity and full operational flexibility;
- good access to the highway network and to appropriate points on the trunk road network;
- suitable configuration which allows large scale high bay warehousing, inter-modal terminal facilities,

8.5.8 The supporting text to Policy 21 states that there is currently around 5 million square meters of distribution centre floor space in the East Midlands. Over the last 10 years there has been a sharp increase in the demand for strategic distribution sites over 25,000 square metres, particularly in the Southern Sub-area and parts of Leicestershire.

8.5.9 This demand is driven by changes in logistics resulting from globalisation, and the emergence of new business models such as ‘e-tailing’ which require national distribution centres.

8.5.10 It is unclear for how long this level of demand will continue, but it is proving difficult to accommodate on existing employment sites. Market analysis suggests that failure to meet this demand in the East Midlands is likely to see such activity displaced to neighbouring regions, in particular the West Midlands.

8.5.11 Although the RSS notes that such developments may tend to generate more and better jobs than traditional B8 uses, there are significant implications for land-take and the strategic trunk road network that need to be fully considered.

8.5.12 As a result, it is important that particular consideration is given to maximising potential for rail freight and reducing the environmental impact of any new development.

8.5.13 The RSS summarises the output of the East Midlands Strategic Distribution Study (EMSDS) which has provided a technical study of logistics and the regional economy, with a number of important findings including:

- that logistics accounts for an estimated 9% of both jobs and output (GVA) in the East Midlands – a higher share than in any other region;
- labour productivity and earnings in logistics are above the economy wide average for the service sector, though below those for manufacturing;
- in order to meet the Regional Freight Strategy target of an additional 30 freight trains per day around an additional 308 hectares of rail connected strategic distribution sites should be brought forward by 2026;
- for non-rail connected sites an additional 78 hectares of land should be brought forward by 2026 although the existing supply of non-rail linked sites should be sufficient during the early years of the Regional Plan;

8.5.14 Based on the findings of the EMSDS, Policy 21 identifies those HMAs where additional land for strategic distribution sites should be brought forward with priority being given to sites which can be served by rail freight.

8.5.15 The EMSDS indicates that rail connected sites should be large and have sufficient critical mass in terms of site size to generate sufficient demand for freight train services to/from a number of locations.

8.5.16 The EMSDS indicates this critical mass to be around 200,000 square metres, implying a site area of around 50 hectares (assuming a 40% ratio of development floorspace to total site area). However, Policy 21 is not prescriptive in terms of site size as it notes that smaller sites can generate sufficient demand for freight train services and should not be ruled out.

8.5.17 This is important in the context of a facility for Spalding, as the nature of the fresh produce market dictates short storage times and frequent deliveries generating a lower land requirement. As a result of a combination of factors, the initial demand for rail connected floorspace may not be sufficient to warrant a 50 ha site, albeit the market research indicates that demand could grow in the medium term once the rail facilities are established (as at DIRFT).

Policy 43 Regional Transport Objectives: The development of transport infrastructure and services across the Region should be consistent with the following Objectives:

- To support sustainable development in the Region's Principal Urban Areas, Growth Towns and Sub-Regional Centres described in Policy 3;
- To promote accessibility and overcome peripherality in the Region's rural areas;
- To support the Region's regeneration priorities outlined in Policy 19;
- To promote improvements to inter-regional and international linkages that will support sustainable development within the Region;
- To improve safety across the Region and reduce congestion, particularly within the Region's Principal Urban Areas and on major inter-urban corridors;
- To reduce traffic growth across the Region; and
- To improve air quality and reduce carbon emissions from transport by reducing the need to travel and promoting modal shift away from the private car, (particularly towards walking, cycling and public transport and away from other road based transport) and encouraging and supporting innovative transport technologies.

Policy 44 Sub-area Transport Objectives: The development of transport infrastructure and services in the Eastern Sub-area should also be consistent with the following Objectives:

- E1 To develop the transport infrastructure, public transport and services needed to support Lincoln's role as one of the Region's five Principal Urban Areas in a sustainable manner.
- E2 To develop opportunities for modal switch away from road based transport in the nationally important food and drink sector.
- E3 To make better use of the opportunities offered by existing ports, in particular Boston, for all freight movements, and improving linkages to major ports in adjacent Regions such as Grimsby, Immingham and Felixstowe.
- E4 To improve access to the Lincolnshire Coast, particularly by public transport.

- E5 To reduce peripherality, particularly to the east of the A15, and overcoming rural isolation for those without access to a private car.
- E6 To reduce the number of fatal and serious road traffic accidents.

- supporting the sustainable growth of airfreight at EMA by improving rail freight connectivity and identifying opportunities for modal shift from air to rail;
- promoting a greater use of pipelines; and
- ensuring integration with land-use planning, environmental and economic strategies.

Policy 50 Regional Heavy Rail Priorities: DfT Rail, Network Rail, Local Authorities, public bodies, community rail partnerships and train operating companies should work together to achieve improvements in rail passenger services. This will be supported by:

- the identification and implementation of regional and sub-area based heavy rail investment priorities subject to full and detailed appraisal;
- support for Community Rail Routes and services;
- consideration of possible new high speed rail routes serving the Region; and
- improvements in the performance and reliability of existing rail services.

8.6 Policy appraisal

8.6.1 Table 20 below summarises the wider policy framework from national to District level (excluding supporting research) to consider how these would align with an interchange development in or around Spalding:

Policy 55 Implementation of the Regional Freight Strategy: The Regional Planning Body should work with EMDA, Local Transport Authorities, other public bodies and representatives of the freight industry and its customers to implement the Regional Freight Strategy. Key priorities include:

- reducing the environmental impact of all freight;
- improving the efficiency of the road haulage industry in ways that will also reduce the impact on the environment;
- expanding the usage of inland waterways and coastal navigation;
- achieving a significant modal shift from road to rail;
- identifying new strategic distribution sites, where these can be justified, in line with Policy 21 (Strategic Distribution);

Table 20 Policy appraisal summary table

Policy	Supportive of RFI development	Conflicts with RFI development
Sustainable Distribution	Supports modal shift of freight to rail, with savings in energy, emissions, road congestion and accidents	Subject to the location of the interchange and impact on local community and environment
Transport 2010	As above	
SRA Strategic Agenda	As above, particularly for non-bulk freight and for freight to and from ports and Channel Tunnel	
SRA Freight Strategy	As above	
PPG13	Supports identification and protection of land for a rail freight interchange to provide more modal choices for freight movement to and from the local area	Subject to the location of the interchange and impact on local community and environment
SRA Strategic RFI Policy / DfT Strategic RFI policy guidance	Encourages local planning authorities to identify and protect sites for interchange development, criteria suggests any development at Spalding would be a sub-regional non-strategic facility in national terms	Subject to the location of the interchange and impact on local community and environment
Delivering a Sustainable Railway	Supports increased modal shift of freight to rail	
Towards a Sustainable Transport System	Supports effective rail access to the ports and the development of a Strategic Freight Network (SFN)	
Delivering a Sustainable Transport System	Supports national economic competitiveness and growth, by delivering a reliable and efficient transport network, which can help reduce transport's emissions of carbon dioxide and other greenhouse gases.	
Strategic Freight Network: The Longer-Term Vision	Supports enhancement of the GE/GN Joint Line	
Network Rail Freight RUS	Supports increased growth in rail freight traffic and freight-related enhancement of the rail network	Subject to the operational and engineering feasibility of any RFI development and impact on the rail network
Network RUS	Provides long-range growth forecasts for rail freight, with positive growth for international and domestic intermodal services in all scenarios	Subject to the operational and engineering feasibility of any RFI development and impact on the rail network
East Coast Main Line RUS	Supports comprehensive upgrading of the GN/GE Joint Line and possible future reinstatement of March – Spalding line	As above
Yorkshire & Humberside RUS	Supports comprehensive upgrading of the GN/GE Joint Line	As above
East Midlands RUS	Supports comprehensive upgrading of the GN/GE Joint Line	As above

Table 20 (continued)

Policy	Supportive of RFI development	Conflicts with RFI development
East Midlands Regional Freight Strategy		
Page 6	Envisages a potential new role for rail freight for the food industry in the region particularly in Lincolnshire	
Key Policy 5	Supports increased modal shift to rail, particularly for non-bulk freight	
Action 5.4	Supports need for new sub-regional rail freight interchanges	
Action 5.5	Encourages new and expanded rail freight flows, particularly for unlocking opportunities in food distribution	
Action 5.6	Pro-actively address major opportunities for modal shift	
East Midlands Regional Economic Strategy	Emphasises contribution of freight to regional productivity. Identifies the provision of inter modal freight facilities as a regional priority. Primary focus on improving inter and intra - regional productivity.	
East Midlands Regional Plan (RSS8)		
RSS Policy 3 Distribution of New Development	Supports appropriate new development of a lesser scale in Spalding	Subject to addressing development criteria (character, accessibility, enterprise and tranquillity) and priority for previously-developed land
RSS Policy 4 Development in the Eastern Sub-area	Supports strengthening Spalding where appropriate in terms of sustainable employment, particularly in food production and distribution	Subject to protecting natural landscapes and habitats
RSS Policy 6 Overcoming Peripherality in the Eastern Sub-area	Supports infrastructure improvements, improved connection with ports and mainland Europe, improved multi-modal accessibility	
RSS Policy 18 Regional Priorities for the Economy	Supports local authorities working together with EMDA and other relevant organisations to encourage and foster the regional economy	
RSS Policy 20 Regional Priorities for Employment Land	Encourages priority sectors including food and drink, specific sectors which have local economic significance, and promotes rural diversification	
RSS Policy 21 Strategic Distribution	Encourages local authorities and other partners to bring forward sites for strategic distribution use in the region, with priority for sites which can be served by rail freight and operate as intermodal terminals, subject to consideration of key criteria	Spalding / South Holland not identified as a preferred area for strategic distribution development, any local interchange development would need to be considered against key criteria

Table 20 (continued)

Policy	Supportive of RFI development	Conflicts with RFI development
RSS Policy 43 Regional Transport Objectives	Supports development of those transport infrastructure and services consistent with Policy 43 objectives, including supporting sustainable development in Sub-Regional Centres such as Spalding, promoting accessibility and reducing peripherality in rural areas, improve international linkages, reduce traffic congestion, growth and carbon emissions, promoting modal shift	
RSS Policy 44 Sub-area Transport Objectives	Supports development of transport infrastructure and services consistent with Policy 44 objectives, including development of opportunities for modal switch of food and drink away from road, improve linkages to ports and reduce peripherality	
RSS Policy 50 Regional Heavy Rail Priorities	No mention of freight	Encourages local authorities and other partners to achieve improvements in passenger services – a new rail freight interchange and freight services may be seen as a perceived threat to capacity / reliability of passenger services
RSS Policy 55 Implementation of the Regional Freight Strategy	Encourages the Regional Planning Body to work with other partners to implement the Regional Freight Strategy, key priorities to include achieving a significant modal shift from road to rail, identifying new strategic distribution sites, and ensuring better integration with land-use planning, environmental and economic strategies	
The Lincolnshire Local Transport Plan	LTP objectives include assisting sustainable economic growth through improvements to transport network, removing unnecessary HGVs from affected communities through (<i>inter alia</i>) encouraging use of alternative modes, and to maintain the transport system to standards which allow safe and efficient movement of goods	Local road traffic generation from a new interchange development could conflict with LTP objectives to protect and enhance the built environment by reducing the adverse effects of traffic, and to maintain the transport system to standards which allow safe and efficient movement of people
South Holland Local Plan		
Local Plan Policy SG1 General Sustainable Development	An interchange development which retains or boosts local employment could be seen to enhance the local quality of life and to help conserve energy	Equally, and subject to location and scale, an interchange development which creates a new built form and 24/7 activity could be perceived to impair local quality of life and/or damage environmental assets
Local Plan Policy SG2 Distribution of Development	Subject to location and scale, a new interchange could be designed to be served by transport modes (eg car and public transport) and have acceptable levels of traffic generation	Initial research into broad locations suggests the most favourable locations will not involve previously developed land, and in order to locate an interchange sufficiently far from residential areas is likely to require greenfield land outside of defined settlement limits

Table 20 (continued)

Policy	Supportive of RFI development	Conflicts with RFI development
Local Plan Policy SG3 Settlement Hierarchy	Support for development of a new interchange will be subject to location and scale against relevant level of hierarchy	Conflict with development of a new interchange will be subject to location and scale against relevant level of hierarchy
Local Plan Policy SG4 Development in the Countryside	Support for development of a new interchange will depend on location and scale, and demonstrating over-riding need and lack of suitable alternative sites / solutions (eg movement by road throughout or by road to a distant rail terminal)	Ditto for potential conflicts
Local Plan Policy SG6 Community Infrastructure and Impact Assessment	Subject to location and scale, a new interchange could provide developer contributions for community infrastructure and services, for example provision for cycleways, footpaths and public transport services	A sub-regional interchange for Spalding may be constrained in the scope to provide developer contributions
Local Plan Policy SG7 Energy Efficiency	Beyond the use of rail as a more energy-efficient mode of transport compared to road haulage, modern distribution development can, subject to scale and commercial viability, offer considerable opportunities for promoting energy-efficient construction and operation	
Local Plan Policy SG11 Sustainable Urban Drainage Systems (SUDS)	Modern interchange and distribution developments will typically include SUDS within their design	Conflicts with policy will depend on the location, scale and nature of proposed SUDS installations
Local Plan Policy SG12 Sewerage and Development	Scope exists within modern interchange and distribution developments to have self-contained / sustainable means to deal with sewage, or to connect new sites into existing sewage systems where feasible	Conflicts with policy will depend on the location, scale and nature of proposed sewage treatment / disposal arrangements
Local Plan Policy SG13 Pollution and Contamination	Policy support will depend on the location, scale and nature of proposed development and associated pollutants or contaminants (likely to be mainly from noise and light which can be contained to a degree by careful design)	Potential for conflict with policy on grounds of noise and light pollution, as the flat terrain will create challenges to completely mask noise and light from surrounding areas without extensive landscaping (which could create additional visual impacts). In addition, the Morrisons abattoir in Spalding has been the subject of complaints about odours, requiring careful consideration of sites for a rail interchange, should firm evidence of market demand for the co-location of similar activities be identified
Local Plan Policy SG14 Design and Layout of New Development	Limited to scope to attract policy support for an interchange/ distribution development based on making a positive architectural or visual contribution to its surroundings as perceived by local residents	The relatively stark and rectilinear nature of distribution development, particularly for major schemes, will make this policy a particular challenge
Local Plan Policy SG15 New Development: Facilities For Road Users, Pedestrians And Cyclists	The relatively flat local terrain lends itself to distribution development which can accommodate suitable means of access for pedestrians (including people with disabilities) and cyclists.	Potential conflicts with the routing of footpaths through interchange developments, due to the need for high-security arrangements which may restrict access across a site

Table 20 (continued)

Policy	Supportive of RFI development	Conflicts with RFI development
Local Plan Policy SG16 Parking Standards in New Development	As the policy indicates, scope exists to obtain policy support through negotiation of specific provision	Potential conflicts may arise if parking provision cannot be agreed
Local Plan Policy SG17 Protection of Residential Amenity	Dependent on the scale and location of any interchange development relative to residential areas, and any proposed noise or visual mitigation	Dependent on the scale and location of any interchange development relative to residential areas and any proposed noise or visual mitigation
Local Plan Policy SG18 Landscaping of New Development	As noted above, whilst landscaping can be provided for new interchange developments, the local terrain will make it unlikely that a development can be completely hidden without extensive bunding and planting, which might be considered equally unacceptable in visual terms (see Howbury Park case study in section 3)	The extent of conflict with policy will depend on the scale and location of any development and associated landscaping proposals
Local Plan Policy SG19 Protection of Open Spaces	Dependent on scheme location, scale and design, but refer to comments on visual aspects above	Dependent on scheme location, scale and design, but refer to comments on visual aspects above
Local Plan Policy EC1 Major Employment Areas- Sites Allocated for Employment Use	Dependent on preferred location for any interchange development relative to sites nominated in policy, and if not in these areas then demonstrating over-riding lack of suitable alternative sites	Dependent on preferred location for any interchange development relative to sites nominated in policy, and if not in these areas then demonstrating over-riding lack of suitable alternative sites
Local Plan Policy EC3 Existing Employment Areas/Premises	Dependent on scale and location	Dependent on scale and location – but initial appraisal of suitable broad locations for interchange development are likely to fall outside of existing employment areas
Local Plan Policy EC13 The Northern Expansion Area, Spalding	Whilst the Northern Expansion Area is likely to be too small for even a basic interchange, it should be noted that any redevelopment will sever any chance of reinstating rail access to the Wardentree Lane estate from the south. Note also that any new rail interchange and associated sidings located outside of Spalding might in turn offer scope for Network Rail to remove the existing redundant sidings within the Northern Expansion Area	Any proposal to reinstate rail access through this area, or attempt to create a small interchange on the site, would then conflict with the policy
Local Plan Policy TC1 Safeguarding Road Routes	Dependent on location and design – there may be scope for a new interchange development to support or facilitate local or county road schemes	Dependent on location and design
Local Plan Policy TC2 Cycling, Cycleways	As noted earlier, the relatively flat local terrain lends itself to distribution development which can accommodate suitable means of access for pedestrians (including people with disabilities) and cyclists.	Potential conflicts with the routing of cycleways through interchange developments, due to the need for high-security arrangements which may restrict access across a site

- 8.6.2 The conclusion from the above analysis of policy is that the principle of a new rail freight interchange (with or without associated development) would align with national, regional and County policies promoting modal shift, particularly in the food and drink sector (regional and County level). This would then in turn align with County and District policies seeking to support and enhance the local economy through promotion of sustainable development, and to reduce road traffic growth and associated impacts.
- 8.6.3 The challenge from a policy perspective will be to identify suitable site(s) for interchange development, as this will need to reconcile conflicting objectives, primarily between:
- a) minimising any adverse impacts on the local quality of life (eg noise, visual and air pollution, road and rail traffic levels) and environment;
 - b) the sequential test, prioritising new development on previously-developed land in the first instance;
 - c) minimising loss of high-grade agricultural land.
- 8.6.4 This suggests that, if consideration is to be given to progressing an interchange development by public and/or private sectors, the focus should be on development of a suitably robust 'need case' and alternative sites assessment. The local planning authority will need to be satisfied that there is not only an over-riding need for such a development, but that any preferred broad location(s) or specific site(s) have been identified through a rigorous site-selection process, eliminating other alternatives as far as possible.

9 Conclusions and recommendations

9.1 Conclusions

- 9.1.1 The origin for this study can be traced back to the East Midlands State of Freight Study in 2002 and the subsequent Regional Freight Strategy in 2005, both of which identified prospects to achieve modal shift of food and drink traffic from road to rail, particularly in Lincolnshire and within this, in and around Spalding.
- 9.1.2 Seven years on, the response from the major retailers, as the principal source of demand for the food industry in Spalding, has reconfirmed the opportunity, with a combined level of interest (matched by a number of consolidators and distributors) which we could consider to be unprecedented at such an early stage, where no suitable site currently exists locally to effect access to the rail network.
- 9.1.3 This study has also confirmed earlier research undertaken by the University of Lincoln in terms of the significant volume and distribution of traffic across the UK, including to relatively distant regions where rail can provide a competitive alternative to road haulage services. There is also evidence that rail is already being used within some of these movements, albeit incurring considerable mileage by road from the Spalding area to the nearest suitable rail terminal offering connecting services.
- 9.1.4 The upgrading of the Joint Line through Spalding for freight traffic presents an opportunity for a new rail freight interchange to be created, exploiting not only the new capabilities of the route, but also to seek synergies in developing the rail access into the site as part of the upgrade programme.
- 9.1.5 Whilst it is apparent that development of an interchange in and around Spalding would align with a raft of national, regional and local policies, as well as offering commercial and environmental opportunities for companies located (or wishing to locate) in the area, the basic interchange activity will itself be unlikely to create a business case capable of private-sector funding.
- 9.1.6 Any interchange development will therefore either require public-sector funding to “pump-prime” investment, drawing on precedents elsewhere in the creation of interchanges and food-related business clusters, and/or be accompanied by value-added development integrated with the interchange to provide additional investment contributions.
- 9.1.7 It is also apparent from discussions with the market that the creation of rail freight interchange facilities is unlikely to be an open-ended window of opportunity, as the current level of interest will not be sustained indefinitely. Without rail access, business will either further embed supply chains into wholly road-based solutions (for example using double-deck trailers), or may look to a growing number of regional rail-linked distribution parks and industrial estates with better multi-modal access. If the potential for modal shift and additional inward investment is to be realised, those interested parties will be looking for early signs of engagement by potential delivery partners in the public and private sectors.
- 9.1.8 A stakeholder event was held in Spalding in September 2009, which attracted a substantial audience from the rail freight industry (including the four largest rail freight operators), property developers, local business and the public sector. The event has reaffirmed the current strength of interest and the opportunity to include rail access works within Network Rail’s upgrading of the Joint Line.
- 9.1.9 As indicated above, there is now an urgent need to determine whether (and if so where) a new facility should be developed, not only to capture the current market interest, but also to secure the rail works within the Joint Line Upgrade. In order to achieve this, Network Rail will need outline information on the scheme location and rail access arrangements before Summer 2010 at the latest.

9.2 A recommended way ahead

- 9.2.1 The broader opportunity is to create a new focus for the agricultural and food industry in Spalding, which reflects the range of locations locally and around the world which serve, or are served by, the existing local facilities. A Rail Freight Interchange (RFI) development would set a suitable context for this opportunity, containing the following facets:
- A major integrated development, able to cater for (and attract in) employment and investment over the medium to long term;
 - A range of plot and building sizes, able to cater for small, medium and large-sized companies;
 - A range of permitted uses on site, including processing, storage, distribution and other business support services (possibly with combined heat and power facilities on site using waste materials);
 - A sustainable enterprise hub, where co-located companies active in the food sector can more easily share expertise, innovation and services;
 - Accommodation for learning and skills training (eg a satellite campus for the University of Lincoln), and to provide space for 'incubator' SME start-ups;
 - Intermodal access and interchange facilities at the heart of the site, providing modal choice from the outset and promoting modal shift over the medium to long term;
 - Opportunities to develop meaningful public-transport solutions through having a critical mass of employees on site;
 - Opportunities to create new or replacement wildlife habitats as part of the landscaping strategy.
- 9.2.2 This combination of the two established concepts of 'food clusters' and 'freight villages' would be unique in the UK, but reflects established practice in other countries such as Italy.
- 9.2.3 In terms of space requirements for any IFP development, the following summary defines the broad range of parameters:
- Average size of food clusters at Bradford , Grimsby and Shrewsbury 65 Ha;
 - Agricultural and Food Centre, Quadrante Europa, Verona 60 Ha;
 - Minimum size for a nationally-significant rail freight interchange (Planning Act 2008) 60 Ha;
 - Average size of all existing rail freight interchanges in England and Wales 54 Ha;
 - Pro-rated space requirements from 5 market research respondents 29 Ha.
- 9.2.4 This is then set in context against the existing 240 Ha of industrial floorspace in South Holland at present, suggesting that a 60 Ha IFP would represent a 25% increase in floorspace, assuming that the existing floorspace then remained in use for industrial purposes, rather than be converted over time to other uses.
- 9.2.5 In terms of phasing, we would recommend that a 60 Ha area of land is identified and safeguarded within the local planning framework, using some or all of the criteria identified in this report, from which the following phasing would then be progressed:
- Phase 1: 10 Ha footprint, based on a 'core' facility including road and rail access and initial floorspace (5 Ha) and intermodal transfer facilities (5 Ha);
 - Phase 2: 20-30 Ha footprint, releasing further floorspace adjacent to Phase 1;
 - Phase 3: 20-30 Ha footprint, releasing further floorspace (and expansion of the intermodal facilities to 10 Ha) around Phase 1 and 2.
- 9.2.6 This would then provide a phased release of 50-55 Ha of development, equating to 200-220,000m² of floorspace and 2,100 – 4,400 jobs, with a 5-10 Ha intermodal terminal.

- 9.2.7 With regard to funding, it is apparent that regardless of the current economic climate, a wholly private-sector led scheme is less likely to be achieved due to the niche nature of the activities and location, in an area where secondhand floorspace with low/depressed values remains empty. In order to tap into the current strength support for rail-linked facilities, a public/private sector development model should be considered to enable progress to be made.
- 9.2.8 In line with the proposed phasing, we would recommend the development of a business case which commences with Phase 1 being 'pump-primed' by the public sector, drawing on the experience of projects such as:
- Shrewsbury Food Enterprise Park (10 Ha / £4m public-sector funding);
 - Donington rail freight interchange, Telford (9 Ha / £8m public-sector funding);
 - Europarc food-related business park, Grimsby (52 Ha / £30m+ public-sector funding).
- 9.2.9 In conclusion, there is a major and unprecedented opportunity to reinforce the position of South Holland as a key link in the international supply chain for the food industry, through creation of a new Rail Freight Interchange, which can promote both economic and environmental sustainability into the longer term. The Park offers scope to attract more than £200m of investment into the local economy, creating up to 4,400 jobs on site, together with indirect benefits in the surrounding area of a magnitude of 1.2 to 1.4 times the direct benefits delivered on site.
- 9.2.10 The window of opportunity is very short, with a critical decision on whether to proceed and if so where being required by Summer 2010 at the very latest, in order to secure synergies between the first phase of any development, requiring at least £10m of investment, and Network Rail's £233m Joint Line Upgrade programme. This would enable the earliest possible installation of the critical rail access, at some point between January 2011 and December 2013, as the catalyst to the wider phases of development.
- 9.2.11 The priority is now for the District Council and other stakeholders to determine whether, and if so where, such a Park might be located in broad terms, to then move quickly to secure initial offers of funding for Phase 1, and create an outline planning brief which enables Network Rail to make provision for the necessary rail access points. Suitable consultation must then take place with the local community, local business and other industry stakeholders, to secure and maintain a strong level of support for the proposals and address the range of issues associated with such a development.