

Warehousing and Logistics in Leicester and Leicestershire: Managing growth and change

Leicester and Leicestershire Authorities

Final Report

April 2021 (amended March 2022)

Prepared by

GL Hearn
65 Gresham Street
London EC2V 7NQ

T+44 (0)20 7851 4900
glhearn.com

With
MDS Transmodal Ltd
Iceni Projects Ltd

Public

Contents

	Section	Page
0	EXECUTIVE SUMMARY	10
	Key messages from the report	10
1	INTRODUCTION AND CONTEXT	20
	Context	21
	Study Area	21
	Stakeholders	23
2	DRIVERS FOR CHANGE IN THE LOGISTICS MARKET	24
	Better Delivery: The Challenge for Freight	24
	National Planning Policy Framework and Planning Practice Guidance	31
	National Planning Statement for National Networks	34
	The Growth of E-commerce	35
	Rail Freight Trends and Forecasts	41
	Rail Network Enhancements	45
	Highway Network Enhancements	50
	Brexit	52
3	WAREHOUSING STOCK POSITION (2019)	60
4	PROPERTY MARKET REVIEW	67
	Warehouse / Industrial Market Review	67
	Warehousing Floorspace	70
	Agent Consultation: Key Drivers and Trends	82
5	EXISTING SRFI RAIL FREIGHT VOLUMES	85
6	WAREHOUSE LAND SUPPLY AND SUPPLY TRAJECTORY, LEICESTERSHIRE AND 'GOLDEN TRIANGLE'	87
7	ESTIMATES FOR FUTURE STRATEGIC WAREHOUSING NEED – LABOUR DEMAND AND COMPLETIONS TRENDS	90
	Labour Demand Model	90
	Baseline Forecasts	94
	Completions Trend Model	98
8	ESTIMATES FOR FUTURE STRATEGIC WAREHOUSING NEED – REPLACEMENT AND TRAFFIC GROWTH	102
9	TESTING DEMAND FORECASTS AND SUPPLY	113
	Road Only Sites – Demand and Supply	122
10	FUTURE WAREHOUSE FLOORSPACE GROWTH SCENARIOS SUMMARY	127

	Completions Trend Model	127
	Labour Demand Model	128
	Replacement and Traffic Growth Model	128
	Margin for Flexibility	129
	Model Summary and Preferred Scenarios for testing	130
	Forecast Demand Preferred Scenario and Future Site Supply	132
	Key risks and assumptions	134
11	FUTURE DEVELOPMENT – AREAS OF OPPORTUNITY	137
12	MONITORING	144
13	FLOORSPACE SCENARIO IMPLICATIONS ON EMPLOYMENT	147
	Job Creation	147
	Types of job growth	152
	Effects on the FEMA and adjacent FEMAs	155
	Local Authority Commuting Analysis	158
	Housing Implications	159
14	LABOUR AND SKILLS	163
	Commuting patterns	163
	Labour force composition	167
15	HGV PARKING	171
	Parking for Non-operational Reasons – Spatial Implications	173
	Consequences of Parking at Inappropriate Locations	175
	HGV Parking – Facilities Required	177
	Need and Facility Development in Leicestershire	179
16	PLANNING POLICY AND DISTRIBUTION DEVELOPMENT	181
	Providing facilities: Last mile / Point of delivery	181
	Freight Optimisation	183
17	CONCLUSIONS & RECOMMENDATIONS	191
APPENDIX A:	E COMMERCE LOGISTICS MODELS	198
APPENDIX B:	LARGE SCALE WAREHOUSE FLOOR SPACE BY BILLING AREA – EAST MIDLANDS (VOA 2019)	200
APPENDIX C:	STUDY AREA SUPPLY APRIL 2020	204
APPENDIX D:	WIDER AREA SUPPLY APRIL 2020	205
APPENDIX E:	MAP OF STRATEGIC WAREHOUSING LOCATIONS BY AGE	207
APPENDIX F:	DEVELOPMENT SIZE AND FLOOR SPACE: SELECTED DEVELOPMENTS	208

List of Figures

FIGURE 1:	FIGURE: WIDER ‘GOLDEN TRIANGLE’ STUDY AREA	22
FIGURE 2:	E-COMMERCE RETAIL SALES 2007-2019	36
FIGURE 3:	DOMESTIC FREIGHT MOVED IN GB	42
FIGURE 4:	CHANGE IN INDUSTRIAL FLOORSPACE, 2002-19	71
FIGURE 5:	STRATEGIC INDUSTRIAL TRANSACTIONS IN FEMA SINCE 2014	73
FIGURE 6:	INDUSTRIAL DEALS IN FEMA BY YEAR AND LOCAL AUTHORITY, 2014-19	74
FIGURE 7:	INDUSTRIAL FLOORSPACE BY YEAR AND LOCAL AUTHORITY, 2014-19	75
FIGURE 8:	INDUSTRIAL FLOORSPACE BY YEAR AND SIZE, 2014-19	76
FIGURE 9:	INDUSTRIAL AVAILABILITY IN FEMA	78
FIGURE 10:	DIRECT AVAILABILITY ACROSS LEICESTER AND LEICESTERSHIRE BY LOCAL AUTHORITY	80
FIGURE 11:	DIRECT AVAILABILITY ACROSS LEICESTER AND LEICESTERSHIRE BY SIZE AND GRADE	81
FIGURE 12:	HIERARCHAL STRUCTURE OF OXFORD ECONOMICS’ SUITE OF MODELS	91
FIGURE 13:	MAIN RELATIONSHIPS	92
FIGURE 14:	STRATEGIC WAREHOUSING COMPLETIONS (SQM)	99
FIGURE 15:	KEY AREAS OF OPPORTUNITY	139
FIGURE 16:	HMA SURROUNDING LEICESTERSHIRE	156
DIAGRAM 1:	E-COMMERCE – LOGISTICS MODEL 1	198
DIAGRAM 2:	E-COMMERCE – LOGISTICS MODEL 2	198

List of Tables

TABLE 1:	TABLE: SUMMARY OF RAIL FREIGHT DEMAND FORECASTS TO FY2033/4 AND FY2043/4	45
TABLE 2:	RAIL ENHANCEMENT SCHEME PROGRESS	47
TABLE 3:	RAIL NETWORK ENHANCEMENT PIPELINE, EAST MIDLANDS	49
TABLE 4:	LEICESTERSHIRE HIGHWAY SCHEMES	51

TABLE 5:	TABLE: RORO UNITS HANDLED AT DOVER AND GREAT BRITAIN PORTS 2016 AND 2018	54
TABLE 6:	INDUSTRIAL FLOORSPACE TRENDS, 2002-19	70
TABLE 7:	ANNUALISED AND PROJECTED TAKEUP BY AUTHORITY	77
TABLE 8:	GOLDEN TRIANGLE RENTAL VALUE CHANGE, BIG SHEDS	77
TABLE 9:	DIRECT YEARS SUPPLY, LEICESTER AND LEICESTERSHIRE COUNTY LOCAL AUTHORITIES	82
TABLE 10:	INDIRECT PIPELINE YEARS SUPPLY, LEICESTER AND LEICESTERSHIRE COUNTY AUTHORITIES	ERROR! BOOKMARK NOT DEFINED.
TABLE 11:	UNDER CONSTRUCTION YEARS SUPPLY, LEICESTER AND LEICESTERSHIRE COUNTY LOCAL AUTHORITIES	ERROR! BOOKMARK NOT DEFINED.
TABLE 12:	TABLE: CURRENT LARGE-SCALE WAREHOUSE CAPACITY ENGLAND AND WALES, BY REGION (2019)	61
TABLE 13:	TABLE: CURRENT LARGE SCALE WAREHOUSE CAPACITY AT SRFIS AND OTHER RAIL-CONNECTED SITES (2019)	63
TABLE 14:	TABLE: CURRENT LARGE SCALE WAREHOUSE CAPACITY LEICESTERSHIRE BY BILLING AUTHORITY (2019)	65
TABLE 15:	RAIL FREIGHT TONNES LIFTED 2019	85
TABLE 16:	TYPICAL INTERMODAL SERVICES – ORIGINS AND DESTINATION	86
TABLE 17:	LEICESTERSHIRE WAREHOUSE LAND SUPPLY	87
SOURCE:	COSTAR / EGI / AUTHORITIES	87
TABLE 18:	WIDER GOLDEN TRIANGLE WAREHOUSE LAND SUPPLY	89
TABLE 19:	ESTIMATED REPLACEMENT BUILD TO 2041	105
TABLE 20:	REPLACEMENT BUILD ASSUMPTIONS	ERROR! BOOKMARK NOT DEFINED.
TABLE 21:	EXISTING & FORECAST FREIGHT FLOWS FOR DISTRIBUTION CENTRE COMMODITIES – LEICESTERSHIRE	107
TABLE 22:	EXISTING & FORECAST FREIGHT FLOWS FOR DISTRIBUTION CENTRE COMMODITIES – EAST MIDLANDS	107
TABLE 23:	SENSITIVITY TEST TRAFFIC FORECAST (2041 TRAFFIC FORECAST + 15%) - LEICESTERSHIRE	108
TABLE 24:	SENSITIVITY TEST TRAFFIC FORECAST (2041 TRAFFIC FORECAST + 15%) – EAST MIDLANDS	109
TABLE 25:	FORECAST TRAFFIC GROWTH AND ADDITIONAL FLOOR SPACE REQUIRED	109

TABLE 26:	TABLE: SENSITIVITY TEST TRAFFIC FORECAST AND ADDITIONAL FLOOR SPACE REQUIRED	110
TABLE 27:	FORECAST NEW-BUILD RATES TO 2041	110
TABLE 28:	FULL-TIME EQUIVALENT JOBS BY USE CLASS ('000S)	94
TABLE 29:	B8 EMPLOYMENT FLOORSPACE NEED (SQM)	95
TABLE 30:	FORECAST B8 EMPLOYMENT LAND NEED (HA)	95
TABLE 31:	FULL-TIME EQUIVALENT STRATEGIC B-8 JOBS CHANGE	96
TABLE 32:	STRATEGIC B8 EMPLOYMENT FLOORSPACE NEED (SQM)	97
TABLE 33:	FORECAST B8 EMPLOYMENT LAND NEED (HA)	97
TABLE 34:	AVERAGE ANNUAL GROWTH RATES, WAREHOUSING SECTORS	98
TABLE 35:	FORECAST COMPLETIONS TO 2041	100
TABLE 36:	INDUSTRIAL FLOORSPACE TRENDS, 2002-19 (SQM '000S)	101
TABLE 37:	TOTAL FORECAST NEW-BUILD AND AT RAIL-SERVED SITES (SRFIS) TO 2041	115
TABLE 38:	RAIL-SERVED SITE SUPPLY IN LEICESTERSHIRE AND EAST MIDLANDS – WITH CONSENTS	117
TABLE 39:	LAND REQUIRED AT RAIL-SERVED SITES AND POTENTIAL SITE SUPPLY TO 2041	118
TABLE 40:	POTENTIAL SITE SUPPLY 2041 – LEICESTERSHIRE AND EAST MIDLANDS	121
TABLE 41:	TOTAL FORECAST NEW-BUILD AND ROAD ONLY NEW-BUILD TO 2041 (HIGH REPLACEMENT) – LEICESTERSHIRE	122
TABLE 42:	TABLE: SITE SUPPLY ROAD ONLY SITES – VACANT UNITS AND PLOTS WITH B8 CONSENTS	124
TABLE 43:	TOTAL NEW-BUILD AT ROAD ONLY SITES AND POTENTIAL SITE SUPPLY TO 2041	125
TABLE 44:	FORECAST COMPLETIONS TO 2036 AND 2041	ERROR! BOOKMARK NOT DEFINED.
TABLE 45:	INDUSTRIAL FLOORSPACE TRENDS, 2002-19 (SQM '000S)	128
TABLE 46:	FORECAST NEW-BUILD RATES TO 2041 AND ASSOCIATED LAND REQUIREMENTS	129
TABLE 47:	FORECAST NEW-BUILD RATES TO 2041 AND ASSOCIATED LAND REQUIREMENTS INCLUDING VACANCY MARGIN (000S SQM) - LEICESTERSHIRE	130
TABLE 48:	RAIL - FORECAST DEMAND AND SITE SUPPLY - LICESTERSHIRE	133

TABLE 49:	LAND REQUIRED AT ROAD ONLY SITES AND POTENTIAL SITE SUPPLY TO 2041	
	134	
TABLE 50:	SUMMARY OF MODELLED SCENARIOS	ERROR! BOOKMARK NOT DEFINED.
TABLE 51:	SCENARIO EMPLOYMENT GENERATION	150
TABLE 52:	FUTURE WAREHOUSING JOB TYPE (ASSUMES 119 SQM PER FTE)	152
TABLE 53:	FUTURE WAREHOUSE EMPLOYMENT SKILLS PROFILE (ASSUMES 119 SQM PER FTE)	154
TABLE 54:	FUTURE WAREHOUSE EMPLOYMENT OCCUPATION PROFILE (ASSUMES 119 SQM PER FTE)	154
TABLE 55:	LOCATION OF RESIDENCE OF THOSE WORKING IN LEICESTER AND LEICESTERSHIRE (2011)	157
TABLE 56:	POTENTIAL LOCATION OF RESIDENCE FOR WORKFORCE TAKING UP ADDITIONAL JOBS.	158
TABLE 57:	HOUSING IMPACT OF JOBS GROWTH BY HMA AND SCENARIO	161
TABLE 58:	ECONOMICALLY INACTIVE WHO WANT A JOB BY HMA (YEAR TO DEC 2019)	162
TABLE 59:	PROLOGIS RFI DIRFT	164
TABLE 60:	HAMS HALL	164
TABLE 61:	BIRCH COPPICE	165
TABLE 62:	EMDC	165
TABLE 63:	EAST MIDLANDS GATEWAY	166
TABLE 64:	BARDON HILL	166
TABLE 65:	MAGNA PARK LUTTERWORTH	166
TABLE 66:	ALL ASSESSED PARKS	167
TABLE 67:	KEY INDUSTRIAL ESTATES WORKFORCE BREAKDOWN	168
TABLE 68:	QUALIFICATIONS PROFILE OF WAREHOUSING EMPLOYMENT 2011	ERROR! BOOKMARK NOT DEFINED.
TABLE 69:	OCCUPATIONAL PROFILE OF KEY INDUSTRIAL ESTATES COMPARED TO LEICESTERSHIRE COUNTY	ERROR! BOOKMARK NOT DEFINED.
TABLE 70:	PROLOGIS OCCUPIER EMPLOYMENT PROFILE	169

Appendices

APPENDIX A:	E COMMERCE LOGISTICS MODELS	198
APPENDIX B:	LARGE SCALE WAREHOUSE FLOOR SPACE – EAST MIDLANDS	200
APPENDIX C:	DEVELOPMENT SIZE AND FLOOR SPACE: SELECTED DEVELOPMENTS	208
APPENDIX D:	STUDY AREA SUPPLY APRIL 2020	204
APPENDIX E:	WIDER AREA SUPPLY APRIL 2020	205

Quality Standards Control

The signatories below verify that this document has been prepared in accordance with our quality control requirements. These procedures do not affect the content and views expressed by the originator.

This document must only be treated as a draft unless it is has been signed by the Originators and approved by a Business or Associate Director.

DATE
April 2021

ORIGINATORS
David Leyden
Planner (GL Hearn)

APPROVED
Matt Kinghan
Director (Iceni Projects)



Limitations

This document has been prepared for the stated objective and should not be used for any other purpose without the prior written authority of GL Hearn; we accept no responsibility or liability for the consequences of this document being used for a purpose other than for which it was commissioned.

0 EXECUTIVE SUMMARY

0.1 GL Hearn with MDS Transmodal was appointed by a consortium comprising Blaby, Charnwood, Harborough, Hinckley & Bosworth, Melton, North West Leicestershire, Leicester City, Leicestershire County Council, Oadby & Wigston and the Leicester and Leicestershire Local Enterprise Partnership, to undertake the study 'Warehousing and Logistics in Leicester & Leicestershire: Planning and Managing Change / Growth'.

0.2 This study brings together a wide range of topics related to the current and future needs of the sector, with an emphasis in particular on future floorspace and land needs to 2041. Key matters addressed are:

- Drivers for change in the logistics market
- Review of the property market in the East Midlands and Leicester and Leicestershire
- The warehousing stock position in Leicester and Leicestershire
- Warehouse land supply in Leicester and Leicestershire and across the 'golden triangle'
- Estimates for future strategic warehousing need – modelling using: replacement and traffic growth; labour demand; and completions trends
- Testing demand forecasts and supply
- Potential future development areas
- Approaches to monitoring
- Future strategic warehousing needs implications on employment
- Assessment of current and future labour and skills in the sector
- Approaches to managing HGV parking
- Advice on planning policy and distribution development needs

Key messages from the report

0.3 Key findings from the report are set out in this section.

0.4 The most critical component of this study has been to recommend a future volume of warehouse floorspace and area of land required to accommodate it that should be planned for from 2020 to 2041.

- **It is recommended that the authorities plan for around 2,570,000 sqm of additional floorspace to 2041** (including a flexible margin of 643,000 sqm based on average 5 yr completions).
- Based on 43% of future need at rail served sites, which reflects an expected increase in rail orientated freight in the future, **there is a shortfall of 768,000 sqm (307 ha) at rail served sites which should be planned for** (including margin) after taking into account existing supply. This would largely be met by the proposed Hinckley NRFI should it be permitted.

- Based on 57% of future need at non-rail (i.e. road) served sites, **there is a shortfall of 392,000 sqm (112 ha) at non-rail served sites which should be planned for** (including margin) after taking into account existing supply. For scale, this is less than the extension of Magna Park North of over 400,000 sqm.

Rail - Forecast Demand and Site Supply 2020-2041 - Leicestershire

Rail-served Sites – for Planning	2026	2031	2036	2041
Rail-served (43% of all new build req.) (sq.m 000's)	237	434	632	829
Margin for flexibility (43% of 5-year completions) (sq.m 000's)	79	145	211	277
Total requirement (sq.m 000's)	316	579	842	1,106
Rail-served supply (at 2020) (sq.m 000's)	338	338	338	338
Balance (sq.m 000's)	22	-241	-504	-768
Indicative Additional Land required (Ha @ 25% plot ratio)	N/A	96	202	307

Non Rail (Road) - Forecast Demand and Site Supply 2020-2041 - Leicestershire

Non rail-served Sites for Planning	2026	2031	2036	2041
Non rail-served (57% of all new build req.) (sq.m. '000s)	314	576	837	1,099
Margin for flexibility (57% of 5-year completion) (sq.m. '000s)	105	192	279	367
Total requirement (sq.m. '000s)	419	768	1,117	1,466
Non rail-served supply (at 2020) (sq.m. '000s)	1,073	1,073	1,073	1,073
Balance (sq.m. '000s)	655	306	-43	-392
Indicative additional Land required (Ha @ 35% plot ratio)	N/A	N/A	12	112

Section Summaries

Section 2: Drivers for Change in the Logistics Market

- The National Infrastructure Commission (NIC) in 2019 identified the growth of e-commerce, decarbonisation efforts for zero-emissions road and rail freight vehicles and disruptive new technologies as the three main drivers of change in the domestic logistics market.
- In 2019, 19% of all retail sales were e-commerce transactions, although ONS data for the Covid-19 pandemic suggests this could be at 33% as of May 2020. The growth in sales can be attributed to technological developments, liberalisation of parcel and courier services, distribution fulfilment centres, the competitive price goods and the convenience. It is estimated that retail sales could reach 65% by 2050, leading to a significant increase to deliveries and the enhancement of the supporting logistics network.
- Decarbonisation is critical in enabling the UK to meet its challenging climate change targets. Currently, domestic transport accounts for 27% of the UK's total greenhouse gas (GHG) emissions (and has only decreased by 2% since 1990), with road and rail freight combined being responsible for 6% of total GHG emissions. Freight transport also has an impact on air quality. Road transport currently accounts for 32% of Nitrogen Oxides (NO_x) pollution, with HGVs and vans making up 46% of the contribution. Decarbonisation of logistics is possible through a switch to rail freight where possible and electric light goods vehicles. However HGV decarbonisation is more challenging and may involve options such as HGV batteries, hydrogen fuel cells or 'e-highways'.
- Automation in warehouses is increasingly being introduced to increase productivity. This may be further spurred by shortages of labour, exacerbated by the UK's withdrawal from the EU. Automation is also a driver for increased levels of power requirements for operators.
- Given the above, the availability of power to current and future logistics sites is a key issue with developers and operators already reporting challenges in achieving functional requirements. A key recommendation from the is for government to coordinate and direct electricity network operators to map out the infrastructure upgrades required to enable large scale freight van charging at depots.
- Rail freight tonnage has and is expected to continue to increase. The key drivers for this growth are the increase in road haulage cost, the development of SRFI's in the Midlands and the north of England and a growing proportion of imports arriving in maritime containers. Electrification of the rail network is important for decarbonisation although at present plans are in place to do so for only 50% of the network.
- MDS Transmodal, commissioned by Network Rail, produced rail demand forecast for 2033/34 and 2043/44. Overall, the forecasts indicate continued growing demand for rail freight services, particularly in the intermodal and construction sectors.

Section 3: Large Scale Warehousing Stock Position (March 2019)

- For this report, large scale logistics has been defined as a warehouse floor space that is greater than 9,000 square meters in total.
- In 2019, the East Midlands region hosts just over 9.3 million sqm of large scale warehouse floorspace across 386 commercial properties. The main regional competitors are the North West, West Midlands and Yorkshire/Humber but these regions have a smaller mean unit size suggesting

warehousing in these regions has a more regional role than the national role the East Midlands plays.

- In the East Midlands, around 0.75 million square metres is currently located on rail-served sites, equating to 8% of the region's stock.
- In Leicester and Leicestershire there are just over 2.3 million sqm of floorspace across 100 commercial properties. The average floor space per commercial property is around 23,000 square metres.

Section 4: Property Market Review

- In 2019, the East Midlands was the strongest market across the UK seeing take up of 2.5 million sqft (230,000 sqm) in the first half of 2019. 82% of this space involved A-grade quality units and 15% accounted for B-grade space.
- Take-up in Leicestershire remained above the 10-year average for the sixth successive year in 2019, with 2.2 million sqft (205,000 sqm) of space acquired. Several new developments have also boosted supply in the area. This has mainly been dominated by larger units above 50,000 sqft (4,600 sqm).
- VOA data states that the county contains 9,475,000 sqm of industrial floorspace in 2019. Leicester accounted for 26% of the county's total. Industrial floorspace in the county decreased by 467,000 sqm from 2012-19.
- Between 2014 and 2019 there have been 64 recorded industrial deals in Leicestershire, totalling 1.5million sqm of floor space. 27 of these transactions were recorded in North West Leicestershire with the largest amount of floor space totalling 778,000 sqm.
- New warehouses typically command around £6.25 psf. Rental values in and around Leicester have grown by 4% in a prime location and by 12% in a secondary location in recent years. This growth can be linked to the demand from retailers and delivery specialists.
- There is a direct available supply of 0.9 years across the study area (May 2020). The low level of supply has been confirmed by agent consultation which discussed supply pressures across the strategic warehousing and logistics market. Agents outlined that road accessibility was the most important factor for market demand. Furthermore (spring 2020) it is expected that the COVID 19 pandemic will increase pressure on warehousing demand / supply due to greater increases in e-commerce activity.

Section 5: Existing SFRI Rail and Freight Volumes

- The four rail terminals save the equivalent of 350,000 HGV movements (with the average loading of 15 tonnes per HGV trip).
- Modern Intermodal terminals developed integral to large-scale warehousing will generate significant volumes of rail and freight traffic serving a range of destinations.

Section 6: Warehouse Land Supply and Supply Trajectory, Leicestershire and ‘Golden Triangle’

- There is around 1.8 million sqm of future supply across Leicestershire. This is equivalent to around 6.9 years of take-up based on a past annual average (this is a gross figure excluding losses due to lease expiry). The data suggests that the current planned pipeline is not sufficient to cater for the period to 2041. Magna Park is the largest contributor to supply.
- The wider ‘Golden Triangle’ reports around a further 4.6 million sqm of supply.

Section 7: Estimates for Future Strategic Warehousing Need – Labour Demand and Completions Trends

- This section introduces two approaches to estimating future need, looking at a labour demand forecasting model and recent completions trends.

Labour Demand

- The labour demand model, based on an employment forecasting model produced by Oxford Economics (OE), estimates the number of jobs predicted to exist across the Leicester and Leicestershire local authorities to 2041.
- GLH converted total employment to full time equivalence (FTE) by using Business Register and Employment Survey (BRES) data, and then converted FTE jobs to floorspace using employment densities in accordance to HCA guidance. Finally, a plot ratio of 40% was used to arrive at a land need, resulting in an overall B8 need for an additional 10 hectares to 2031 and a surplus of need of 12.2 hectares to 2041.
- A sensitivity was undertaken where specific two-digit sectors that would be associated with strategic warehousing are isolated (growth only model) and the resultant land need from those sectors specifically is 40.8 hectares to 2041.

Completions

- The constituent local authorities provided monitoring data from 2012/13 to 2019/20 for all strategic warehousing units completed in each monitoring year. The data was annualised and extrapolated to 2041 resulting in an overall gross need of 2.7 million sqm of floorspace or 701 ha of land to 2041.
- Supplementing the completions data, Valuation Office Agency (VOA) annual business floorspace monitoring data was used to supplement the completions data, and projecting figures forward resulted in a need of 1.9m sqm of floorspace to 2041, although this model is indicative as it includes all industrial use classes.

Section 8: Estimates for Future Strategic Warehousing Need-Replacement and Traffic Growth

- This section considers a two part model: firstly where additional growth in goods tonnage generates net additional floorspace need; secondly whereby existing stock is replaced as it ages. A low and a high replacement demand model is identified (30/40 years) and a central and higher growth traffic scenario.

- Up to 2041, it is estimated that around 70% of the existing warehouse stock in the region will require replacement based on a 30 year lifespan of units, as historic stock is unable to meet the demands of modern retail needs (power, height, size etc). This could range from a forecast need of 1,215,000 sqm to 1,620,000 sqm.
- The forecast for freight flows indicates that in Leicestershire an additional 5.2 million tonnes of freight can be expected to pass through large scale distribution centres in 2041 compared with 2019. For road data, an additional 7.8 million tonnes can be expected to pass through large scale distribution centres in 2041 compared with 2019. This through-put of goods, or traffic growth, is considered as the primary driver of demand for additional floorspace alongside replacement demand under this model.
- For Leicestershire the 'high replacement, forecast traffic growth sensitivity' scenario can be expected to generate a gross new-build of just over 1.9 million square metres to 2041 which is recommended as the preferred rate for planning policy development.

Section 9: Testing Demand Forecasts and Supply

- This section considers the modal split of future needs identified under the replacement and traffic growth model and how this balances with supply. Figures are calculated without a margin which is examined in section 10.

Rail Served Sites

- East Midlands Gateway is currently the only directly rail-served site in Leicestershire - East Midlands Distribution Centre has an on-site rail terminal but currently is not served by services. Further units at East Midlands Gateway are currently being developed with capacity for over 200,000 sqm, which will increase the overall share of rail-served sites for strategic warehousing.
- The planning system should be making greater provisions of rail-served floorspace in the future on account of NPPF guidance and the commercial requirements in the industry. We have thus considered scenarios involving growth at Strategic Rail-Freight Interchanges (SRFI's) with proportions of 26%, 60%, and a midpoint of 43% which is the recommended rate for planning policy development.
- These demand scenarios are compared to the supply of floor space coming forward at these SRFI's, and also converted to an overarching land need to 2041 using a plot ratio of 0.25 (25%) on account of additional yard space and landscaping requirements.
- The shortfall of 768,000 sqm under the 43% rail scenario could be largely fulfilled through the *Hinckley National Rail Freight Interchange (NRFI)*, a SRFI being promoted by Tritax Symmetry adjacent to Junction 2 of the M69 and alongside the Leicester to Nuneaton main line. Covering around 226ha, an integral intermodal terminal is planned for the site serving around 650,000 square metres of large scale floor space.

Road Served Sites

- A similar exercise was undertaken for road-served sites analysing potential demand scenarios against expected supply in Leicestershire. A plot ratio of 0.35 (35%) was used.
- The model indicates a need of 26,000 sqm under the preferred 43% rail served scenario although rising to 354,000 sqm under the 26% rail served scenario to 2041.

Floorspace required to meet modelled need (rail and road) to 2041, 5 year bands

Leicestershire (R&TG Model)	2026	2031	2036	2041
High Replacement, sensitivity test Traffic Growth – New build Requirement	561,000	1,017,000	1,472,000	1,928,000
Current supply (exc pre-lets, inc avail stock)	1,411,000			
Balance	850,000	394,000	-61,000	-517,000

Land Required at Rail-served Sites and Potential Site Supply to 2041*

Leicestershire	To 2041 - % rail-served		
	26%	60%	43%
High Replacement, Forecast Traffic Growth			
New-build (000s sqm)	474	1,094	784
Supply (000s sqm)	338	338	338
Balance (000s sqm)	-136	-756	-446
Additional Land required (ha)	54	302	179
High Replacement, Sensitivity Test Traffic Growth			
New-build (000s sqm)	501	1,157	829
Supply (000s sqm)	338	338	338
Balance (000s sqm)	-163	-819	-491
Additional Land required (ha)	65	328	196

Source: DCO Applications (Planning Inspectorate) and Developer websites

* Plot ratio of 0.25 assumed.

Total New-build at Road Only Sites and Potential Site Supply to 2041*

Leicestershire	To 2041 - road only at % rail-served		
	26%	60%	43%
High Replacement, Forecast Traffic Growth			
New-build (000s sqm)	1,349	729	1,039
Supply (000s sqm)	1,073	1,073	1,073
Balance (000s sqm)	-276	344	34
Additional Land required (ha)	-79	NA	NA
High Replacement, Sensitivity Test Traffic Growth			
New-build (000s sqm)	1,427	771	1,099
Supply (000s sqm)	1,073	1,073	1,073
Balance (000s sqm)	-354	302	-26
Additional Land (ha)	-101	NA	-7

* Assumes plot ratio of 0.35

Section 10: Future Warehouse Floorspace Growth Scenarios Summary

- This section summarises all modelling undertaken and then identifies the preferred scenario for the need to 2041. Each scenario and its commentary are summarised below. This section introduces a margin for flexibility based on a 5 year completion trend.
- Overall, the use of the Replacement & Traffic Growth model for forecasting appears most reasonable going forwards which in this study equates to 99,000 sqm per annum rising to 122,000sqm pa with a margin for flexibility. The **high replacement demand, higher sensitivity traffic growth need figure of 2,571,000 sqm** is recommended for planning policy development based on the evidence considered, market feedback and broad alignment with completions trend.

Range of modelled strategic warehousing needs 2020-2041

Model	2041 Needs 000s sqm	Comments
High replacement, central traffic growth	2,466	Reflects accepted traffic growth and new technology needs in-stock replacement, with margin.
Low replacement, central traffic growth	2,061	Reflects accepted traffic growth and assumes longevity in stock, with margin, with margin.
High replacement, sensitivity test traffic growth	2,571	Increases traffic growth and assumes new technology requires stock replacement, with margin.
Low replacement, sensitivity test traffic growth	2,166	Increases traffic growth and assumes longevity in stock, with margin.
Completions trend	2,702	Reflects large warehouse floorspace delivery over the 2012-19 period, projected forwards.
VOA trend	1,941	Models growth only districts 2011-18 projected forwards, all warehouse and industrial stock including losses
Labour demand	-50	Assumes the baseline model for all sectors
Labour demand sensitivity	161	Assumes baseline model for warehouse and related sectors for growth only districts

- Taking into account the preferred scenario, including a margin for flexibility and the existing supply, **a shortfall of 768,000 sqm or 307 ha is identified for rail-served needs and 392,000 sqm or 112 ha is identified for road (non rail) needs.**

Section 11: Future Development – Areas of Opportunity

- As there is an identified shortfall of land to 2041, we have identified some general broad areas across Leicestershire where strategic warehousing could be located. The criteria used to identify these broad “areas of opportunity” are:
 - Good connections with the strategic highway network;
 - Good connections with the railway network;
 - Appropriately located relative to the markets to be served; and

- Is accessible to labour and located close to areas of employment need.
- Sites for strategic warehousing development should be selected according to the following considerations:
 - Good connections with the strategic highway network;
 - Appropriately located relative to the markets to be served;
 - Offers modal choice;
 - Is sufficiently large and flexible;
 - Is served from an electricity supply grid with sufficient capacity;
 - Is accessible to labour; and
 - Is located away from incompatible land-uses.
- It is recognised that future needs may be met by refurbished units built since the 1990s however insufficient evidence exists at the present time to indicate whether this will be sufficient to reduce the overall demand for new sites. The role of monitoring is important in this regard.

Section 12: Monitoring

- To effectively monitor strategic warehousing development, it is recommended that there is a concerted approach to data collection beyond the local authority level and primarily at the county level. In some cases, it may be appropriate to monitor activity across the longer list of authorities in the wider golden triangle.
- Monitoring should include a range of metrics including gains and losses of large scale units, refurbishments, ancillary floorspace and employment. The completions (gross gains) should be monitored against the need figure rather than total stock, as some losses are assumed.
- It is suggested using the information in Section 6 as a template table for monitoring new applications and completions.
- Additionally, it would be useful to collect market transactional data through paid services such as EGi and CoStar, and/or host industry events to collect information from developers and the private sector.

Section 13: Floorspace Scenario Implications on Employment

- This section of the report considers the labour market implications of the low and high preferred scenarios derived from the “low replacement demand, central traffic growth” as the low growth scenario and the “high replacement demand, higher sensitivity traffic growth” scenario as the high growth scenario.
- There is uncertainty in terms of future labour requirements due to potential changes in employment density and the potential effect of the replacement demand of units with an increasing number of older units staying in use.
- Taking into account direct employment creation and assuming a decrease in employment densities over time, the estimated total employment for the low growth scenario is 7,823 and for the high growth is 9,871 full-time equivalents.

- The breakdown of these additional jobs in terms of occupation and skill vary as it is difficult to project how the sector may change, however, some studies suggest that the jobs will become higher-skilled and more managerial as there are efficiency gains due to technological change.
- These jobs, due to current commuting patterns, will sometimes require workers from outside of Leicestershire. The housing impact of the additional employment growth in neighbouring HMA's is identified as being up to 15 dwellings per annum over the period to 2041.
- The implications of this section should be seen as indicative and used in conjunction with other assessments on employment, population and housing change.

Section 14: Labour and Skills

- In total the distribution parks in the study area employ around 50,000 workers across a range of sectors but primarily warehousing, wholesale, retail, postal, land transport management and manufacturing.
- There is potential for a greater portion of warehousing workers to be in higher tier occupation bands based on trends occurring in recent years.

Section 15: HGV Parking

- The National Survey Report estimates that there is currently capacity for 2,167 HGVs at on-site parking facilities in the East Midlands. Overnight demand is just over 3,000 HGVs per night equating a shortfall in the capacity of around 865 HGVs. The area around Magna Park is noted as being a 'parking shortage hotspot'.
- There is a requirement to develop short and long-term parking in Leicestershire. It is recommended that the issue of future HGV parking provision in Leicestershire be acknowledged in relevant growth plans and transport strategies for Leicester and Leicestershire, and a consideration in respect of future development via policy in the Local Plan.

Section 16: Planning Policy and Distribution Development

- Authorities should support last-mile delivery utilisations of sustainable methods of transport such as bikes or electric vehicles.
- Congestion of the freight industry in 2019 cost between £3-6 billion per annum. Planning policy needs to reflect the issues that HGVs face and update policy accordingly such as ensuring that planning decisions do not attach conditions restricting the times of day HGVs and LGVs can arrive or depart.
- HGV employ run was 29.2% in 2018, with road haulage companies factoring these trips into the costs. There is a call for greater freight optimisation as result but there need to be greater commercial or economic transport operators.

1 INTRODUCTION AND CONTEXT

- 1.1 GL Hearn with MDS Transmodal was appointed by a consortium comprising Blaby, Charnwood, Harborough, Hinckley & Bosworth, Melton, North West Leicestershire, Leicester City, Leicestershire County Council, Oadby & Wigston and the Leicester and Leicestershire Local Enterprise Partnership, to undertake the study 'Warehousing and Logistics in Leicester & Leicestershire: Planning and Managing Change / Growth'.
- 1.2 This study brings together a wide range of topics related to the current and future needs of the sector, with an emphasis in particular on future floorspace and land requirements to 2041. The study is focused on planning with respect to the development of large scale logistics warehouse facilities greater than 9,000 square metres (around 100,000 sq ft). This is the recognised industry definition and is also broadly the level above which purposely designed plots/sites are required to accommodate the buildings (in terms of plot size, configuration and the ability to handle significant volumes of HGVs and employee car traffic) when compared with smaller scale general industrial units. Key matters addressed in the study are:
- Drivers for change in the logistics market
 - Review of the property market in the East Midlands and Leicestershire¹
 - The warehousing stock position in Leicester and Leicestershire as of March 2019
 - Warehouse land supply in Leicester and Leicestershire and across the 'golden triangle'
 - Estimates for future strategic warehousing need – modelling using: replacement and traffic growth; labour demand; and completions trends
 - Testing demand forecasts and supply
 - Potential future development areas
 - Approaches to monitoring
 - Future strategic warehousing needs implications on employment, and additionally commuting and housing
 - Assessment of current and future labour and skills in the sector
 - Approaches to managing HGV parking
 - Advice on planning policy and distribution development needs
- 1.3 This report has been produced in spring 2020 during the height of the coronavirus pandemic. The work has endeavoured to take account of the implications of the pandemic as far as reasonably possible where this is likely to have a long-term impact on planning with respect to large scale

¹ The reference to 'Leicestershire' throughout refers to the geographical county of Leicestershire, which in local government terms comprises the City of Leicester plus the district council areas of Blaby, Oadby & Wigston, Charnwood, Harborough, Hinckley & Bosworth, Melton and North West Leicestershire.

warehousing. Where this may affect the modelling or other elements of the work reference has been made.

Context

1.4 Several previous studies have provided recommendations on future warehousing needs for Leicester and Leicestershire, notably:

- Leicester and Leicestershire Strategic Distribution Study MDS Transmodal, Scope B Update and Refresh of Outputs and Conclusions, September 2016
- Leicester and Leicestershire Strategic Distribution Study MDS Transmodal and GL Hearn, Scope C Wider Market Developments: Implications for Leicester and Leicestershire, January 2017

1.5 These provided future warehousing needs based on traffic growth and replacement demand to 2031 and 2036. The current study will update and extend these forecasts. They also considered the key characteristics and locations for growth which will be revisited - notably:

- **High Accessibility:** There is a general preference for logistics activity to be located equidistant between any given goods production and their final destination/consumers and market. Sites near to the strategic road network, in particular motorways and key junctions, as well as proximity to rail freight facilities, are considered the ideal location for distribution activity. In addition, good strategic links decrease the transport costs and allow large freight amounts to reach their market in optimal times while heavy loaded HGVs require good road conditions to operate to optimum functionality.
- **Site's context:** A modern logistics site should have an optimal layout ideally square or rectangular that allows cubic capacity and consequently the free flow of operations. The site should have a relatively flat topography as changes in the level might lead to inefficiency which increases production costs. Good drainage and subsoil conditions are also preferable, with good load-bearing qualities and surface water run-off.
- **Distribution Clusters:** Logistics companies benefit more by locating near each other rather than operating in isolated locations (agglomeration economies). In particular clusters of logistics or distribution centres: encourage co-operation that can consequently reduce supply chain costs; allow the exchange of knowledge, technology, and services; encourage innovation derived from the synergies among the cluster's occupiers; maintain and retain good conditions in the local infrastructure; provide access to the specialised workforce.
- **An adequate supply of a suitable workforce** is also an important factor in the choice of location. The requirements are changing while technology is evolving, and higher-skilled labour is more than ever occupied in the logistics sector.

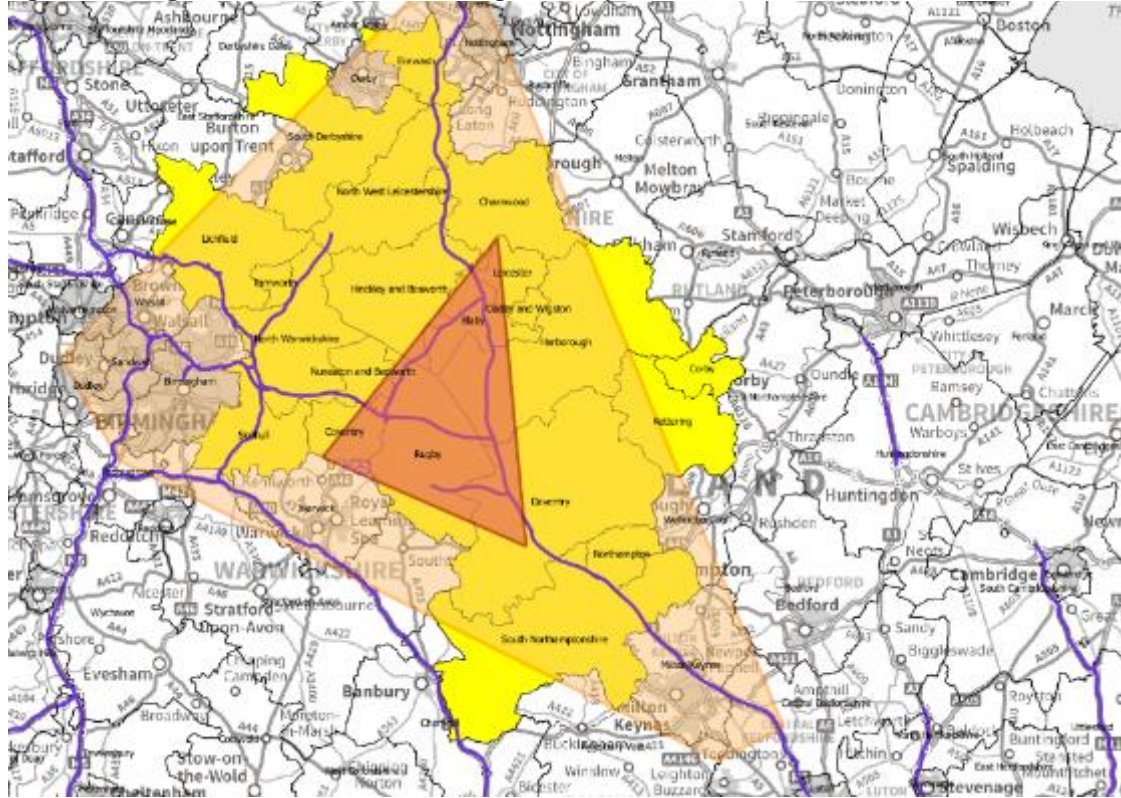
Study Area

1.6 Outside of the Leicester and Leicestershire area, consideration has been given to the wider market study area given that strategic warehousing often has markets that extend both across and beyond

traditional administrative boundaries. Figure 1 illustrates the inner Golden Triangle and the wider Golden Triangle as initially presented within the Leicester and Leicestershire Strategic Distribution Study 2016/17.

- 1.7 The Golden Triangle is referred to as the area bounded by the M1, M6 and M69 motorways, albeit that others consider it to be a larger area broadly running along the M1 corridor from Milton Keynes to north Leicestershire/Nottinghamshire and extending into the West Midlands towards Birmingham along the M6 corridor.
- 1.8 For this current study, we consider that the most interrelated distribution market for the County includes the 21 authorities highlighted in Figure 1. Milton Keynes and Birmingham have been excluded due to their urban nature and their different spatial dynamics to Leicestershire. We have also included Corby with its Midlands Logistics Park. Supply data for the authorities are reported in chapter 6

Figure 1: Figure: Wider 'Golden Triangle' Study Area



Stakeholders

1.9 The development of this report has involved engagement with a range of stakeholders. An online event was held (originally planned for face to face but held online due to COVID-19) with around 60 attendees and several one to ones were undertaken. The authors and commissioning authorities are grateful to the stakeholders for their inputs, some of which have been extensive. Consultees include:

- Berrys
- BlackRock
- Carter Jonas
- Dewar Planning
- East Midlands Airport
- Frampton Town Planning
- Gazeley
- IM Properties
- JLL
- Newlands Property
- Now Planning
- Oxalis Planning
- Savills
- SEGRO
- St Modwen
- Tritax Symmetry
- Turleys
- UK Warehousing Association
- Wilson Bowden

2 DRIVERS FOR CHANGE IN THE LOGISTICS MARKET

2.1 This section identifies and assesses the key drivers for change in the domestic logistics market, drawing out the important implications concerning land-use planning in Leicestershire and the wider Midlands region. They could potentially change the criteria by which commercially attractive logistics sites have hitherto been defined, and as a consequence, the broad areas of opportunity previously identified in the Leicester and Leicestershire (SDS) may also change. By not actively responding to the implications, it could diminish the current competitive position of Leicestershire (and the wider Midlands) when compared with other regions.

Better Delivery: The Challenge for Freight

2.2 This document, published by the *National Infrastructure Commission (NIC)* in April 2019, essentially presents the Government's current thinking on how the freight market is likely to change. Unlike a White Paper, which sets out policy over the short-medium term, this document presents the NIC's long term advice (up to 2050) to Government on delivering a clean freight system, focusing on generating zero greenhouse gas emissions from rail and road transport, tackling air pollution and minimising congestion. The document includes consideration of new technologies and the implications of market/technological changes in infrastructure development and land-use planning. The document was produced in-house by the NIC, albeit it's evidence base included Department for Transport (DfT) statistical data, engagement with several key stakeholders, previously published study reports and specifically commissioned studies. One of these commissioned studies, undertaken by *MDS Transmodal*, examined the future of freight demand².

2.3 The document commences by undertaking a brief overview of the current freight system. It notes that the sector currently employs around 2.5 million people and contributes £121 billion gross value added (GVA) to the economy. The sector operates entirely within the private sector, with the Government's role essentially comprising the provision of road and rail infrastructure alongside economic, environmental and safety regulation.

2.4 The state and structure of the economy determine the volume and mix of freight flows generated alongside the location of production and consumption. The document notes that the shift away from heavy industrial manufacturing towards a service-based economy has resulted in a de-coupling of

²https://www.nic.org.uk/wp-content/uploads/Future-of-Freight_Future-of-Freight-Demand_MDS-Transmodal.pdf

freight demand from Gross Domestic Product since the 1990s. Consequently, the demand for freight going forward is likely to reflect consumption (including changes in tastes, fashions and technological developments) and the population growth. The document notes that projections estimate that the population will increase from 66 million currently to 73 million by 2041. While these factors will determine the overall demand for freight, other issues are likely to affect how the freight sector delivers this demand. While the document states that it is not possible to predict with certainty how freight demand will change up to 2050, it identifies three main drivers for change in the domestic logistics market, namely:

- The growth of e-commerce;
- Zero emissions road and rail freight vehicles; and
- Disruptive new technologies.

E-Commerce

2.5 The document notes that the UK now has the second-highest market penetration of e-commerce in the world, making up around 20% of all retail sales as a percentage of total retail sales (at the time of publication in April 2019). In addition to technological advances (e.g. smartphones), the liberalisation of the parcel and courier networks has also been a significant contributory factor. The NIC report suggests that e-commerce could reach 65% of all retail sales by 2050. The sub-section below addresses e-commerce in more detail and the land-use planning implications going forward.

De-carbonisation

2.6 The report states that road and rail freight vehicles must decarbonise by 2050 if the UK is to meet its challenging climate change targets. Currently, domestic transport accounts for 27% of the UK's total greenhouse gas (GHG) emissions (and has only decreased by 2% since 1990), with road and rail freight combined being responsible for 6% of total GHG emissions. Freight transport also has an impact on air quality. Road transport currently accounts for 32% of Nitrogen Oxides (NO_x) pollution, with HGVs and vans making up 46% of the contribution.

2.7 The document notes that the traditional method of reducing GHG emissions from road freight transport has been a modal shift, either to rail freight or water. However, it also states that as most origins or destinations are not accessible by rail or water, HGV movements are still required for at least one leg in the overall end-end supply chain (e.g. rail-served distribution centre to a retail outlet). Therefore, while the modal shift will continue to play an important role in managing air quality and reducing GHG emissions, it is not capable of replacing all HGV journeys.

- 2.8 For smaller road freight vehicles (i.e. LGVs or vans), the report consequently notes that battery-electric vans are emerging as a viable zero-emission alternative to petrol or diesel powered vans. While uptake is currently slow, the report expects a greater choice of electric vans to emerge over the coming years (between 2.5 and 4.25 gross vehicle weight). It notes that while purchase costs are higher than petrol/diesel vans, these should be outweighed by lower operating costs (fuel and maintenance). It also notes that the electric van range is improving and the price differential should also start to fall. This is particularly important for e-commerce trade, as LGVs are the principal means of delivering directly to residential and commercial properties.
- 2.9 The report concludes that the main impact on land-use planning and infrastructure is therefore likely to come from the need to recharge large fleets of LGVs simultaneously (probably overnight) at a single depot location and from the same local grid connection. It will therefore be essential that local grid capacity does not restrict the future uptake of battery electric LGVs. Existing industrial areas and, importantly, new developments likely to support e-commerce delivery facilities (i.e. where goods are loaded into fleets of LGVs for the final delivery to residential and commercial properties) will need to be located where existing grid capacity is sufficient or could be upgraded (network reinforcement) relatively easily and at a reasonable cost. It will also be important that such facilities are designed so that loading docks can be equipped with fast charging points (either from new or retro-fitted at a later date), thereby enabling vans to recharge while cargo is loaded.
- 2.10 The report notes that decarbonising HGVs will be 'more challenging', though three key options are emerging as the most promising alternatives. All involve propulsion using electric motors, albeit being supplied by an electric current from different sources. The three options are:
- E-highways – similar to electrified railways, overhead live contact wires supported by catenary and masts provide power to the HGV (via a pantograph on the roof). They are being developed in several countries, including Sweden and Germany. For cost reasons, likely, only the strategic highway network could ever be wired in this manner, meaning that other power sources would still be required when HGVs join other road types e.g. between the motorway and a distribution centre or urban roads into retail outlets. A report published by the *Centre for Sustainable Road Freight* in July 2020 concluded that the technology is feasible and that around 15,000 lane-km of overhead wires along the core long-distance road network could be developed within 8 years. It also noted that such a scheme would effectively pay for itself within 15 years from sales of electricity to hauliers. However, critics have suggested the assumed capital costs are too low and the cost associated with disruption during delivery have not been factored into the business case.
 - Battery electric – as the energy density of batteries increases and their costs fall due to mass production, it may be that battery-electric HGVs are the most promising option. The range will not be as long when compared with diesel-powered HGVs, however, opportunities are likely to exist for recharging as HGVs load/discharge cargoes or drivers undertake statutory breaks. It may be

that e-highways HGVs also include batteries to enable trips away from the wires to be undertaken (with the battery recharged when operating under wires). As per battery-electric LGVs, the higher capital costs are likely to be outweighed by lower operating costs (fuel and maintenance). It is also likely that electric HGVs will have a longer economic life (fewer moving parts compared with a diesel HGV).

- Hydrogen fuel cells – combining hydrogen and oxygen (from air) to generate an electric current, with water produced as the by-product. Like diesel HGVs, they would have an extended range (when compared with battery electric HGVs) and rapid refuelling. However, to produce hydrogen using the electrolysis method currently requires a significant electric current (and therefore only viable sustainably when this comes from renewables). The methane production method is cheaper but produces carbon dioxide as a by-product. Further, fuel cell vehicles are currently estimated to have an efficiency of around 22% (it is around 33% for diesel vehicles and 70% for battery electric vehicles).

2.11 As per battery electric LGVs, the report concludes that the impact on land-use planning and infrastructure is, therefore, likely to come from the need to recharge large fleets of HGVs simultaneously at a single depot location and from the same local grid connection. Again, it will therefore be essential that local grid capacity does not restrict the future uptake and new developments will need to be located where existing grid capacity is sufficient or network reinforcement can be delivered relatively easily and at a reasonable cost. It will also be important that new distribution centres are designed so that loading docks can be equipped with fast charging points (either from new or retro-fitted at a later date), thereby enabling HGVs to recharge while cargo is loaded and discharged. Parking areas (within distribution centres and at lorry parks) will also need to be equipped with fast charging points (or capable of being retrofitted).

2.12 In addition to the aforementioned issues concerning hydrogen production and efficiency, its safe distribution to filling stations is the other main problem. Converting the domestic gas pipeline network to transport hydrogen has been mooted, which would allow the direct supply to refuel stations (from production facilities or importation ports). Otherwise, the distribution would have to be via road tanker or dedicated pipelines. The implication for land-use planning and infrastructure is that new logistics sites and existing sites earmarked for expansion would need to be capable of being served from the current domestic gas pipeline network (thereby replacing existing diesel bunkers at distribution centres).

2.13 The report states that the decision as to which solution(s) emerge will be principally market-driven. However, uptake is likely to be influenced by a range of factors, including Government policy, technology/infrastructure reliability and cost.

- 2.14 Despite the fact that the rail freight industry already generates significantly fewer GHG emissions (on a per tonne-km basis) when compared with road transport, the vast majority of rail freight services are still hauled by diesel traction. The report notes that around 87% of the national locomotive fleet is diesel powered, with the Government having already set 2040 as the date to remove all diesel-only trains from the network. The report states that the more important ambition will be to fully decarbonise by 2050 and that effectively this leaves the railway with two options:
- Significantly increasing the number of routes on the national network which are electrified (principally overhead live contact wires supported by catenary and masts), thereby allowing more services to be hauled by electric traction between origins and destinations. This could include the Midland Main Line, which is currently reliant on diesel traction for long distance passenger services north of Bedford and all freight services; and
 - Battery electric or hydrogen fuel-cell locomotives.
- 2.15 Currently, around 42% (by route-km) of the national railway network is electrified and only a small minority of rail freight services are hauled at some point in their trip by electric traction. The report notes that there are significant gaps in the electrified network on key freight routes limiting the use of electric traction (e.g. the Midland Main Line), and current planned electrification schemes will only increase the number of electrified route-km to around 48-50% of the network. Despite recent schemes having been delivered late and gone significantly over budget, the report advises that when other costs are considered, electrification is likely to turn out to be cheaper and quicker, will improve network efficiency and provide wider passenger benefits.
- 2.16 As per HGVs, battery electric or hydrogen fuel-cell locomotives have been mooted, particularly as they have shown promise for lightweight passenger trains. However, for heavier freight trains the report notes that the volume of hydrogen or the size of batteries required would necessitate the replacement of revenue earning wagons with fuel tanks or batteries (e.g. a hydrogen locomotive could require two fuel tank wagons). Pure fuel-cell or battery electric locomotives are therefore likely to be expensive to purchase, and the lower payload would result in higher operating costs per unit moved. In practice, it is likely that electric locomotives would have small batteries or fuel-cells installed to enable short 'last mile' trips on non-electrified lines into terminals from a significantly enhanced electrified network (e.g. the batteries could be recharged when the locomotive is operating under wires). From a land-use planning and infrastructure perspective, this suggests that new rail-served logistics sites would need to be located on or in close proximity to main lines which are likely to be electrified over the next 10-20 years.

2.17 Subsequent to the NIC document, Network Rail has been undertaking its own *Traction Decarbonisation Network Strategy (TDNS)*. An interim report was published in September 2020 and concludes that electrification is the only realistic solution for decarbonising rail freight operations (see further below).

2.18 The report considers the use of disruptive new technologies, particularly with how they could assist in reducing highway congestion for HGVs. It notes that road congestion currently costs freight operators at least £3 billion per year, with forecasts suggesting that road traffic is likely to increase between 18% and 54% by 2050. New technologies to enable road pricing (demand management) and Connected Autonomous Vehicles (CAVs) are referenced as potential solutions to reduce congestion (for completeness this section is referenced, albeit they do not have land-use planning implications concerning new large scale warehouse development).

Disruptive New Technologies

2.19 The report also considers future options for freight deliveries in urban areas. These include:

- The development of urban consolidation centres.
- Retiming urban freight deliveries.
- New delivery methods for the 'last mile'.

2.20 Urban consolidation centres are where multiple freight operators (third party logistics - 3PLs - and own account operators) initially deliver goods into a warehouse type facility located on the urban fringe. The goods are consolidated and then reloaded onto freight vehicles for the final delivery into the urban area. In theory, multiple freight vehicle trips into the urban centre can be replaced with fewer but fuller vehicles (and given the short distances involved this part of the delivery process could also be undertaken by battery electric vehicles). However, take-up to date has been limited and mainly where special/specific circumstances have necessitated consolidation (e.g. Heathrow Airport). The additional handling and transport leg add further costs into the end-end supply chain (compared with direct deliveries); the report casts doubt on whether they can operate competitively without public sector financial support. For land-use planning, it also notes that suitable land at the urban fringe is often in short supply. Further, the report notes that freight operators are already consolidating cargoes from multiple shippers, meaning vehicles are already loaded efficiently and trips minimised.

2.21 Retiming urban freight deliveries to retail outlets so that they take place at night-time can reduce daytime freight vehicle trips into city/urban centres. Dedicated unloading areas located away from

residential dwellings and low-noise equipment is often required. This should not have any land-use implications with respect to new large scale warehouse developments as suitable sites would permit 24/7 operations. Some operators are now trialling or introducing new methods for 'last mile' deliveries for smaller sized/e-commerce type cargoes. This includes the concept of 'portering', whereby a freight vehicle (such as a LGV or small HGV) would hand over multiple consignments (pre-sorted) to delivery staff at designated drop-off points in urban areas. Deliveries are then completed either on foot (perhaps supported by some form of wheeled carry equipment) or using e-cargo bikes. The concept is meant to eliminate multiple start-stop vehicle movements associated with parcel type operations. There should not be any land-use implications from this concept for new large scale warehouse developments.

- 2.22 The report concludes by noting that freight is often a forgotten element of spatial planning. This can often result in the freight system having insufficient or sub-optimally located space from which to run efficient operations. Better strategic guidance for planning authorities is therefore suggested. This should direct them to assess the need for further space for distribution facilities based on what businesses require for efficient freight operations. It should set out what is meant by good planning for freight, thereby allowing planning authorities to prepare development plans which better recognise the needs of the freight system.
- 2.23 The report's central finding is that through the adoption of new technologies and the recognition of freight's needs in the planning system, it is possible to decarbonise road and rail freight by 2050 and manage its contribution to congestion. Achieving this will require Government to outline clear, firm objectives, and begin working with the energy sector, freight industry and local areas to ensure that the infrastructure required for alternative fuels and land for efficient freight operations is available when and where it is needed.
- 2.24 A series of recommendations are made in the report. The relevant recommendations concerning this study are summarised below.
- 2.25 *Recommendation 1:* Government should commit to decarbonising road freight by 2050, announcing plans by the end of 2021 to ban the sale of new diesel powered HGVs no later than 2040. To support this:
- Government should, in conjunction with distribution and transmission network operators, prepare detailed assessments of the infrastructure required to enable the uptake of battery electric or hydrogen HGVs, including the refuelling requirements at depots and key rest areas on major

freight routes. For battery electric, these assessments should include enhancements to distribution networks alongside alternatives to reinforcement, such as energy storage. For hydrogen, these assessments should cover the production, storage and distribution of hydrogen.

- *Ofgem* should include a clear requirement for electricity distribution network operators (in partnership with the freight industry) to map out the infrastructure upgrades and opportunities for alternative solutions, such as energy storage, required to enable large scale freight van charging at depots.

2.26 *Recommendation 2:* Government should undertake detailed cross-modal analysis of the long term options for rail freight's transition to zero emissions. It should then publish, by the end of 2021, a full strategy for rail freight to reach zero emissions by 2050, specifying the investments and/or subsidies that it will provide to get there.

2.27 *Recommendation 4:* Government should produce new planning practice guidance on freight for strategic policy making authorities. The guidance should better support these authorities in planning for efficient freight networks to service homes and businesses as part of their plan making processes. This new planning practice guidance, which should be prepared by the end of 2020, should give further detail on appropriate considerations when planning for freight, such as the need to:

- Provide and protect sufficient land/floorspace for storage and distribution activities based on population and economic need, with particular consideration for the floorspace requirements for last mile distribution and consolidation centres;
- Support the clustering of related activities within a supply chain, minimising the distance that goods must be moved and maximising the potential for efficient operations;
- Maximise the potential for freight trips to be made at off peak times; and
- Accommodate deliveries and servicing activity at the point of delivery.

National Planning Policy Framework and Planning Practice Guidance

2.28 While the NIC recommends that Government should provide new strategic planning guidance for freight, national planning policy for England is currently set out in the *National Planning Policy Framework (NPPF)*. This was originally published by the Department for Communities and Local Government (DCLG) in March 2012 and then revised and reissued in February 2019. Several key sections of the reissued NPPF are relevant to this project, and these are summarised below.

2.29 The NPPF states that the overarching objective of the planning system is threefold (Para 8), namely:

- Economic – to build a strong, responsive and competitive economy;
- Social – to support strong, vibrant and healthy communities; and
- Environmental – to contribute to protecting and enhancing our natural, built and historic environment.

- 2.30 It states that plans and decisions should apply a presumption in favour of sustainable development (Para 11). This means that plans should positively seek opportunities to meet the development needs of their area, and be sufficiently flexible to adapt to rapid change. Strategic policies should, as a minimum, provide for objectively assessed needs for housing and other uses. For decision-taking this means approving development proposals that accord with an up-to-date development plan without delay.
- 2.31 The NPPF states that the planning system should be genuinely plan-led, noting that succinct and up-to-date plans should provide a positive vision for the future of each area, and provide a framework for addressing housing needs and other economic, social and environmental priorities (Para 15). Strategic policies in plans should set out an overall strategy for the pattern, scale and quality of development, and make sufficient provision for employment and infrastructure for transport (Para 20 a and b). It also states that local planning authorities and county councils (in two-tier areas) are under a duty to cooperate, and with other prescribed bodies, on strategic matters that cross administrative boundaries (Para 24).
- 2.32 It notes that the preparation and review of all policies should be underpinned by relevant and up-to-date evidence. This should be adequate and proportionate, focused tightly on supporting and justifying the policies concerned, and take into account relevant market signals (Para 31).
- 2.33 The NPPF states that planning policies and decisions should help create the conditions in which businesses can invest, expand and adapt. It notes that significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development (Para 80). Further, it also states that planning policies and decisions should recognise and address the specific locational requirements of different sectors. For storage and distribution operations, provision should be made at a variety of scales and in suitably accessible locations (Para 82).
- 2.34 Sustainable transport is addressed in Section 9 of the NPPF. Overall, it provides for transport policies that facilitate sustainable development but also contribute towards wider sustainability objectives. It states that transport issues should be considered from the earliest stages of plan-making and development proposals, so that the potential impacts of development on transport networks can be addressed and that opportunities from existing or proposed transport infrastructure, and changing

transport technology and usage, are realised – for example about the scale, location or density of development that can be accommodated (Para 102 a and b).

2.35 It notes that significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions and improve air quality and public health (Para 103).

2.36 The NPPF requires that planning policies should:

- Be prepared with the active involvement of local highways authorities, other transport infrastructure providers and operators and neighbouring councils, so that strategies and investments for supporting sustainable transport and development patterns are aligned (Para 104b)
- Identify and protect, where there is robust evidence, sites and routes which could be critical in developing infrastructure to widen transport choice and realise opportunities for large scale development (Para 104c);
- Provide for any large scale transport facilities that need to be located in the area, and the infrastructure and wider development required to support their operation, expansion and contribution to the wider economy (Para 104e). Policies for large scale facilities, including rail freight interchanges should, where necessary, be developed through collaboration between strategic policy-making authorities and other relevant bodies.

2.37 There is a specific reference in the NPPF that planning policies and decisions should recognise the importance of providing adequate overnight lorry parking facilities, taking into account any local shortages, to reduce the risk of parking in locations that lack proper facilities or could cause a nuisance. Proposals for new or expanded distribution centres should make provision for sufficient lorry parking to cater for their anticipated use (Para 107).

2.38 The NPPF states that in assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location (Para 108a).

2.39 Additionally, the Planning Practice Guidance (PPG) on Housing and Economic Development Needs Assessment³ states that local authorities should understand the extent to which their land provisions

³ Paragraph: 031 Reference ID: 2a-031-20190722

supports the needs of not only larger footprint buildings, but also SME's and more localised last mile facilities.

National Planning Statement for National Networks

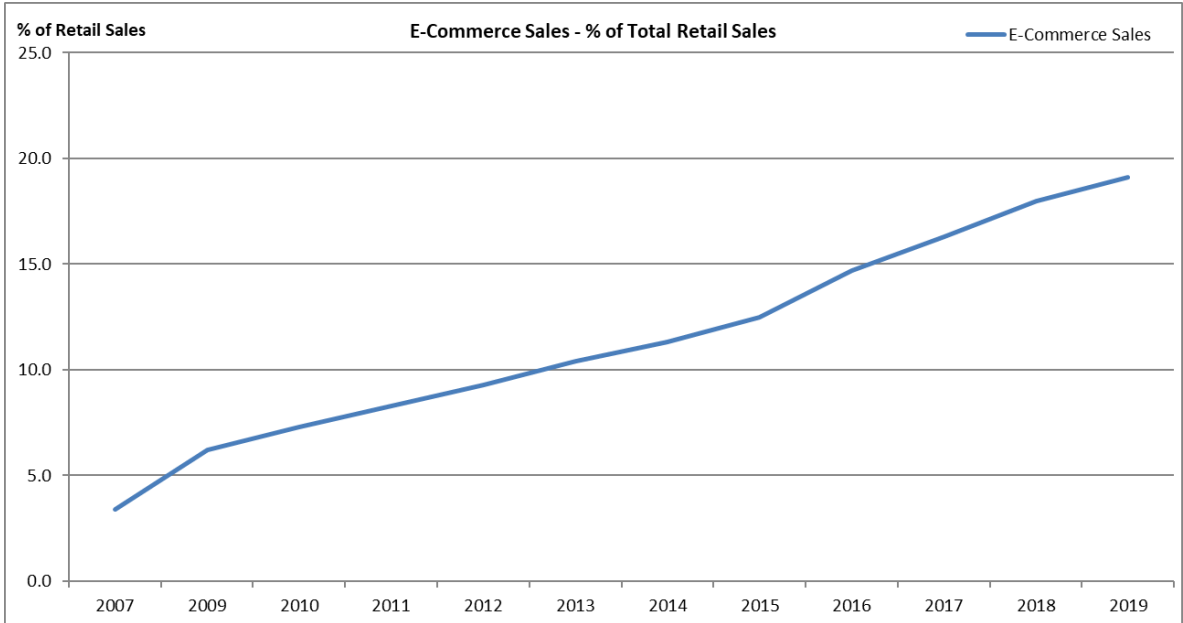
- 2.40 The *National Planning Statement (NPS) for National Networks* was published by the Department for Transport (DfT) in December 2014. It includes the Government's current policies concerning the development of Strategic Rail Freight Interchanges (SRFIs), providing planning guidance for the promoters of such projects. It is considered to be the principal policy document concerning the development of rail-served warehousing and logistics facilities, with Paragraph 1.4 noting that it may also be a material consideration in decision making on applications that fall under the Town and Country Planning Act.
- 2.41 While overall Government freight transport policy is effectively 'mode neutral', the NPS makes the case for further road-rail mode shift on the grounds of sustainability and economics. Paragraphs 2.42 to 2.58, therefore, addresses the need for the development of SRFIs. The document notes that for many freight movements, rail is unable to offer a full end-to-end journey. SRFIs, therefore, enable goods to be transferred between modes, allowing rail to be used to best effect to undertake the long trunk-haul, with road haulage subsequently undertaking the final delivery (Paragraph 2.43). The NPS states that SRFIs aim is to optimise the use of rail in the freight journey by maximising rail trunk haul and minimising some elements of the secondary distribution leg by road through co-location of freight and distribution activities. They are therefore a key element in reducing the cost of moving freight by rail and are important in facilitating modal shift (Paragraph 2.44).
- 2.42 Logistics is currently a predominantly road based industry. However, the NPS states that the users and buyers of warehousing and distribution services are increasingly looking to integrate rail into their transport operations. This will require the logistics industry to develop new facilities that need to be located alongside the major rail routes, close to major trunk roads as well as near the conurbations that consume the goods (Paragraph 2.45).
- 2.43 Four 'drivers of need for SRFIs' are identified by the NPS (Paragraphs 2.46 to 2.52), namely:
- Changing needs of the logistics sector;
 - Rail freight growth;
 - Environmental; and
 - Jobs and growth.

- 2.44 The Government's vision is for a sustainable transport system that is an engine for economic growth. The NPS consequently states that the transfer of freight from road to rail has an important part to play in play in reducing greenhouse gas emissions and addressing climate change (Paragraph 2.53).
- 2.45 To facilitate this modal transfer, the NPS concludes that a network of SRFIs is needed across the regions, to serve regional, sub-regional and cross-regional markets. The NPS concludes that reliance on existing rail freight interchanges and on road-only based logistics is neither viable nor desirable. The Government has therefore concluded that there is a compelling need for an expanded network of SRFIs (Paragraphs 2.54-2.56 and Table 4). Forecasts are presented in the NPS to support these conclusions. It should be noted that these were previously produced by MDS Transmodal in 2013 for Network Rail and included in the NPS; these forecasts have since been updated and are presented below.
- 2.46 Paragraphs 4.83 to 4.89 address the form and function of SRFIs. The NPS states that new SRFIs and extensions to existing sites will need to be appropriately located relative to the markets they will serve, which will largely focus on major urban centres, or groups of centres, and key supply chain routes. Because the vast majority of freight in Great Britain is moved by road, proposed new rail freight interchanges should have good road access as this will allow rail to effectively compete with, and work alongside, road freight to achieve a modal shift to rail. It also states that SRFIs should meet the following criteria for location and form/structure:
- Be located on a route with a loading gauge profile of W8 or more, or capable of enhancement to a suitable gauge;
 - Provide an operational rail network connection and areas for intermodal handling;
 - As a minimum, should be capable of handling four trains per day and, where possible, be capable of increasing the number of trains handled.
 - Have the capability to handle 775m trains with appropriately configured on-site infrastructure and layout. This should seek to minimise the need for on-site rail shunting and allow main line access for trains from either direction;
 - Located away from residential areas or environmentally sensitive areas such as National Parks and AONBs, which may be sensitive to the impact of noise and movements.

The Growth of E-commerce

- 2.47 The graph below tracks the value of e-commerce sales as a percentage of total retail sales since 2007 (derived from ONS data).

Figure 2: E-Commerce Retail Sales 2007-2019



Source: ONS

2.48 During 2019 (the last full year of data), around 19% of all retail sales were undertaken via e-commerce; they were below 4% in 2007. This large growth can be explained by a combination of factors, including:

- Technological developments – the development of smart phones and tablets alongside fast broadband and data provision services means many consumer products can be purchased within a few ‘clicks’;
- The liberalisation of parcel and courier services in the EU – new entrants and the competition subsequently generated have enabled e-commerce retailers to access quick, efficient and cost competitive delivery services;
- Related to the above, retailers and their logistics providers have developed distribution/fulfilment centres which allow goods to be stored, picked and packed efficiently;
- The ability of e-commerce retailers to competitively price goods, undercutting traditional ‘bricks and mortar’ retailers. This has arisen through a combination of bulk buying (from China/Far East), efficient storage and relatively cheap delivery services (see above bullets) and no requirement to operate a labour intensive outlet network in city/town centres which attract high rents and business rates; and
- Convenience – avoiding the need to travel into congested urban centres or retail parks (not everybody subscribes to the ‘retail therapy’ concept!)

2.49 The recent Covid-19 pandemic, and the subsequently forced lock-down of non-essential retail outlets, has resulted in a significant further step-change increase in the volume of e-commerce trade. Items

such as clothing and electricals were only available to purchase on-line between mid-March and June 2020. Interim ONS data for 2020 suggests that e-commerce accounted for 33% of retail sales in May 2020, albeit this fell-back to just under 27% by August 2020 following the re-opening of non-essential retail outlets. However, the long-term lasting impact of Covid-19 from a logistics perspective is that these trends will almost certainly continue and will potentially accelerate; as noted above the NIC report suggests that e-commerce could reach 65% of all retail sales by 2050 (potentially sooner). E-commerce order fulfilment⁴ can be undertaken in three ways:

- Digital – tickets, films and music can be downloaded digitally rather than a physical object being posted to the consumer;
- Direct deliveries to residential and commercial properties or to a designated drop-off point e.g. newsagent or locker at a train station, supermarket etc. – either via the retailer’s transport operation or through one of the parcel/courier networks; and
- ‘Click and collect’ – goods are reserved/purchased online but are collected by the consumer at one of the retailer’s outlets or some other type of ‘collection point’.

2.50 The second and third methods have implications to the need for, size and location of distribution centres. E-commerce retailers have essentially adopted three models to fulfil consumer orders.

E-commerce Model 1

2.51 This is illustrated in the Diagram 1 of Appendix A. Amazon in the UK broadly follows this model. The retailer will operate a series of Regional Distribution Centres (RDCs) which are well located in relation to the main urban conurbations (in the East Midlands Amazon operate RDCs at Coalville and Daventry with a further new facility at East Midlands Gateway. Each RDC receives and then stores cargo from the retailer’s multiple suppliers (by road and rail if located at a rail-served site). Suppliers are often located overseas and this movement will take place via one of the main container/ferry ports.

2.52 On-line orders placed by end-users are then picked, appropriately packed and labelled at the RDC, before being loaded onto freight vehicles for delivery to residential/commercial properties or designated drop-off points in the immediate urban hinterland. This is normally undertaken on a multi-drop basis (sometimes called ‘milk-round’ deliveries, where multiple deliveries are undertaken from the same vehicle). In most cases, LGVs or medium-sized goods vehicles (MGVs) up to 7.5 tonnes

⁴ In e-commerce, the process of picking, packing and delivering the product ordered is often called ‘order fulfilment’ and distribution centres are sometimes called order fulfillment centres.

GVW are utilised depending on the product being handled. The retailer will often out-source all/part of the operation to a 3PL such as DHL or the main multi-national parcel couriers (e.g. TNT, DPD etc.).

- 2.53 The implication of this model with respect to land-use planning is the requirement for large scale warehouse properties located in reasonable proximity to the major urban conurbations. The large urban centres of Leicester, Nottingham and Derby implies demand for such facilities in the Leicestershire area. Given the decarbonising agenda set out in the NIC report, future facilities for operators of this model are likely to demand locations which also meet the following:
- Rail-served in order to move goods from importation ports to the RDCs by means of electrically hauled freight trains; and
 - In relation to the urban hinterland being served, located so that battery electric LGVs/MGVs undertaking final deliveries can round trip on a single charge (and by implication where existing grid capacity is sufficient or could be upgraded).

E-commerce Model 2

- 2.54 This is illustrated in Diagram 2 in the report Appendix A. Ocado, Next and ASOS broadly follow this model. The retailer will operate a single or series of customer fulfilment centres (CFCs) which receive and then store cargo from the retailer's multiple suppliers (by road or rail). The CFC will serve either the whole country (effectively a National Distribution Centre or NDC) or multiple regions (i.e larger hinterland than a RDC). Again, suppliers are often located overseas and this movement will take place via one of the main container/ferry ports (Ocado operates a CFC at BIFT (Birch Coppice SRFI) serving the Midlands and north of England).
- 2.55 Order fulfilment initially begins at the CFC, where on-line orders received by the retailer are picked, appropriately packed and labelled before being loaded onto freight vehicles for trunking to a series of regional cross-dock facilities located close to major conurbations. A cross-docking facility is superficially similar to a warehouse but is designed primarily for transferring cargo directly between freight vehicles i.e. no storage or fulfilment functions. At the cross-docking facility, the consignments are off-loaded from the trunking freight vehicles and re-loaded onto LGVs/MGVs (as per Model 1 above) for delivery to residential/commercial properties or drop-off points on a multi-drop (milk-round) basis.
- 2.56 For the CFC to cross-dock trunking operation, this may be undertaken on HGVs (double-deck trailers are often used given the light-weight nature of the cargo) or potentially rail freight for longer distance

flows. In the case of lighter/small individual consignments such as clothing, this part of the supply chain is often undertaken by the main parcel couriers (e.g. TNT, DHL, Yodel, DPD etc..) via their shared-user trunking networks.

2.57 The implication of this model with respect to land-use planning is the requirement for very large scale warehouse (25,000 sqm+) properties for CFCs located centrally to major urban conurbations across the country. The East Midlands central location to the country at large means it will almost certainly be a sought-after location for such facilities. The large urban centres of Leicester, Nottingham and Derby also implies demand for smaller scale cross-dock type facilities in the Leicestershire area. Given the decarbonising agenda set out in the NIC report, future facilities for operators of this model are likely to demand locations which also meet the following:

- Rail-served in order to move goods from importation ports to the CFCs (and potentially from the CFCs to the cross-docking facilities) by means of electrically hauled freight trains; and
- In relation to the urban hinterland being served, the cross-dock facilities (also rail-served) are located so that battery electric LGVs/MGVs undertaking final deliveries can round trip on a single charge (and by implication where existing grid capacity is sufficient or could be upgraded).

E-commerce Model 3

2.58 This is illustrated in the Diagram 3 in the report Appendix A. This model is effectively the classic 'bricks and mortar' retail supply chain, but where the retailer has subsequently added a 'click and collect' e-commerce offer alongside their existing retail operations. The retailers Sainsburys, John Lewis and Argos broadly follow this model.

2.59 In this model, an NDC receives and stores cargo from the retailer's suppliers (as per Models 1 and 2 above). When required in-store, goods will then be transported (mainly in HGVs but also intermodal rail freight services for longer distance flows) to a series of RDCs located close to major urban conurbations. Likewise, each RDC will also receive goods directly from the retailer's multiple suppliers, generally goods with short lead times (e.g. perishables) or fast-moving lines. Goods received at the RDC, either via the NDC or direct from suppliers, will then be consolidated before onward delivery to the retailer's outlets, normally in HGVs.

2.60 On-line orders received by the retailer are generally picked in-store (from the store's inventory). Fulfilment is completed when the end-user collects the product from store using their own transport,

though most grocery retailers provide a home delivery option from store using LGVs (Morrisons home deliveries are undertaken by Ocado through their CFC network).

- 2.61 The advantage of this model is twofold. Firstly, it has allowed the traditional 'bricks and mortar' retailers to distribute e-commerce orders via their established logistics networks and infrastructure which serve existing stores. Secondly, orders rejected by customers can be fed back into the retailer's inventory almost immediately and be available for re-sale; under Models 1 and 2 goods have to be returned to the retailer via a parcel or mail network, which could potentially take up to a month. Model 3 also allows so called 'up-selling'; while a customer is in-store to collect an on-line 'click and collect' order, they may be tempted to make additional purchases.
- 2.62 The implication of this model with respect to land-use planning is the requirement for very large scale warehouse properties both located centrally to major urban conurbations across the country i.e. East Midlands and also in reasonable proximity to the major urban conurbations. As per above, suitable sites will also be rail-served and permit battery electric LGVs/MGVs to round trip on a single charge (and by implication where existing grid capacity is sufficient or could be upgraded).
- 2.63 Note that it may be the case that an individual company's supply chain could be an amalgam of two or more models, or they may have adopted more than one model for different parts of their businesses. The Marks and Spencer NDC at Castle Donington (East Midlands Distribution Centre) was designed to fulfil e-commerce orders delivered directly to residential properties (Model 2) but at the same time serve the retailer's extensive outlet network (Model 3), both traditional purchases and 'click and collect'.
- 2.64 While Model 3 has allowed some retailers to offer an e-commerce option via their existing logistics networks and infrastructure, Models 1 and 2 have necessitated in many cases investment in new infrastructure (CFCs, RDCs and cross-docks). Parcel couriers have had to develop expanded facilities in order to handle the greater volume of e-commerce passing into their shared-user networks. It is also the case that many older buildings cannot accommodate the modern automated stock handling equipment required for e-commerce, and likewise cannot operate direct delivery e-commerce operations alongside continued servicing of the 'bricks and mortar' outlets under the same roof (they were designed to service a retail network which is rapidly changing).
- 2.65 The expected continual growth of e-commerce is therefore likely to drive further investment in new infrastructure as described, and in particular for:

- Very large scale units for CFCs; and
- Smaller units to operate as cross-dock facilities.

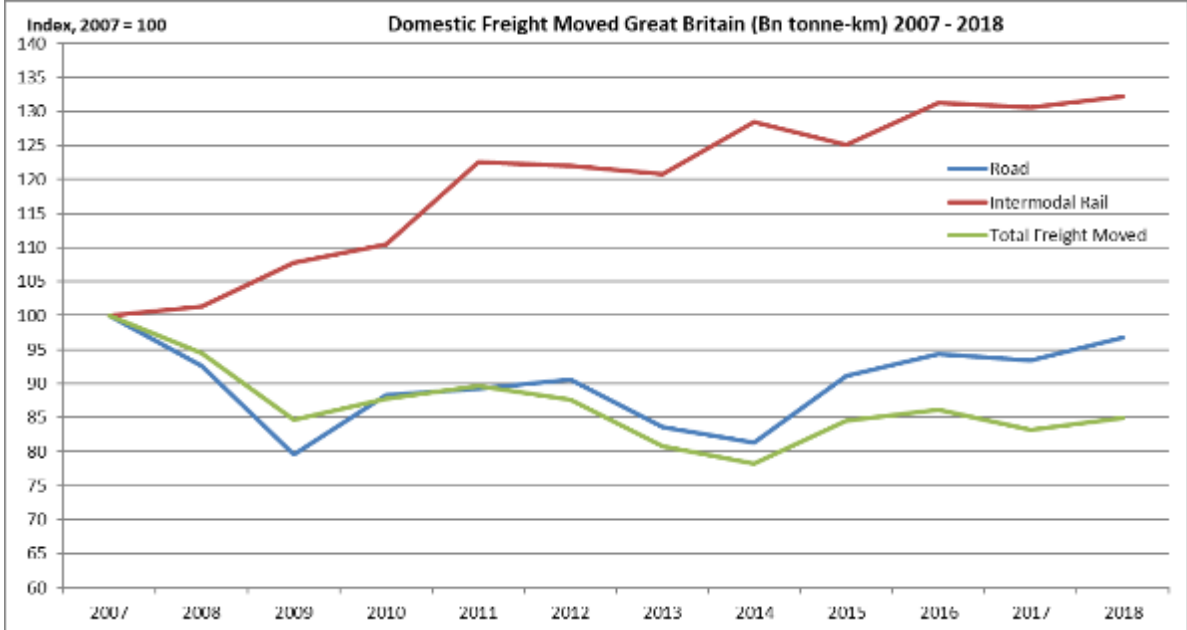
2.66 This has implications for Leicestershire. Its central location to the country at large means it will almost certainly be a sought-after location for large scale CFCs. The large urban centres of Leicester, Nottingham and Derby also implies demand for smaller scale cross-dock type facilities. Further, as traditional retailing declines, this will inevitably lead to a significant rationalisation of existing logistics networks and older warehouse infrastructure. Given the decarbonising agenda set out in the NIC report, future investment will need to be directed at sites which enable goods to arrive/depart by electrically hauled rail freight alongside deliveries using battery electric vehicles.

Rail Freight Trends and Forecasts

2.67 The total volume of cargo lifted by rail freight fell from around 101 million tonnes in the financial year 2004/5 to just over 75 million tonnes in 2018/19. Taken at face-value, this trend would appear to suggest that rail freight is a declining sector. However, this overall market fall is explained by the dramatic reduction in coal volumes, principally coal supplied to the Electricity Supply Industry (ESI), which fell from a high of 52 million tonnes in 2012/13 to around 10 million tonnes in 2018/19. This is due to European emissions legislation and Government policy to phase out electricity generated from coal, which has resulted in many coal-fired power stations closing and a consequent reduction in the use of steam coal for electricity generation. Fiddlers Ferry (Cheshire) closed in March 2020 and Drax (Yorkshire) plans to stop burning coal in 2021. West Burton and Ratcliffe on Soar are likely to close ahead of the Government's cut-off date of 2025, meaning that within a few years no ESI coal will be distributed.

2.68 The fall in ESI coal volumes has actually masked significant growth in other sectors. Removing ESI coal, rail freight tonnes-lifted increased from 57 million tonnes in 2004/5 to 65 million tonnes in 2018/19. When measured as freight moved (tonne-km), intermodal rail freight grew from 5.5 billion tonne-km in 2007/8 to 7.3 billion tonne-km in 2018/9. Over the same time period, construction materials (principally aggregates) grew from 2.8 billion tonne-km to 4.5 billion tonne-km. Rail has benefitted from an increased concentration on rail-linked 'super quarries' in the Midlands (Leicestershire and Peak District) and the Mendips, replacing locally sourced materials in the South East. The graph below shows the performance of total domestic freight moved (tonne-km) from 2007 to 2018 alongside the equivalent performance of intermodal rail freight and road haulage (*Source – all data: Transport Statistics Great Britain 2019*).

Figure 3: Domestic Freight moved in GB



Source: Transport Statistics Great Britain and Consultants Calculation to Index

2.69 The key drivers of growth in the intermodal sector have been:

- A growing proportion of consumption is satisfied by imports, which often arrive in maritime containers through rail-linked ports;
- Road haulage costs are rising (fuel and driver wage rises), while at the same time rail freight has become more fuel and labour efficient through using longer trains; and
- The development of SRFIs at key locations in the Midlands and northern England, thereby reducing the costs associated with transferring cargo from rail to storage and onward redistribution.

2.70 Rail freight’s commercial ‘offer’ to the market has therefore become more competitive over the past 15 years. As a consequence, intermodal rail freight moved has grown by 32% despite the intervening financial crises of 2008/9. Over the same time period, road haulage traffic has fallen. While part of this can be accounted for by the further decline of heavy industry, modal shift to intermodal rail freight has also played a role. A number of developments within the logistics market illustrate these trends in more practical terms. These include:

- It is now well known that Tesco, Asda and Sainsbury’s all use rail services to transfer goods from their warehouses in the Midlands (DIRFT and Magna Park) to their Scottish distribution centres (and in the case of Tesco to Dagenham and South Wales), primarily as it offers a more cost competitive solution;

- *Maritime Transport* has historically been a road haulier specialising in the inland transport of containers to/from ports. However, in 2019 they effectively purchased rail operator DB Cargo's intermodal business, including the lease on terminals in Trafford Park and Wakefield (they already managed the BIFT/Birch Coppice terminal). They are now seeking to undertake much of their long distance hauls from the ports by rail freight. This is mainly on cost grounds, and it also allows their HGV drivers to be focused on more efficient short-distance trips. This is essentially the reason they sought and won the operating concession for the intermodal terminal at East Midlands Gateway.
- Peel Ports (Liverpool) and Teesport have begun to contract intermodal train services from their respective ports as it provides their shipping line customers with a cost competitive inland transport option. This includes a service from Teesport to iPort Doncaster for Ikea, a distance of only 140km. AB Ports at Immingham and Hull are understood to be exploring similar services; and
- Stobart and Scottish hauliers Russell and Malcolm also contract train services for some of their long distance flows, particularly between the Midlands and Scotland.

2.71 While there are still 5 principal rail freight operating companies of FOCs (DB Cargo, Freightliner, GBRf, DRS and Colas Rail), within the intermodal sector there has been a shift over recent years in the manner by which services are contracted commercially. In most cases, the FOCs are now contracted to operate services on-behalf of shippers, which include shipping lines, ports, retailers and road hauliers (as per above). The commercial risk associated with filling the trains therefore rests with the contracting shipper, while the FOCs effectively provide the traction to haul the wagons in return for a guaranteed revenue stream. The key exception is Freightliner's services operating from the deep-sea container ports, which still effectively sells 'slots' on scheduled trains to shipping lines.

Rail Freight Forecasts

2.72 Against this background of growth (excluding coal), during Summer 2018, MDST were commissioned by Network Rail to produce a set of rail freight demand forecasts for 2023/4; they were intended to inform their inputs into the Control Period 6 determination process. Subsequently, during late 2018, MDST were further commissioned by Network Rail to produce demand forecasts for 2033/4 and 2043/4. The forecasts for the three years concerned were to represent an update on similar forecasts produced in 2013 and would inform Network Rail's long-term planning. Six main scenarios were forecast, reflecting a range of economic factors and overall market growth:

- Scenario A: factors favouring rail (relative to road) and low market growth;
- Scenario B: factors favouring rail and high market growth;
- Scenario C: factors less favourable to rail and low market growth;
- Scenario D: factors less favourable to rail and high market growth;
- Scenario E: central scenario (factors and market growth central to Scenarios A-D);
- Scenario F: as scenario E, but with internalisation of external costs.

- 2.73 The principal forecasting tool was the latest version of MDST's GB Freight Model. The forecasts covered 15 main commodity groupings, including intermodal (ports, domestic and Channel Tunnel), construction, steel, biomass and automotive. As per the earlier forecast iterations, the outputs are projections of future demand unconstrained by capacity, either on the national railway network or at terminals. Consultation was undertaken with the main rail freight traction operators, the Department for Transport (DfT) and Network Rail during the process.
- 2.74 In each scenario, various assumptions were made regarding changes to HGV and train crew wages and fuel costs which were consistent with the DfT's WebTag appraisal guidance. Scenarios A and B also included some moderate improvements in train productivity (train length). Maritime container growth was derived from MDST's World Cargo Database trade forecasting tool, with domestic non-bulk traffic growth related to population change. For the intermodal sector, Scenarios A and B assumed that in future 26% of warehouse new-build would be located at a rail served site (around 260,000 square metres per annum). Scenarios C and D assumed half this rate, with Scenario E adopting the midpoint between the two.
- 2.75 The final forecasts (following consultation) were published by Network Rail in August 2020, alongside a routing study (also produced by MDST) which allocated the forecast demand (in terms of estimated trains per day) to specific routes/lines on the national network⁵. Overall, the forecasts indicate continued growing demand for rail freight services, particularly in the intermodal and construction sectors. Table 1 presents a summary of the forecasts to 2033/4 and 2043/4 in terms of tonnes-lifted.

⁵ The forecasts and routing study can be found here - <https://www.networkrail.co.uk/running-the-railway/long-term-planning/>

Table 1: Table: Summary of Rail Freight Demand Forecasts to FY2033/4 and FY2043/4

	000s tonnes lifted						
	Actual 2016/7	A	B	C	D	E	F
2033/4 TOTAL	85,786	121,248	147,013	86,333	106,258	113,145	159,122
of which:							
Ports Intermodal	16,213	38,505	42,549	25,920	28,759	31,756	47,832
Domestic Intermodal	2,481	10,096	12,440	3,311	4,576	6,046	18,465
Construction	24,286	36,348	45,410	23,028	28,769	35,869	51,277
2043/4 TOTAL	85,786	153,617	200,212	113,518	151,132	147,696	194,307
of which:							
Ports Intermodal	16,213	51,844	56,596	35,099	39,321	42,879	61,493
Domestic Intermodal	2,481	16,724	23,633	5,203	9,026	10,933	27,613
Construction	24,286	47,903	72,412	37,782	57,113	53,338	63,182

Source: MDST GB Freight Model for Network Rail

- 2.76 Taking the central scenario (E), total rail freight demand is forecast to grow from 85.8 million tonnes in 2016/7 to 113.1 million tonnes by 2033/4 (+32%) and 147.7 million tonnes by 2043/4 (+72%). Significant growth in demand is forecast for the ports intermodal, domestic intermodal and construction sectors. Ports intermodal, for example, is forecast to grow from 16.2 million tonnes in 2016/7 to 31.8 million tonnes by 2033/4 (+96%) and 42.9 million tonnes by 2043/4 (+165%). Increasing rail freight competitiveness is the key driver of growth in the intermodal sector, essentially the same three drivers which explained the recent trends described above.

Rail Network Enhancements

- 2.77 In the Leicester and Leicestershire SDS, a number of rail enhancement schemes in the East Midlands were detailed. Some were specific to freight while others were essentially passenger focused projects that would generate 'spin-off' benefits for the freight sector. These schemes were to be funded through the Control Period 5 (2014-2019) funding settlement agreed between Network Rail, the Department for Transport (DfT) and the Office of Rail and Road. This included a 'ring fenced allocation' of £200 million 'to fund Strategic Freight Network (SFN) investments identified by the industry'. The key areas of opportunity subsequently identified in the SDS reflected, in part, the rail enhancement schemes planned.

2.78 Due to significant cost over-runs on a number of projects nationally, principally the Great Western Main Line electrification, many other schemes were subsequently reduced in scope (thereby reducing the cost but also the deliverable benefits), have been delayed or cancelled completely. Table 2 provides the current position with respect to the enhancement schemes listed in the SDS that were expected to be delivered (or at least commenced) during Control Period 5.

Table 2: Rail Enhancement Scheme Progress

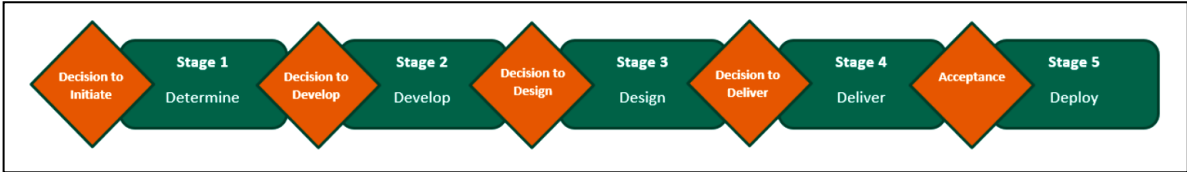
Scheme and Description	Current Position
<p><i>Felixstowe to Nuneaton via Ely and Peterborough capacity enhancement.</i> Works at various locations, including Syston-Leicester-Wigston, to generate additional freight capacity between Felixstowe and Nuneaton. Effectively Phase 2 of the route upgrade (Phase 1 being the gauge clearance on the route to W10 which was completed 2009-2014)</p>	<p>Most of the works planned have effectively been delayed indefinitely with no timescale for development or delivery. This includes the grade separation planned for freight trains passing Syston-Leicester-Wigston towards Nuneaton. The only scheme currently being delivered on the route (completion expected April 2021) is the dive-under at Werrington Junction (north of Peterborough) to enable freight trains to pass under the ECML towards the Spalding-Lincoln line. It is understood that solutions are still being examined for Syston-Leicester-Wigston and other schemes such as Ely-Soham double tracking and Ely North Junction upgrade, albeit with no guarantee on detailed development, funding or delivery at this stage.</p>
<p><i>The electric spine.</i> An electrified and W10 gauge cleared freight route from Southampton to South Yorkshire via Oxford, Bedford and Leicester.</p>	<p>Effectively cancelled, albeit parts of the scheme are being delivered in the form of East-West Rail (reopening Oxford-Bicester-Bletchley, albeit as a non-electrified passenger route) and MML electrification from Bedford to Kettering, Corby and Market Harborough.</p>
<p><i>Doncaster to Water Orton loading gauge enhancement.</i> W12 loading gauge between Doncaster and Water Orton via Erewash Valley Line and Trent Junctions</p>	<p>Completed in April 2019.</p>
<p><i>MML electrification.</i> Full electrification from Bedford to Sheffield and Nottingham via Leicester</p>	<p>De-scoped, with only Bedford-Kettering-Corby and Kettering-Market-Harborough to be delivered as part of the current funding package. Bedford-Kettering Corby expected to be completed by the end of 2020 (live for passenger services from the May 2021 timetable). Part of this scheme has included the installation of a fourth track between Sharnbrook Jn and Kettering (additional freight capacity).</p>
<p><i>Derby station area re-signalling and re-modelling.</i> An enhanced layout with additional platforms to increase operating resilience and capacity.</p>	<p>Completed in 2019.</p>

2.79 The first two schemes listed above have direct relevance for rail freight in Leicestershire (and hence SRFI location). If they had been delivered (or when they are eventually delivered) they would have generated additional freight capacity between Peterborough and Nuneaton via Leicester, along with a W10 gauge cleared route from the south coast and along the MML through Leicestershire (including

trains joining the MML at Syston from Peterborough and heading north). The *Key Area of Opportunity B* (Midland Main Line North corridor) identified in the SDS was effectively predicated on the MML loading gauge upgrade. The MML electrification would also have helped deliver towards the zero-carbon target.

2.80 Due to the afore-mentioned cost over-runs, the DfT decided that the funding settlement for Network Rail’s Control Period 6 (2019-2024) would only cover day-to-day operations, maintenance and renewals of assets. Rail network enhancements would in future be funded directly by the DfT separately from the Control Period financial settlement, with projects appraised for their benefits and funding subsequently allocated on a case-by-case basis. This was set out in the DfT’s New Approach to Rail Enhancement document published in March 2018.

2.81 A *Rail Network Enhancement Pipeline (RNEP)* has been created as part of this new funding process. It is a five stage process as follows:



Source: RNEP Update, October 2018 (DfT)

2.82 Note that the RNEP includes a series of ‘decision gateways’ through which schemes must pass before they can be delivered. The ‘Decision to Initiate’ essentially takes a scheme into the pipeline and unlocks funding for developing a Strategic Outline Business Case (SOBC). Should a successful SOBC emerge, the ‘Decision to Develop’ provides the go-ahead for further advance development work towards a single viable option and to construct an Outline Business Case. Again, should this stage be successful, a ‘Decision to Design’ will enable detailed design work and planning to prepare the scheme for delivery as well as constructing a Full Business Case. The ‘Decision to Deliver’ effectively provides funding for a project’s implementation. The process conforms with the Treasury’s *Green Book*.

2.83 Relevant schemes in the East Midlands which are now part of the RNEP are shown in Table 3.

Table 3: Rail Network Enhancement Pipeline, East Midlands

Scheme and Description	Current Position
<i>Passed 'Decision to Initiate'</i>	
Syston to Trent Junction gauge enhancement	Now in stage 1. Next gateway – 'Decision to Develop'
<i>Passed 'Decision to Develop'</i>	
None in East Midlands	
<i>Passed 'Decision to Design'</i>	
Hope Valley capacity. Provide additional freight capacity on the Hope Valley line	Now in stage 3 Next gateway – 'Decision to Deliver'

2.84 The afore-mentioned freight demand forecasts and associated routing study should form the basis of Network Rail's future strategy for freight enhancements nationally.

2.85 Longer term, Network Rail is currently developing a *Traction Decarbonisation Network Strategy (TDNS)*. An *Interim Programme Business Case* report⁶ was published in September 2020, which was intended to provide the DfT and the Welsh/Scottish devolved administrations with recommendations to inform decisions required to remove diesel trains from the railway network. The document provides a summary of the evidence collated and analysis undertaken. The report notes that currently around 15,400 single-track km (STK) are not electrified, representing around 62% of the national network (when defined as STKs). The TDNS process has investigated the most realistic/feasible alternatives to diesel traction and concluded that there are essentially long-term three options, namely electrification (by overhead wires), battery electric trains and hydrogen fuel cell trains. The report concludes that electrification is the best whole life cost solution for more intensively used areas of the network. In particular, for freight the report concludes that for freight electrification is the only feasible option available (albeit slow speed battery electric operations will probably be required in terminals and sidings). On lesser used lines, battery electric or hydrogen fuel cell will probably emerge as the long-term solutions. Overall, the report recommends that:

- An additional 13,000 STKs of infrastructure will need to be electrified;
- Hydrogen fuel-cell deployment over 1,300 STKs of infrastructure; and
- Battery train deployment over 800 STKs of infrastructure.

For the East Midlands, the report recommends that all lines be electrified, including the MML north of Market Harborough (the planned limit of electrification under the currently funded scheme).

⁶ <https://www.networkrail.co.uk/running-the-railway/long-term-planning/>

2.86 Assuming the Syston to Trent Junctions loading gauge enhancement (RNEP) also proceeds (logic would suggest that it is delivered in tandem with the MML electrification extension north from Market Harborough), this would generate two important strategic W10/electrified routes through Leicester, as follows:

- Midland Main Line Market Harborough to Trent Junctions via Leicester; and
- Peterborough to Nuneaton via Syston, Leicester and Wigston.

2.87 Importantly, this would also create full W10 cleared routes to all the deep-sea container ports, the Channel Tunnel, the Humber and the Mersey ports and Scotland. It is therefore alongside these routes that new SRFIs will need to be developed. Likewise, future growth opportunity areas in local plans will also need to reflect these enhanced routes. It is important to note that there are still long-term issues related to network capacity, particularly on the key Syston-Leicester-Wigston section of the MML. However, as noted above works planned on this section have effectively been delayed indefinitely with no timescale for development or delivery (they are not currently part of the RNEP).

Highway Network Enhancements

2.88 Table 4 lists the key highway schemes currently being delivered, developed or proposed for the main strategic highway network in Leicestershire. It is at sites close to the strategic road network or those routes which are to be upgraded as described below where developers and occupiers will be seeking to invest in new warehouse capacity.

Table 4: Leicestershire Highway Schemes

Road	Scheme Description
A511	<ul style="list-style-type: none"> Junction improvements at nine locations between A42 Junction 13 near Ashby-de-la-Zouch to M1 Junction 22. Localised widening. A new link road, connecting the A511 to Bardon Link Road, creating a new north-south link across Coalville. Growth Corridor scheme prioritised by Midlands Connect (MC) for submission to DfT. Outline Business Case submitted in January 2020 – outcome awaited. Estimate completion 2024.
A5	<ul style="list-style-type: none"> Early stages of corridor study (M1 J18 to M6 J12) Developing Strategic Outline Business Case (SOBC)
A5	<ul style="list-style-type: none"> A5 Dodwells to Longshoot. Plan to widen the current section of single carriageway between Dodwells roundabout and the Longshoot junction to a dual carriageway. Part of the Roads Investment Strategy 2 (RIS2) programme, with funding committed for Road Period 2 (RP2, 2020/21 to 2024/25). Estimated delivery towards the end of RP2.
M1	<ul style="list-style-type: none"> Upgrade of M1 J21 to 23a. Capacity improvements, potentially to include some form of Smart Motorway solution (though Smart Motorway solutions are currently being reviewed by Highways England). Project to be developed during RIS2, but scheduled for delivery as part of the Roads Investment Strategy 3 (RIS3) pipeline i.e. after 2025
M1	<ul style="list-style-type: none"> Junction 21 improvement. Upgrade of Junction. Leicester CC promoting inclusion in Highways England works programme 2020-2025.
A606/A607	<ul style="list-style-type: none"> Melton Mowbray Distributor Road (MMDR) – southern section. 2020-25.
M69	<ul style="list-style-type: none"> Upgrade of Junction 2 and link road. Would add south facing slip roads at Junction 2. Funding currently not secured. Maybe taken forward as part of the Hinckley NRFI scheme – developer/part developer funded.
M1	<ul style="list-style-type: none"> The possibility of a new M1 Junction 20a. A new Motorway Junction approximately mid-way between Junctions 20 (Lutterworth and Magna Park) and 21 (Leicester and M69), with the potential to link with the A46. Leicestershire CC currently working with Midlands Connect and Highways England to enter scheme into the RIS3 pipeline.

Sources: MDS Transmodal

2.89 In addition to the above, the DfT 2020-2025 Road Investment Strategy 2 notes the following projects:

- M1 Leicester Western Access
- M1 North Leicestershire extra capacity
- A5 Hinckley to Tamworth

- 2.90 These projects are listed as being for RIS3 pipeline delivery, albeit there is no guarantee of any delivery funding at this time.
- 2.91 Other relevant schemes outside Leicestershire (but will impact on logistics activity in the county) which are to be funded under RP2 are:
- A46 Newark by-pass – completing the dualling of the A46 to the A1 at Newark;
 - A38 Derby Junctions – replacement of roundabouts on the A38 with grade-separated junctions; and
 - A46 Coventry Junctions – grade-separation of junctions on the A46 in Coventry (Binley and Walsgrave).
- 2.92 Other relevant schemes outside Leicestershire which are likely to form part of the RIS3 pipeline include upgrading the A5 from Hinckley to Tamworth. It is also worth noting that the A14 between the A1 and M11 (Huntingdon) has recently been upgraded, thereby providing enhanced access to the Haven ports from Leicestershire.
- 2.93 Note that some of these schemes are currently not committed and funded, and they have no status in planning terms. Where these schemes are designed to provide greater connectivity opportunities to the long-distance strategic highway network, the areas served by them will become increasingly attractive to developers seeking to implement new large scale warehouse capacity. Again, future growth opportunity areas in local plans will also need to reflect these enhanced routes.

Brexit

- 2.94 The UK formally left the European Union (EU) on 31 January 2020. A withdrawal agreement setting the terms of the UK's departure made provision for a transition period ending on 31 December 2020, though this could have been extended for up to two years at the request of the UK Government (an option that was subsequently not taken up). During the transition period, the UK remains a member of the EU Single Market and Customs Union. It therefore has to follow EU Regulations/Directives during this period, including processes relating to the import of goods, the regulation of freight transport (particularly road haulage) and the freedom of movement for labour. The future trade and economic relationships with the EU (along with other issues such as travel, health care and security etc..) are meant to be agreed and then implemented by the start of January 2021.

- 2.95 At the time of writing, formal discussions with the EU are still on-going with respect to future relationships on trade and other matters, and at this stage it is therefore impossible to define the precise outcome. However, the UK Government has committed to:
- Leaving the EU Customs Union so that the UK can negotiate Free Trade Agreements (FTAs) with other countries; and
 - Ending freedom of movement of labour with the EU and instead introducing an immigration system focused on permitting 'skilled' labour from anywhere in the world.
- 2.96 These two commitments alone will have a significant impact on the logistics sector, as large scale warehouses handle significant volumes of cargo imported from the EU, often employing labour which has been recruited from other EU countries. This in turn may also affect the means by which those goods arrive.
- 2.97 The UK Government's formal position currently is that they want to avoid the introduction of tariffs and quotas on the trade in goods with the EU from the start of January 2021. Even if that is the case, the formal departure from the EU Customs Union on that date will necessitate the introduction of formal Customs declaration procedures on goods imported from the EU (i.e. those currently in place for imports from outside the EU, even where zero tariffs apply). These are significantly more bureaucratic and time consuming when compared with those applied to goods which pass freely within the EU Single Market.
- 2.98 Since the mid-1990s, the Dover Straits (Port of Dover and Channel Tunnel), predominantly handling accompanied HGVs, has become the largest and most important route into Great Britain for imported cargo from the EU. The ability for goods to pass freely without Customs checks, combined with competitively priced turn-up and go ferry/shuttle services and the use of cheaper eastern European haulage (running on lower cost diesel) have been, amongst other factors, the key economic drivers behind this position. This position has enabled goods to move speedily at competitive transport rates, even if they could realistically sustain longer transit times.
- 2.99 However, the post January 2021 trading environment is likely to have an impact on this position. The introduction for formal Customs checks (associated with the afore-mentioned introduction of Customs declaration procedures) could generate delays on the Calais-Dover corridor, leading to increases in transit times and impacts on journey reliability. Restrictions on the activities of EU haulage operators once they enter the UK are also likely; currently under EU rules they are able to freely seek backloads

and transport cargo within the UK (cabotage operations). Both consequences are likely to result in additional transport costs.

- 2.100 Shippers may therefore start to seek alternative routes which offer cost savings and provide better journey time reliability. One consequence of this could be a shift away from using accompanied HGVs passing via the Dover Straits. Instead, shippers would use unaccompanied trailers on RoRo⁷ ferries or containers on short-sea LoLo⁸ shipping services, principally serving East Coast ports on the Haven, Humber and Tees. The longer sailing times would potentially allow the goods to be formally cleared by Customs during the sea voyage, thereby permitting their (almost) immediate release from the port once landed. There is some evidence to suggest shippers may have already begun this shift as shown in Table 5.

Table 5: RoRo Units Handled at Dover and Great Britain Ports 2016 and 2018

Geography	RoRo Units (000's)	
	2018	2016
Dover	2,530	2,642
Total GB	7,099	7,074
% Dover	35.6%	37.3%

Source: DfT Port Freight Statistics

- 2.101 The data shows that between 2016 and 2018, the Port of Dover has seen a reduction both in the number of RoRo units handled (almost exclusively accompanied) and its market share. While conclusions should not be drawn from such a short timespan of data (and over the long-term this maybe just a 'blip'), it does potentially indicate that shippers are beginning to use other routes into the UK from the EU which avoids the Dover Straits.
- 2.102 The consequence for East Midlands strategic warehousing is that a proportion of goods which hitherto arrived from Dover on an eastern European HGV may instead arrive from an East Coast port on a British registered goods vehicle. The greater use of LoLo containers also potentially generates a critical mass which enables the contracting of full-length rail freight services to inland sites (noting that the main East Coast ports are all rail-served). It is understood that a number of operators are now examining the viability of intermodal rail services from the Humber and Tees to terminals such as DIRFT and Hams Hall. To remain competitive, it is therefore important that the East Midlands

⁷ RoRo – roll-on roll-off.

⁸ LoLo – lift-on lift-off (where containers are lifted to and from ships, usually by means of quayside cranes)

(and by extension Leicestershire) seeks to develop a substantial proportion of its future new-build at SRFIs (in addition to the sustainability reasons or planning obligations).

2.103 Ending freedom of movement of labour with the EU and instead introducing an immigration system focused on permitting 'skilled' labour from anywhere in the world is also likely to impact on the East Midlands strategic warehousing sector. Distribution centres in the East Midlands have to date attracted labour from across the EU; freedom of movement has allowed warehouses to be fully staffed with cost competitive labour, often in areas where occupiers have otherwise struggled to recruit from the domestic labour pool. The Government's proposed new immigration system would effectively prevent future recruitment on similar terms, as the positions to be filled and the associated wage rates would be classed as 'unskilled'. The impact of this is potentially twofold:

- It may spur further investment in warehouse automation as a means of 'replacing' the lost labour from the EU. However, in many cases older warehouse buildings cannot accommodate modern automated stock handling equipment, particularly to service e-commerce. Further warehouse automation will therefore necessitate the continued development of new-build units to accommodate the equipment. Also, the staff required to install and maintain the automation equipment would more likely be in the 'skilled' category the Government's new immigration system is designed to attract;
- In addition to warehouse operatives, many HGV operations based at strategic distribution centres have relied on drivers from the rest of the EU. This is likely to lead to difficulties in the future recruitment of drivers from the domestic labour pool. It may be that HGV drivers will become focused on operating short distance trips on an intensive basis, with medium to long distance trips instead undertaken by rail freight.

2.104 To remain competitive, it is therefore important that the East Midlands (and by extension Leicestershire) seeks to develop new rail-served sites (in addition to the sustainability reasons or planning obligations).

Industry Publication Perspective

What Warehousing Where, Turley, 2019

2.105 Turley's "What Warehousing Where" report, written in conjunction with the British Property Federation in 2019, aims to uncover the future role of logistics across England in order to better align warehouse construction with strategic housing policies.

2.106 It reports there currently is 69 sqft of warehousing floorspace for every home across England. Assuming that this ratio will remain the same, the study claims that there should be an additional 21.6 million square feet of logistics floorspace in line with the government target of 300,000 homes per

annum. Although a point of interest, this provides a national average that will not be applicable to specific areas – some will have a different population to floorspace ratio and will serve different roles. For example, the ratio differs by region. Within the “Golden Triangle” of the East and West Midlands, for example, the ratio is closer to 100 sqft per home. This is compared to regions with only local significance in logistics, such as the North East and London, which have ratios as low as 40 sqft of logistics floorspace per home. This accounts for all warehousing and not just large strategic development.

- 2.107 According to the report, the majority of logistics employees live within 15 miles of their work, which could mean that proximity to labour pools is a driver for logistics firms. The average salary for the sector is greater than the national average as there has been consistent growth in demand and the requirement for more complex skills.
- 2.108 There is a specific requirement for those with skills in electrical and mechanical engineering, IT and analytics, and this is expected to only increase in the future.
- 2.109 This coincides with the fact that more people are buying their products online than 5 years ago, with growth particularly being driven by 18-35 year olds. There is also an increased blurring in land use as logistics and retail blend into pick-up points and fulfilment centres. Warehouse floorspace demand has doubled over the past decade, with a large driver of that demand being from retailers. Retailers now represent two-thirds of all warehouse floorspace as compared to one-third a decade ago. The 2017 SDS study noted that the automotive sector, particularly due to JLR taking up 44,000 sqm at Prologis Park Ryton, was seen as a key driver for floorspace take up. Subsequently JLR has received permission for a new distribution centre at Appleby Magna, North West Leicestershire for c. 300,000 sqm. Whilst these are significant developments there is little additional evidence regarding further automotive or advanced manufacturing requirements.
- 2.110 Logistics floorspace was also defined across several size-types down the supply chain:
- **National Distribution Centres (NDCs)** are 500k-1m sqft (100 acres)
 - Located along the “spine” of the country. Require direct access to Strategic Rail Freight Interchanges (SRFIs), ports, airports, and a strong power supply. They also require a labour pool within a short drive.
 - **Regional Distribution Centres (RDCs)** are 200k-500k sqft (5+ acres).
 - More common amongst food retailers. Require locations with access to population centres along motorways.

- **Last Mile Fulfilment** are up to 100,000 sqft on a minimum 5-acre site (urban sites its 3-5 acres) and some Pureplay.
 - Locational requirements include a concentration of the population, strong online spend, population growth, and sustainable transport. The fine balance of this is called the “sweet spot”.
- **Pickup** which comprise spaces such as amazon locker, doddle, existing retail stores
 - Broad locational characteristics but typically requires customers that spend their money online.

2.111 Barriers to finding the “sweet spot” of last-mile logistics space include:

- Lack of available sites and stock being released by LPAs.
- Land designation restrictions that exist as a ring around cities where last mile prefers to locate such as environmental restrictions including Green Belt and AONB sites.

Delivering the Goods, British Property Federation, December 2015

2.112 The British Property Federation (BPF) produced “Delivering the Goods: The Economic Impact of the UK Logistics Sector” in order to challenge common misconceptions about the sector and demonstrate its role in driving economic growth.

2.113 At the time of writing, the logistics sector supported 710,000 employees across the UK, and employment had increased by 40% between 2009 and 2013. Average salaries across the logistics sector were £28,000 per worker as compared to £20,000 on average. Only 15% of the sector works part time as compared to 32% on average across all sectors.

2.114 Modernisation of facilities is leading to higher employment densities, or more sqm required per employee. The report indicates that every 1,000 sqm of floorspace equates to 12 FTE jobs (83 sqm per employee).

2.115 Whilst there is a clear current economic benefit of the logistics sector, other aspects of the future of logistics were analysed. The sector is forecast to see a 31% increase in full time employment between 2013 to 2035.

2.116 Drivers of change include e-commerce growth, wholesaling, manufacturing and retail growth. As high-speed internet is rolled out across the country, new markets will continue to open up for online shopping.

2.117 Key skills required are drivers, managers, mechanical engineers, electrical engineers and computer specialists. In particular, skills gaps are increasing. These are especially apparent for technical skills,

customer-handling skills, and light goods vehicle drivers. This will become increasingly apparent as last-mile delivery increases in frequency.

2.118 The report recommends:

- Provision of the right quantity of space in the right locations
- Acknowledgment of the economic contribution of the sector
- Coordinated infrastructure planning
- A joined-up approach from government
- Building a dialogue with local planning authorities

Drivers of Change – Summary of Key Findings

2.119 The road and rail freight sectors must decarbonise by 2050 if the UK is to meet its climate change obligations.

2.120 For smaller road freight vehicles (i.e. LGVs or vans), battery electric vans are emerging as a viable zero emission alternative to petrol- or diesel-powered vans. Decarbonising HGVs will be 'more challenging', though three key options are emerging as the most promising alternatives, namely e-highways, battery electric and hydrogen fuel-cells.

2.121 New warehousing developments will need to be located where existing grid capacity is sufficient or could be upgraded (network reinforcement) relatively easily. It will also be important that warehouse facilities are designed so that loading docks can be equipped with fast charging points.

2.122 Network Rail's TDNS concluded that electrification is the only realistic solution for decarbonising rail freight operations. For the East Midlands, Network Rail's TDNS recommends that all lines be electrified, including the MML north of Market Harborough (the planned limit of electrification under the currently funded scheme).

2.123 While overall Government freight transport policy is effectively 'mode neutral', the NPS makes the case for further road-rail mode shift on the ground of sustainability and economics. The NPPF notes that planning policies and decisions should recognise and address the specific locational requirements of different sectors. For storage and distribution operations, provision should be made at a variety of scales and in suitably accessible locations. Policies for large scale facilities, including

rail freight interchanges should be developed through collaboration between strategic policy-making authorities.

- 2.124 At the end of 2019, e-commerce accounted for 19% of all retail sales. During the peak of the Covid-19 pandemic, it reached 33% albeit this fell-back to 27% once non-essential retail outlets re-opened. However, the long-term lasting impact of Covid-19 from a logistics perspective is that these trends will almost certainly continue and will potentially accelerate.
- 2.125 The expected continual growth of e-commerce is likely to drive further investment in new infrastructure, in particular for:
- Very large-scale units for CFCs. The East Midlands central location to the country at large means it will almost certainly be a sought-after location for such facilities; and
 - Smaller units to operate as cross-dock facilities. The large urban centres of Leicester, Nottingham and Derby also implies demand for such facilities in the Leicestershire area
- 2.126 Given the decarbonising agenda set out in the NIC report, future investment will need to be directed at sites which enable goods to arrive/depart by electrically hauled rail freight alongside deliveries using battery electric vehicles.
- 2.127 Rail freight's commercial 'offer' to the market has become more competitive over the past 15 years. As a consequence, intermodal rail freight moved has grown by 32% despite the intervening financial crises of 2008/9. Total rail freight demand is forecast to grow to 147.7 million tonnes by 2043/4 (+72% over 2016). Significant growth in demand is forecast for the ports intermodal, domestic intermodal and construction sectors. Recent gauge clearance schemes and likely electrification should ensure that Leicestershire remains a key location for rail-served logistics.
- 2.128 Overall, the locational advantages of the golden triangle are unlikely to diminish. Leicestershire remains capable of meeting both rail-served and non-rail-served needs

3 WAREHOUSING STOCK POSITION (2019)

- 3.1 This section aims to quantify the existing stock of large-scale logistics and distribution floor space capacity nationally, across the wider English Midlands and within Leicestershire. It describes existing logistics and distribution facilities in terms of the quantum of floor space available and by location..
- 3.2 The *Valuation Office Agency (VOA)* records the amount of floor space by function within commercial properties across England and Wales for Business Rates purposes (non-domestic Rating List). The complete Rating List database is held in-house by MDS Transmodal; we have interrogated the raw dataset and extracted data relating to floor space within commercial buildings with a designation 'warehouse' or a similar classification. For clarification, this includes:
- Floor space designated as 'warehouse' or similar within a building whose primary classification is 'Warehouse and Premises' i.e. a building purposely built to receive, store and distribute cargo (the classic distribution centre); and
 - Floor space designated as 'warehouse' or similar within a building that has some other primary classification e.g. a 'Factory and Premises' which contains floor space used to store and distribute goods manufactured at that site.
- 3.3 Only property where the warehouse floor space (as defined) is greater than 9,000 square metres in total has been included. This 'cut off' figure broadly equates to buildings around 100,000 sq ft or larger, the logistics industry's recognised definition of a large-scale distribution centre. Other ancillary floor space designations (e.g. offices) within each identified property have been excluded i.e. the total 'headline' size of a commercial property will be greater once these other floor space functions are included. Further, while the total quantum of 'warehouse' or similar floor space within an individual property is greater than 9,000 square metres, the actual floor space may be distributed over two or more different areas (zones) within the individual commercial property. For example, a 'Warehouse and Premises' may record a separate 'cold store' of 10,000 square metres plus an ambient 'warehouse' area of 5,000 square metres. The analysis has recoded this as one building with a total of 15,000 square metres of warehouse floor space. The Rating List utilised is from March 2019, albeit the data analysis presented below is taken to be representative of floor space capacity and location for the calendar year 2019 as a whole.

England and Wales

- 3.4 Based on the above, across England and Wales a total of *2,397 buildings* covering *49 million square metres* of floor space can be identified from the VOA Rating List database (as described).. A breakdown of these figures by Government Office Region are presented in Table 6.

Table 6: Table: Current Large-Scale Warehouse Capacity England and Wales, by Region (2019)

Region	Floorspace		Number		Average Unit
	000s sqm	%	Units	%	Size (sqm)
East Midlands	9,262	19%	386	16%	23,995
North West	8,373	17%	423	18%	19,795
West Midlands	7,505	15%	381	16%	19,697
Yorkshire and The Humber	6,839	14%	329	14%	20,788
East	5,142	10%	255	11%	20,164
South East	3,858	8%	197	8%	19,586
South West	2,964	6%	136	6%	21,795
London	1,845	4%	119	5%	15,501
North East	1,682	3%	90	4%	18,687
Wales	1,600	3%	81	3%	19,756
Total	49,070	100%	2,397	100%	20,471

Source: VOA (May 2019)

- 3.5 It is of note that as of Nov 2015 (according to the report 'Wider Market Developments: Implications for Leicester and Leicestershire Final Report' by MDS Transmodal / GL Hearn 2017), the East Midlands contained 18% of floorspace, the North West 19% and the West Mids 14%. The East Midlands has therefore increased its stock at a greater rate. However, in 2014 (Leicester and Leicestershire Strategic Distribution Sector Study Part A Interim Report MDS Transmodal / Savills 2014) the East Midlands had 20% of floorspace, North West 16% and West Mids 15%, more closely aligned to the 2019 position. VOA figure comparison should be viewed with caution due to the way the VOA records floor space function between each Rating List compilation and a difference in the extraction criteria adopted to extract the data from the master database at the time.
- 3.6 The equivalent commercial property data in Scotland is collated by the *Scottish Assessors Association (SAA)*. For reference, Scotland currently accommodates around 1.4 million square metres of large-scale warehouse floor space, of which around 1.1 million square metres is located in the 'Central Belt'.
- 3.7 Table 6 shows that the East Midlands region hosts just over *9.3 million square metres* of floor space across 386 commercial properties. It is the largest region in terms of total floor space (though the North West has a greater number of units). The average floor space per commercial property in the East Midlands is around 24,000 square metres, compared with the national average of 20,000 square metres per unit.

- 3.8 The East Midlands region records around 8% of the population of England and Wales, yet the data above shows that it currently accommodates 19% of total English and Welsh warehouse capacity. The mean size per unit is also significantly above the national figure. The East Midlands region has therefore attracted a quantum of warehouse floor space significantly above that which its population and wider economy would suggest; it is significantly more than is required to handle the volume of cargo distributed into the East Midlands regional economy. This confirms the analysis previously presented in the Leicester and Leicestershire SDS, namely that the region's floor space is predominantly playing a national rather than regional role in this sector (around 65-70% of the floor space having a national hinterland). The reasons for this position were presented and discussed in the SDS.
- 3.9 The main 'competitor' regions to the East Midlands are the North West, West Midlands and Yorkshire/Humber. These regions currently accommodate around 8.4, 7.5 and 6.9 million square metres respectively. However, the smaller mean unit sizes suggest the warehousing in these regions has a more regional role when compared with the East Midlands.
- 3.10 Derived from the VOA Rating List as per above, Table 7 presents the existing supply of large-scale logistics and distribution floor space at the various Strategic Rail Freight Interchanges (SRFIs) to have been developed to date and other rail-connected warehousing schemes.

Table 7: Table: Current Large Scale Warehouse Capacity at SRFIs and other Rail-connected Sites (2019)

Area	Floorspace
	000s sqm
Hams Hall	318
BIFT (Birch Coppice)	392
ProLogis Coventry	121
DIRFT	597
EDMC Castle Donnington	153
iPort Doncaster	231
Doncaster Railport	163
SIRFT Sheffield	56
Wakefield Europort	327
3MG (Widnes)	60
Trafford Park	343
Teesport	120
London Gateway	86
TOTAL	2,967
% rail-served	6%
East Midlands	750
% rail-served	11%
West Midlands	831
% rail-served	11%
Yorkshire and Humber	777
% rail-served	11%
North West	403
% rail-served	5%

Source: VOA

- 3.11 Nationally, just under 3 million square metres is currently located at a rail-served site, equating to around 6% of large-scale floor space in England and Wales. Note that the two tables above do not currently include the new large scale floor space currently being developed and brought into operation at *East Midlands Gateway* (Segro Logistics Park) at Kegworth (around 205,000 square metres across 5 units are currently being developed and brought into operation). Once that becomes operational and the site is fully built-out, the quantum of rail-served floor space and the overall percentage in the East Midlands region will increase.
- 3.12 For the East Midlands, around 0.75 million square metres is currently located on a rail-served site, equating to around 8% of the region's stock (i.e. currently slightly ahead of the national position). In

the West Midlands, the equivalent figure is just over 0.8 million square metres or 11% of that region's floor space. However, East Midlands Distribution Centre (EMDC) currently does not handle any rail services and ProLogis Coventry is only comprised of rail sidings alongside the warehouses for conventional cargo vans (not intermodal). Successful rail-served sites require a number of large occupiers served by an intermodal terminal in order to attract rail services; EMDC essentially has one such occupier (M&S) and cargo vans are generally not appropriate to most freight flows (only economic when large volumes are transported directly between two rail-served facilities, meaning they are suitable for niche flows e.g. bottled water, rather than for general fast-moving consumer goods, or FMCG, type flows which tend to move in smaller quantities but frequently).

- 3.13 The large developments surrounding Wakefield Europort and the new iPort Doncaster results in the Yorkshire/Humber region currently having around 11% of its warehouse capacity being rail served (around 777,000 sqm). In the North West region, just under 0.5 million square metres is rail-served equating to around 5% of the region's capacity. However, this includes Trafford Park, where the two intermodal terminals are not integral to and were developed separately from the warehousing; use of the public road network is required to transfer containers between them.

Leicestershire and East Midlands

- 3.14 Appendix B presents a breakdown of large-scale warehouse floor space within the East and West Midlands regions by Billing Authority (i.e. planning authority level). Daventry, Northampton, Harborough, North West Leicestershire, Corby and East Northants are the six authorities with the largest stock in the East Midlands region, each accommodating over 0.5 million square metres. The position with respect to Leicestershire county is shown in Table 8.

Table 8: Large Scale Warehouse Capacity Leicestershire by Billing Authority (2019)

Billing Authority	Floorspace 000s sqm	Number Units	Average Unit Size (sq m)
Harborough	770	32	24,049
North West Leicestershire	707	27	26,178
Hinckley & Bosworth	284	9	31,596
Blaby	193	13	14,841
City of Leicester	176	9	19,559
Charnwood	92	6	15,291
Melton	73	3	24,436
Oadby & Wigston	19	1	18,913
TOTAL	2,314	100	23,137

Source: VOA

- 3.15 Table 8 shows that Leicestershire hosts just over 2.3 million square metres of floor space across 100 commercial properties (25% of the regional total measured by floor space). The average floor space per commercial property in the County is around 23,000 square metres. Harborough and North West Leicestershire account for around 65% of the county's large scale floor space. The spreadsheet database (*Leicestershire Warehousing*) supplied with this study report provides a full inventory of warehousing in the county of Leicestershire by location, occupier and floor space.
- 3.16 Table 9 summarises the age of the stock based on authority records. This suggests that around 15% of the area's stock is pre 1990; 20% is 1990-2000; 30% is 2000-2010 and 30% is post 2010. Considering the largest volumes by authority, around 85% of Harborough stock is 1990-2010 (Magna Park build out) whereas 80% of North West Leicestershire stock is post 2000. Note that stock in Leicester and Charnwood, and as a result total stock, differs from that reported in the main VOA database extraction following refinement by the authorities undertaken later in the process after the forecasting.
- 3.17 Appendix E provides a map of the locations of units categorised by age.

Table 9: Age of Large-Scale Warehouse Capacity Leicestershire by Authority (April 2020)

	1990-00	2000-10	2010+	Pre-1990	Unknown	Grand Total
Blaby	18,679	37,717	66,900	69,631		192,928
Charnwood			20,291			20,291
City Of Leicester	14,567	39,344	12,244	11,901		78,057
Harborough	260,811	387,523	10,777	88,519	21,945	769,574
Hinckley & Bosworth	23,930	68,917	69,216	122,301		284,365
Melton					73,307	73,307
North West Leicestershire	44,262	156,697	414,735		91,117	706,811
Oadby & Wigston	18,913					18,913
Grand Total	381,162	690,199	594,163	292,353	186,369	2,144,246

Source: Local Authority Records

4 PROPERTY MARKET REVIEW

4.1 This section provides an assessment of the strategic industrial property market in Leicester and Leicestershire. This assessment has been undertaken using a variety of sources including take-up and availability data from the Estates Gazette Interactive (EGi) database and the CoStar commercial property database, alongside assessment of Valuation Office Agency (VOA) data and a review of the latest commercial property literature and stakeholder/property agent consultation.

Warehouse / Industrial Market Review

4.2 In this section, we summarise the findings of commercial market reports for the logistics market in the UK, Midlands and the different local areas undertaken by key agencies including:

- Market Insight Great Commercial Property Decisions 2019, Innes England
- Big Shed Briefing July 2019, Savills
- Big Shed Market View March 2019, Avison Young

4.3 Through 2019 the market has been of the view that Brexit has had limited impact thus far on the demand for warehouse space and more important drivers are around the structural changes in retailing, the growth of the online retail sector and how the UK manufacturing supply chain responds in the long term to leave the EU.

4.4 Take-up for the 2019 half-year reached 16.1 million sqft (1.5m sqm), 28% up on the long term average for the first half of a year across the UK. Moreover, the second quarter in isolation was outstanding with 9.6 million sqft (900,000 sqm). transacted, making it the highest level take-up since 2014 and the second-best Q2 on record.

4.5 In terms of supply, this has risen in 2019 and now stands at 34.1 million sqft (3.2 million sqm) Nationwide, reflecting a vacancy rate of 6.6%. Of the current supply on the market 56% is classified as grade A, up from 35% in Q1 2015.

4.6 Distribution investment volumes reached £4 billion during 2018 in line with the five-year average, with Tritax Big Box REIT accounting for 16% of volumes. However, this level is below the record of £6.8 billion in 2017.

East Midlands Overview

- 4.7 The East Midlands has been the strongest market across the country in 2019, seeing the largest take up. East Midlands has seen an increase in speculative development completions, which paired with large units returning to the market, has led current supply to total 5.4 million sqft (500,000 sqm) representing a rise of 64% from 2018, yet still maintains a comparatively low vacancy rate of 5.4% reflecting the strong demand across the area but also a propensity for design-build of strategic warehouses. The proportion of supply has altered dramatically, 2015 saw 19.4% of space available on the market classified as grade A yet recent speculative development has shifted this proportion 57.8%.
- 4.8 Take-up in the first half of 2019 has reached 2.5 million sqft (230,000 sqm), 33% above the long-term average take-up evidencing continued strength in the East Midlands market. Interestingly, in the first half of 2019, we have witnessed 82% of space transacted involve grade A quality units with grade B space accounting for 15%. This reveals a preference for occupiers for better quality units. According to recent transaction records, build-to-suit (or also known as design and build) transactions dominate the market activity in terms of transacted floorspace. The largest transaction is the lease of Unit 2 Mountpark Bardon Phase 2 from VF Corporation (578,620 sqft of 5,000 sqm). East Midlands Gateway and Corby concentrated half of the take-up volumes.
- 4.9 In terms of new development, there are currently eight units under construction which total 2.3 million sqft, adhering to the regional trends these are primarily located in Northamptonshire where five units are being developed (see below). The largest unit is at DIRFT in Daventry where Prologis is developing 535,000 sqft (50,000 sqm) due to reach practical completion in Q4 2019.
- 4.10 The Leicestershire market has started responding to the long-term shortage of new industrial and warehouse development to the point where agents expect to see new stock, both large and small, in the coming years. This will not only continue to support the strategic B8 market but will also provide opportunities for smaller organisations wishing to improve their image and profile locally.
- 4.11 Overall, the distribution market across Leicester and Leicestershire continued to be the largest contributor to the national take-up in 2019. This remained above the 10-year average in 2018, helped by lettings to GEODIS at Optimus Point of 277,000 sqft (26,000 sqm), and 320,000 sqft (30,000 sqm) to DPD at Hinckley Park.

- 4.12 In particular, the take-up in Leicestershire remained above the 10-year average for the sixth successive year in 2019, with 2.2 million sqft (200,000 sqm) of space acquired. The activity was dominated by larger lettings, with two-thirds of take-up being in units of 50,000 sqft (5,000 sqm) and above. Several new developments boosted supply, which was also dominated by larger units above 50,000 sqft (5,000 sqm) accounting for 81% of the stock. Prime rents have now grown by almost 5% a year since 2013.
- 4.13 The Nottingham distribution market is expected to attract interest as works on the former Imperial Tobacco Horizon Factory have started by Henry Boot to provide a new logistic hub of 470,000 sqft (44,000 sqm). In addition, Panattoni Park at J26 of M1 has been commenced with speculative construction of 715,000 sqft (66,000 sqm).
- 4.14 Supply in Nottingham remained tight in 2019, with a particular shortage of Grade A accommodation. Second-hand space accounted for 97% of the year's activity and take-up was down to 857,300 sqft (80,000 sqm), the lowest for five years. Prime industrial rents remained at £6.25 per sqft (£67.30 per sqm) in 2018, largely due to the lack of stock, while secondary rents rose to £5.00 per sqft (£53.80 per sqm), up 5.3% on the year.
- 4.15 Derbyshire's take-up was in line with the long-term trend. Secondary rents rose sharply due to a lack of stock. Supply increased in 2019 Q4 albeit half of all availability is in two buildings, namely Solex 55 and First Panattoni's Derby 370. Most transactions have been within the small to mid-size shed market, which has been thriving. Local developer Ivy Grove continue to dominate this sector, having disposed of 80% of their units at Eagle Park. The largest industrial letting was ATL's acquisition of 66,000 sqft (6,000 sqm) from the Harworth Group at Sinfin Commercial Park.
- 4.16 While total lettings were down by 13%, the take-up of units of 20,000 sqft and below increased by almost 60% across Derbyshire in 2019. Overall, take-up fell back from the previous year, primarily because of fewer larger lettings. Supply edged up by 9.2% to 890,663 sqft (83,000 sqm), driven largely by newly developed Grade A space, which more than doubled from 2017. Prime rents rose to a new record of £6.50 per sqft (£70.00 per sqm).

West Midlands Overview

- 4.17 Political and economic uncertainty continues to impact larger requirements across the country and in the West Midlands albeit demand is still strong across the market. Take-up in the first half of 2019 reached 1.5 million sqft (140,000 sqm) through eight transactions, representing a 6.3% decrease from

the first half of 2018. There has been a slight decline in larger requirements within the region. Grade A quality space continues to see the strongest demand with 67% of all space leased in the first half of 2019 being of grade A quality. Furthermore, with strong demand from developers, investors and occupiers land values in the West Midlands continue to rise which will further impact rental growth in the region.

- 4.18 The high levels of take-up and occupier demand seen in recent years have stimulated speculative development, since the beginning of 2018, 2.4 million sqft (220,000 sqm) of speculatively developed warehouse space has been added to the West Midlands. However, despite the recent rise in supply in the region, using the five-year rolling average yearly take-up there are just 1.6 years left of supply within the market.
- 4.19 Nine units are currently under construction within the West Midlands totalling 1.7 million sqft (160,000 sqm). The largest unit currently under construction is the recently announced Fradley 432 where Evans Property Group are speculatively developing 431,500 sqft (40,000 sqm) set to reach practical completion Q1 2020.

Warehousing Floorspace

- 4.20 In some cases, our analysis of industrial floorspace includes both industrial (B2) and warehouse/distribution (B8) use classes as the VOA does not distinguish between these use classes in their database. A more detailed analysis of warehousing stock is provided in the previous chapter.
- 4.21 According to the VOA the County contained 9,475,000 sqm of industrial floorspace in 2019. This includes warehouse/ distribution floorspace. The greatest proportion of space was in Leicester (26%), followed by North West Leicestershire, Harborough and Charnwood.
- 4.22 Over the period from 2000-12, total industrial floorspace in the county decreased by 467,000 sqm and from 2012-19 increased by 365,000 sqm. However, the spatial distribution of floorspace changed, with growth in NW Leicestershire and Harborough – driven by new B8 floorspace development - compared to reductions in Leicester City, Charnwood, and Hinckley and Bosworth.

Table 10: Industrial Floorspace Trends, 2002-19

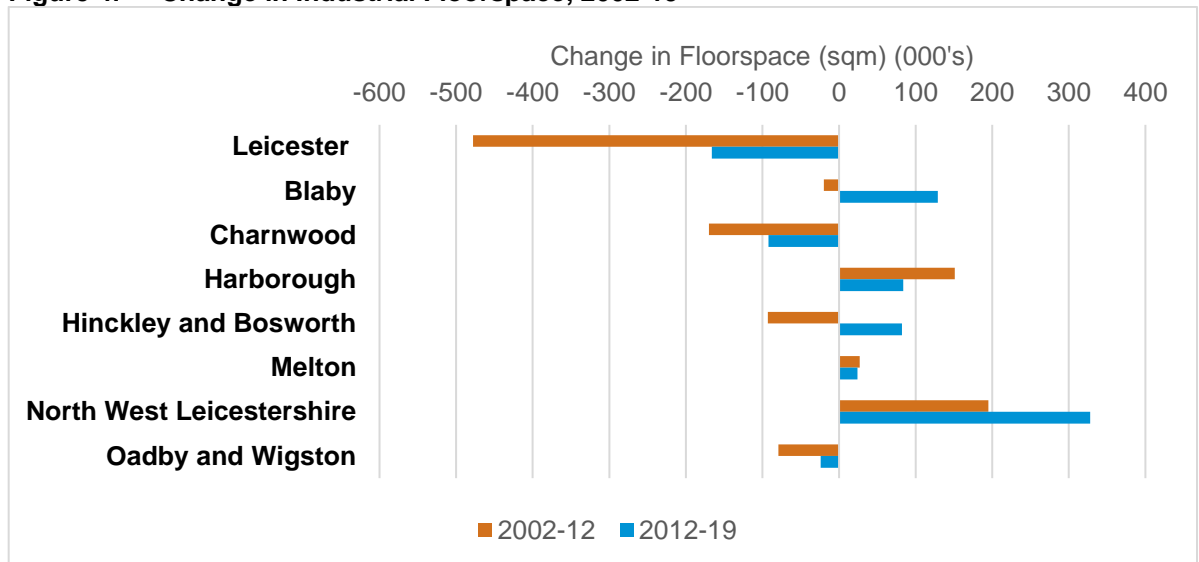
	'19 Industrial Floorspace ('000 sq.m)	% County Total	Change 02'-12'	Change 12'-19'
Leicester City	2,439	26%	-16%	-6%

Blaby	805	8%	-3%	19%
Charnwood	1,187	13%	-12%	-7%
Harborough	1,324	14%	14%	7%
Hinckley and Bosworth	1,147	12%	-8%	8%
Melton	508	5%	6%	5%
NW Leicestershire	1,726	18%	16%	23%
Oadby and Wigston	339	4%	-18%	-7%
FEMA	9,475	100%	-5%	4%

Source: VOA Business Floorspace Statistics

- 4.23 Figure 4 below profiles the change in floorspace over this period, with the greatest decreases seen in Leicester City, and the greatest increases seen in North West Leicestershire.

Figure 4: Change in Industrial Floorspace, 2002-19



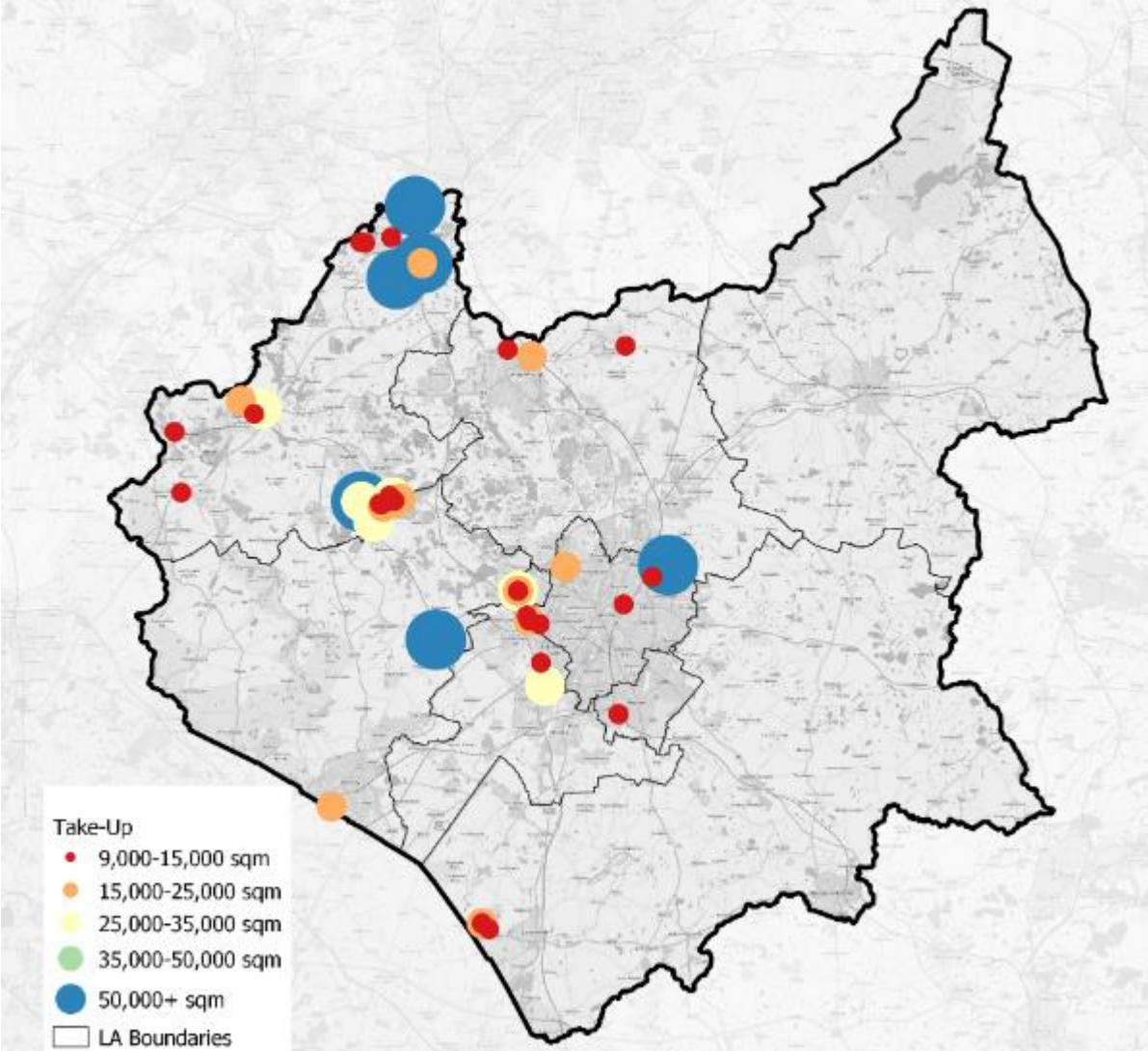
Source: VOA Business Floorspace Statistics

- 4.24 The Leicester 2020 Economic Development Needs Assessment has looked at this VOA loss data for the City in more detail. The figures above are net, so although Leicester has seen reasonable new industrial development rates, the scale of the losses completely masks this. The EDNA demonstrates that over 60% of these losses occurred within Leicester's Strategic Regeneration Area. This covers over 470ha of land and was taken out of employment designation, by the 2006 Local Plan. Transformation of the city centre and the surrounding area, providing over 6500 new dwellings, major new retail, leisure and other regeneration in 5 intervention areas, has been enabled by the change of use or redevelopment of these former industrial buildings. Leicester currently only has 8 buildings in use as a strategic warehouse (over 9000sqm in size).

Warehousing Take-up

- 4.25 Take-up is defined as the leasing and occupational sales of floorspace, as recorded on CoStar and EGI. For the purposes of this assessment, only “Strategic” units over 9,000 sqm (100,000 sqft) have been included. There were no transactions recorded in Melton. Take-up includes both new and existing floorspace.
- 4.26 Figure 5 below profiles the spatial distribution of strategic industrial transactions since 2014. For the period 2014-2019 there have been 64 recorded industrial deals relating to 1.5 million sqm of floorspace.
- 4.27 The highest concentration of industrial transactions was recorded in North West Leicestershire (27 deals) followed by Leicester (11). The largest amount of floorspace was transacted in North West Leicestershire: this totalled 778,000 sqm. This was followed by Hinckley and Bosworth (200,381 sqm) and Leicester (193,545 sqm).

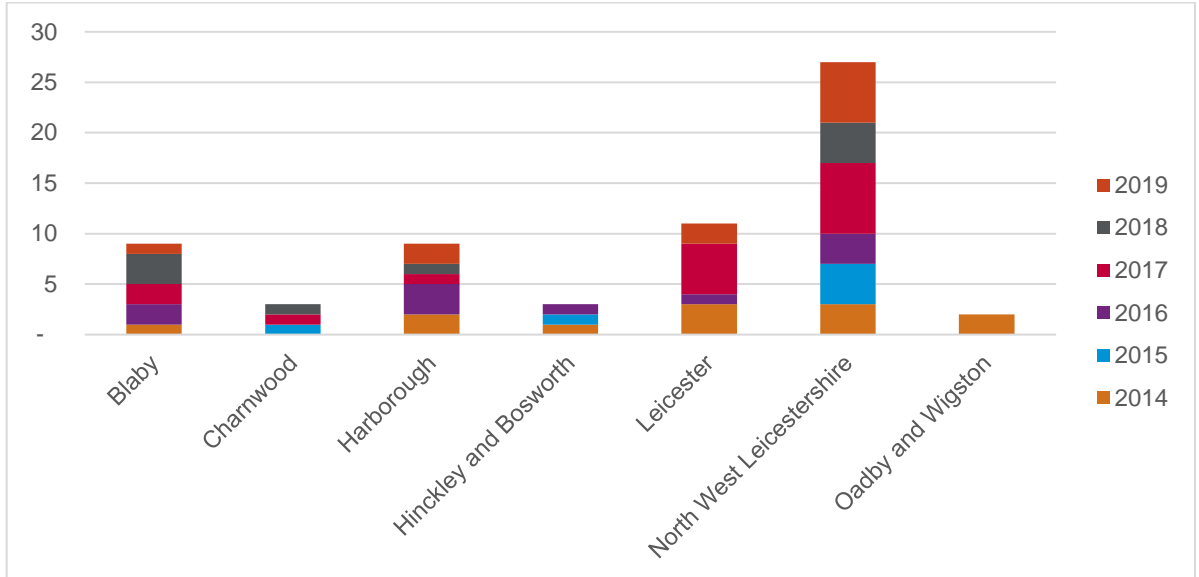
Figure 5: Strategic Industrial transactions in Leicester and Leicestershire since 2014



Source: GL Hearn Analysis of EGi and CoStar Data

- 4.28 Figure 6 below presents the number of large industrial deals by local authority and year. On average 11 deals were recorded per annum in Leicester and Leicestershire. The highest number of transactions recorded in a single year was 2017 with 16 deals. In total 50% of all the deals related to stock smaller than 15,000 sqm and a further 27% between 15,000 to 25,000 sqm.
- 4.29 The figure presents the number of deals broken down by year and local authority for the 2014 to 2019 period. The largest number of transactions were located in North West Leicestershire with 27 deals, or 42% of total deals. The smallest number of deals were found in Oadby and Wigston at 2 deals.

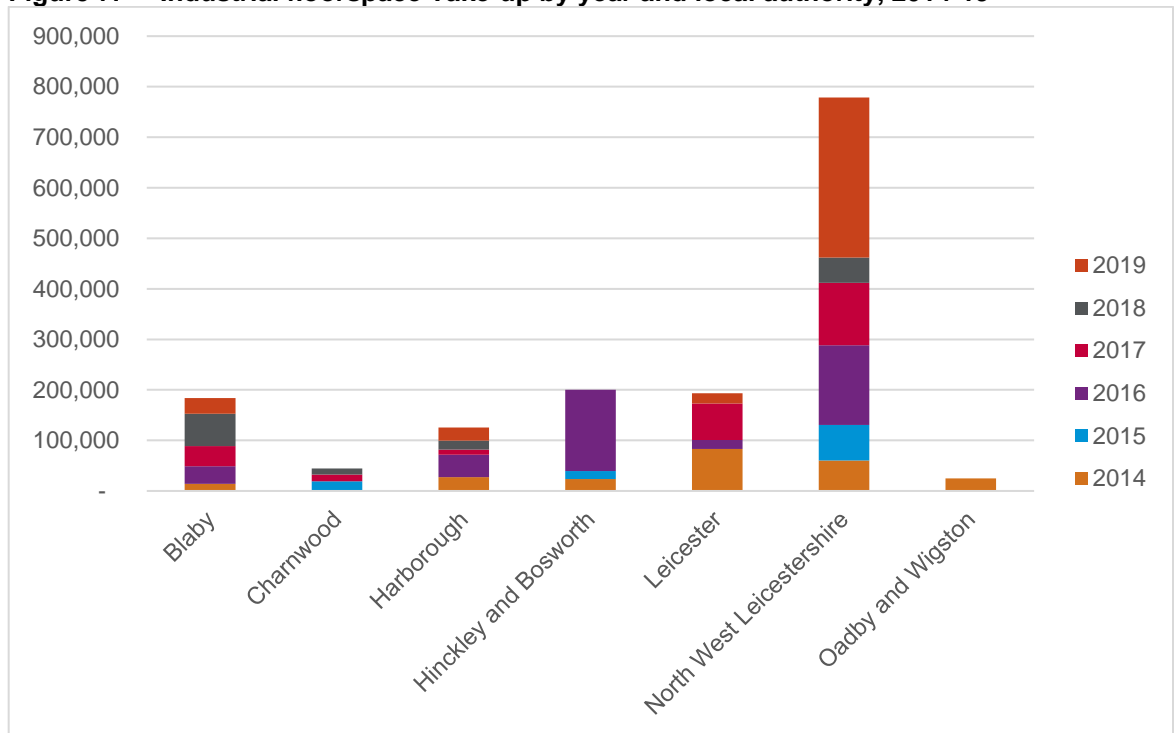
Figure 6: Industrial deals in Leicester and Leicestershire by year and local authority, 2014-
19



Source: GL Hearn Analysis of EGi and CoStar Data

4.30 Figure 7 below presents the spatial distribution of the industrial floorspace take-up. The highest volume of industrial floorspace transacted was in North West Leicestershire at 50% followed by Hinckley & Bosworth at 13%. Blaby and Leicester each transacted 12% and Harborough transacted 8% of total floorspace. The smallest amount of industrial floorspace was leased in Charnwood at only 3% and Oadby & Wigston at 2% of total floorspace in the County.

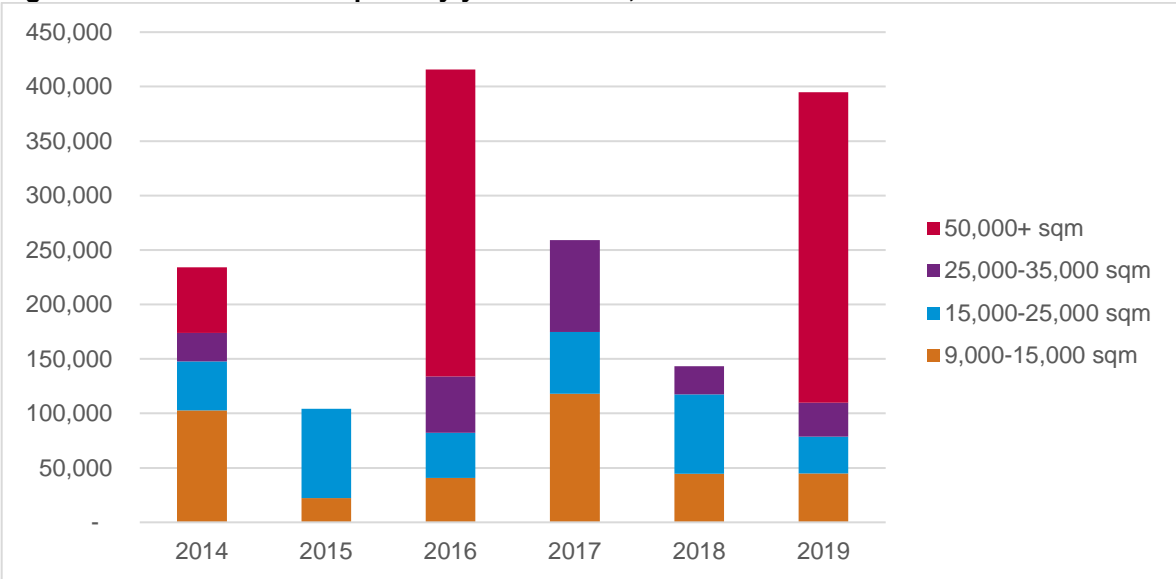
Figure 7: Industrial floorspace Take-up by year and local authority, 2014-19



Source: GL Hearn Analysis of EGi and CoStar Data

4.31 Figure 8 presents the industrial floorspace take-up by unit size band. In total 40% of floorspace transacted over the last decade related to units over 50,000 sqm in size. This was followed by 24% of floorspace transactions in units between 9,000 and 15,000 sqm and 21% in units above between 15,000 and 25,000 sqm. The highest volume of industrial take-up was in 2016 at 415,804 sqm (21%).

Figure 8: Industrial floorspace by year and size, 2014-19



Source: GL Hearn Analysis of EGi and CoStar Data

4.32 The spikes in 2016 and 2019 relate predominantly to Amazon’s following transactions above 100,000 sqm including:

- the 121,000 sqm (1.3 million sqft) warehouse in Mountpark Bardon Beveridge Lane in Coalville in 2016; and
- the 111,000 sqm (1.2 million sqft) warehouse in East Midlands Gateway in 2019.

4.33 Other large schemes across Leicester and Leicestershire, over 46,000 sqm (500,000sqft), transacted in 2019, include:

- A 59,500 sqm (640,000 sqft) warehouse known as Big Box 2 East Midlands Gateway leased to XPO Logistics;
- A 51,000 sqm (550,000 sqft) warehouse known as Big Box 3 in East Midlands Gateway leased to Shop Direct; and
- A 48,000 sqm (520,000 sqft) warehouse known as EMDC 525 leased to CWC Group, however, this is an investment transaction and has been excluded from the take up. The unit is currently available for lease and has been considered in the supply position.

4.34 As noted, all these schemes are located within North West Leicestershire.

4.35 There are two more units across the County which have been transacted recently that are above 46,000 sqm (500,000 sqft), these include:

- Neovia Logistics warehouse of 158,000 sqm (1.7 million sqft) (including mezzanine) in Peckleton Lane LE9 9JU leased in 2016 (Hinckley and Bosworth); and
- Sofidel Warehouse of 60,000 sqm (645,000 sqft) (including mezzanine) in Waterside Road in Leicester, leased in 2014.

4.36 Table 11 illustrates the total take up over time by authority, annualised to estimate future needs. This assumes that all new occupants require new floorspace, which would not be the case, and that the rate of past take up continues into the future. Thus, this is indicative only.

Table 11: Annualised and Projected Takeup by Authority

Authority	Total take up 2014-19	Av. Annual take up	2019-36 requirement	2019-41 requirement
Blaby	184,083	30,680	521,560	674,960
Charnwood	44,450	7,408	125,936	162,976
Harborough	125,783	20,964	356,388	461,208
Hinckley and Bosworth	200,381	33,397	567,749	734,734
Leicester City	193,545	32,257	548,369	709,654
North West Leicestershire	778,424	129,737	2,205,529	2,854,214
Oadby and Wigston	24,626	4,104	69,768	90,288
Total	1,551,292	258,549	4,395,299	5,688,034

Source: CoStar, EGi, GL Hearn analysis

Rental Values

4.37 As shown in Table 12, rental values in and around Leicester have grown by 4% in prime locations and by 12% in secondary locations in recent years. Currently, new warehouses typically command around £6.25 psf. CoStar quoted an average rental value of £6.18 psf in the first quarter of 2020 in the Leicestershire market.

Table 12: Golden Triangle Rental Value Change, Large Warehouses

Area	H1 2018		H1 2020		% Change 2018-20	
	Prime	Secondary	Prime	Secondary	Prime	Secondary
Birmingham East	£6.50	£4.50	£6.50	£5.50	0%	22%
Coventry	£6.50	£4.50	£6.50	£5.75	0%	28%
Derby	£5.75	£3.50	£6.00	£4.00	4%	14%
Leicester	£6.25	£4.25	£6.50	£4.75	4%	12%
Nottingham	£5.75	£4.25	£6.00	£4.25	4%	0%

Source: Industrial and Logistics Rent Maps, Colliers (March 2020)

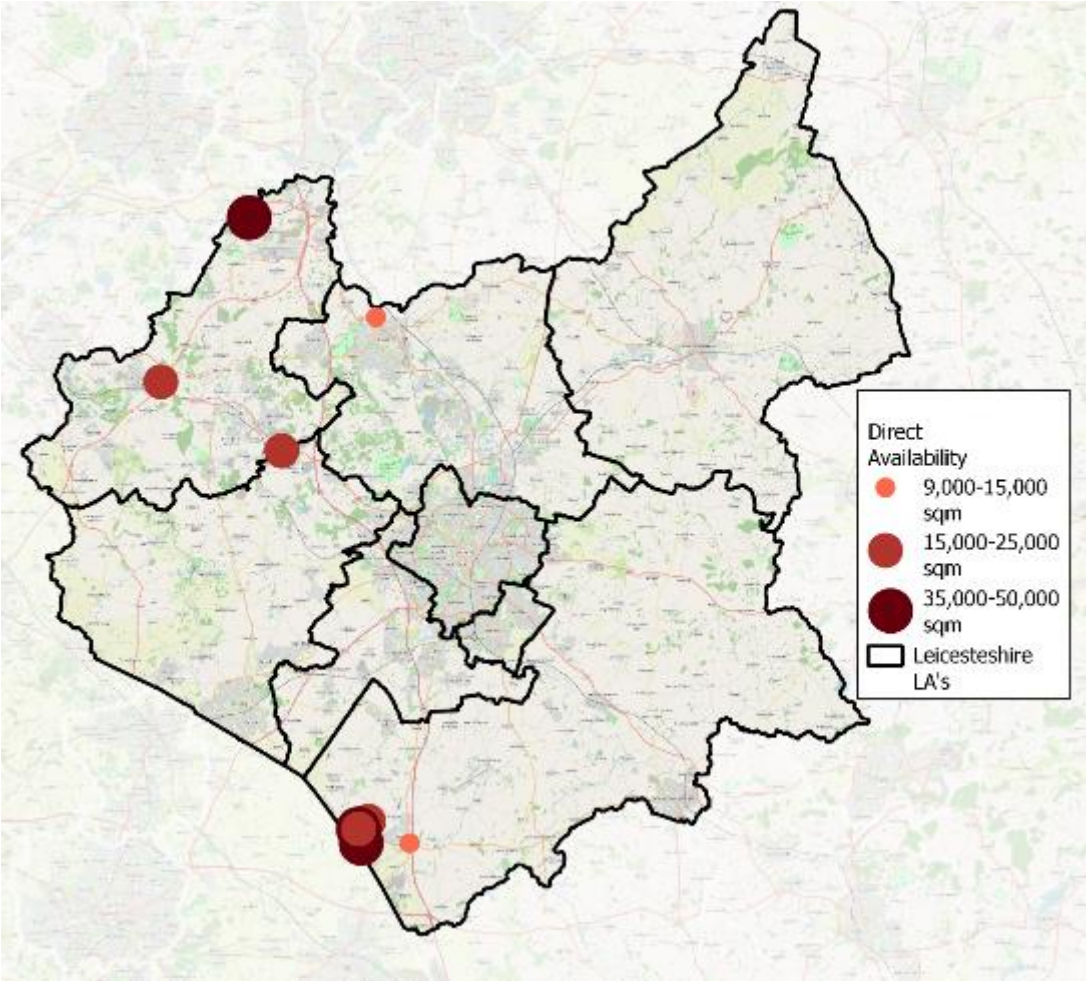
4.38 This rental growth has been driven primarily by demand from retailers and delivery specialists. The majority of property development in recent years has been pre-let, which has contributed to a lack of available supply and subsequently rising rental values.

Warehousing Availability

4.39 The pipeline supply is dealt with separately in section 6 based on local authority monitoring data.

4.40 Sites under construction or existing units advertised at April 2020 for occupational sale or lease have been mapped to show the spatial distribution across the FEMA, with a clear locational preference for the M1 and ancillary A-roads.

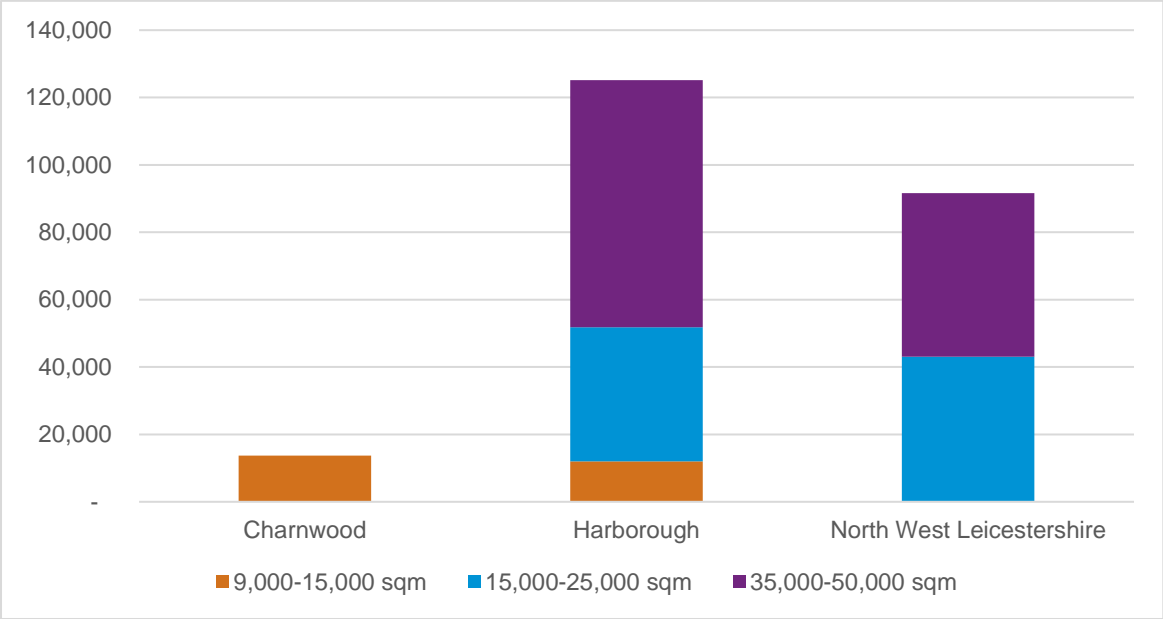
Figure 9: Industrial availability in Leicester & Leicestershire



Source: GL Hearn Analysis of EGi and CoStar Data (April 2020)

- 4.41 There is a total of 230,050 sqm through 9 units available directly across Leicester and Leicestershire April/May 2020 with 111,013 sqm relating to 5 newly built units. These include:
- Zorro Warehouse in Coalfield Way Ashby-De-La-Zouch of 22,071 sqm (237,600 sqft);
 - 225 Interlink in Beveridge Lane, Bardon of 20,967 sqm (225,690 sqft);
 - East Midlands Distribution Centre 525 (EMDC 525) of 48,626 sqm (523,400 sqft). This unit was bought by CWC Group in 2019, but this was an investment transaction, and the unit is currently available for lease;
 - Tornado 186 Warehouse of 15,843 sqm (170,500 sqft) in Magna Park built-in 2015/16; and
 - M1 Access in Lutterworth comprising of an over 11,000 sqm (120,000 sqft) warehouse with office floorspace above. The overall scheme relates to 11,986 sqm (129,000 sqft) built 2017/18.
- 4.42 There are also 4 existing and second-hand units available for leasing. These have been built between 1980 and 2006 with two of them being recently refurbished. In detail these include:
- Artform International Warehouse of 13,726 sqm (147,745 sqft) in Bishop Meadow Rd, Loughborough. This was built in 1980;
 - Hurricane Warehouse or also known as 4400 in Harrier Parkway in Magna Park. This is a 24,016 sqm (258,503 sqft) warehouse built-in 2001;
 - XDock 377 Warehouse of 35,031 sqm (377,070 sqft) Wellington Parkway in Magna Park built in 1993 but renovated in 2019; and
 - Quantum or 5320 Hawke Way in Magna Park. This is a warehouse of 38,240 sqm (411,613 sqft) built in 2006 and renovated in 2017.
- 4.43 The 9 directly available units are analysed according to their local authority and size band in Figure 10.

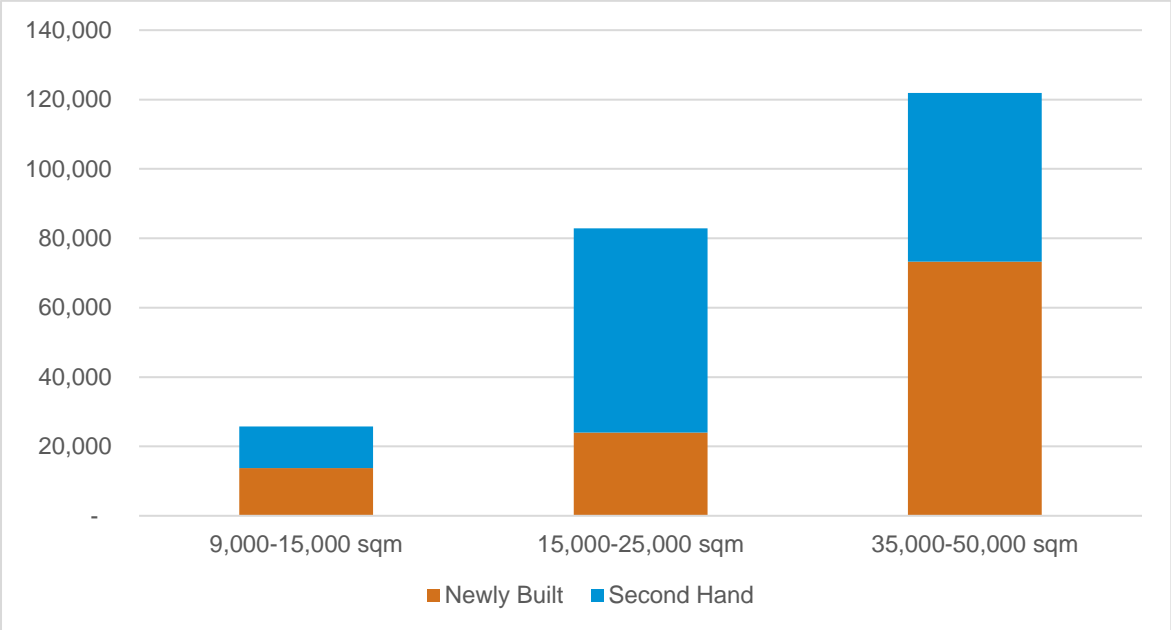
Figure 10: Direct availability across Leicester and Leicestershire by local authority



Source: EGI/CoStar/monitoring data – GL Hearn analysis

4.44 As presented below, 52% of direct availability relates to newly built stock with the remainder comprising second-hand stock. Agents noted that the “lifespan” of a warehouse is typically around 30 years before the units are functionally unfit to meet the modern standards required by premium occupiers. Secondary stock typically commands lower rents.

Figure 11: Direct Availability across Leicester and Leicestershire by size and grade



Source: EGI/CoStar/monitoring data – GL Hearn analysis

- 4.45 Years supply, a ratio which calculates current available floorspace divided past average annual take-up, is one metric which helps to demonstrate levels of vacancy in the market. A 1 year supply, for instance, would mean that the advertised space is equivalent to one year of take-up.
- 4.46 The analysis reveals that calculated against past average take-up 2014-19 there is a direct supply of 0.89 years across the County. This has been confirmed by agent consultation which discussed supply pressures across the strategic warehousing and logistics market. As strategic sites are more focused on being located in the Golden Triangle and less location-specific in terms of a local authority, it is expected that supply shortages in some local authorities can be covered by others with surpluses.

Table 13: Direct Years Supply, Leicester and Leicestershire County Local Authorities

	Take up (Average 2014-19) (sqm)	Direct Supply (sqm)	Years of direct supply
Blaby	30,680	n/a	-
Charnwood	7,408	13,726	1.85
Harborough	20,964	125,115	5.97
Hinckley & Bosworth	33,397	n/a	-
Leicester	32,258	n/a	-
North West Leicestershire	129,737	91,664	0.71
Melton	n/a	n/a	-
Oadby and Wigston	4,104	n/a	-
Leicester and Leicestershire County	258,549	230,505	0.89

Source: GLH Analysis of CoStar and EGi Data

Agent Consultation: Key Drivers and Trends

- 4.47 As part of the commercial property market assessment, GL Hearn contacted commercial property agents active in the FEMA and with knowledge of the wider Golden Triangle. In particular, they were asked about key drivers for demand and asked to rank factors such as size, location, along with proximity to other occupiers, freight and airport infrastructure. More broadly, agents were asked about gaps in supply and the future demand for the warehousing and logistics sector, taking into account factors such as Brexit, Coronavirus, e-commerce and climate change. Key findings from the consultation are summarised below.
- 4.48 Road accessibility was almost undoubtedly the most important factor for market demand. Access to the majority of the UK population within the shift of an HGV driver was cited to be critical. Motorway junctions, particularly along the M1 or at least a significant A-road, are considered high priorities when searching for space. Although strategic warehouse occupiers are comfortable being a reasonable distance from population centres, they still want to be accessible to labour pools which are essential for operations. Competition remains high in Leicestershire for labour and shortages are a key driver in automation.
- 4.49 Increasing demand for power is fast emerging trend in the warehousing occupier market driven by automation, electric vehicle charging and systems such as those for chilled goods. Units are typically undersupplied and alternatives such as photovoltaic roofs or other renewables are expected to be increasingly prevalent.

- 4.50 Airport and rail connectivity is seen as secondary to road needs at the present time, and is considered by agents to be highly occupier-specific, for example if the products require shipment via rail. Occupiers and the goods that require rail-served sites vary considerably, but can include products received from overseas at shipping ports. Occupiers moving into an estate with rail infrastructure without intending to utilise freight typically end up doing so. This can be seen in Birch Coppice in Tamworth, indicating that there are inherent cost savings for transporting these goods via rail instead of HGVs. Rail is also seen to have an element of “future proofing” as there are ever stricter requirements for the electrification of vehicles and other energy efficiency measures being anticipated across the sector.
- 4.51 Units with larger floorplates, for instance above 50,000 sqm, are almost entirely pre-let because of the risk associated with building speculatively on these units. For instance, an occupier seeking to fit out a large warehouse after construction would face costly designs multiplied across so many square metres. In addition, the larger floorplates have a smaller likely pool of occupiers, meaning that there is a high level of involvement from an early stage of the build-out.
- 4.52 Agents have also indicated that there is a trend towards higher ceilings within warehouses to accommodate mezzanine levels. This is known as a “clear height”, which allows for better storage and overall productivity through automated systems. Heights have risen in recent decades from a typical average of 10-12 metres now closer to 18-22 metres, with some very recent examples exceeding 30 metres. The heights not only allow for vehicle entry clearance but also for significant mezzanines, and upper level automation equipment. There is some industry discussion about the potential for heights, achieving greater volumes overall, to reduce total footprint requirements, however there is uncertainty on this point at the present time partly as different operators have very significant differences in their need for and ability to make use of further heights. Where significant mezzanine components are installed they are likely to contribute to total operational floorspace requirements.
- 4.53 Another trend that is currently limited but may gather pace is the increase in large ancillary office components within large warehouses. As warehouses footprints increase there is a natural tendency for larger office footprints as they tend to be proportionate to the warehouse i.e. 5-10%. With declining high street retailing, there is logic in bringing together back office online functions in the warehouse, particularly with lower office costs compared to office park locations. Ancillary office components of 5% in large warehouses of 46,500 sqm (500,000 sqft) would employ over 200 persons on typical office densities. Arcadia Group’s 37,000 sqm (400,000 sqft) facility at DIRFT has a 10% office component.

- 4.54 In the future, e-commerce is expected to grow. Agents were consulted in March and early April of 2020, and were already aware that coronavirus would be disruptive to deals transacted. They anticipated that the entirety of 2020 may have little activity for the sector, but moving to a medium to long-term increase in demand as consumers seek more goods online which will create a greater requirement above older warehouse stock.

5 EXISTING SRFI RAIL FREIGHT VOLUMES

5.1 This chapter underscored the level of goods that are moved via rail that would otherwise be serviced by road.

5.2 Table 14 shows the volume of intermodal rail traffic handled at the three Midlands SRFIs and the relatively new Doncaster iPort SRFI in 2019. This is derived from the record of planned services in the Working Timetable which operated during 2019 multiplied by estimated average cargo tonnages per intermodal train.

Table 14: Rail Freight Tonnes Lifted 2019

Terminal	Estimated tonnes-lifted (millions tonnes)		
	Origin	Destination	Total
DIRFT	1.1	1.1	2.2
BIFT (Birch Coppice)	0.4	0.6	1.0
Hams Hall	0.8	0.8	1.6
Doncaster iPort	0.2	0.3	0.5

Source: Estimated based on recorded train movements (WTT and Network Rail) and average tonnes/train

5.3 To put the above data into context, the combined traffic of 5.3 million tonnes handled between the four terminals would equate to around 350,000 HGV movements (average loading of 15 tonnes per HGV trip) or 105 million HGV-km assuming an average length of haul of 300km.

5.4 Data is not publicly available recording the proportion of this rail traffic which directly originates from or is destined for the warehousing on site or in the immediate hinterland (and therefore what passes via the terminal but then moves by road to/from further afield). Previous modelling work undertaken by MDST suggests that rail can realistically achieve a market share (on a per tonne-lifted basis) of around 25% at SRFIs. As noted in the forecasts of future need (Section 8, para 8.21), we would expect that each square metre of floor space at a NDC to handle around 6.5 tonnes of cargo per annum. On that basis, the floor space at the 4 SRFIs are currently estimated to receive and despatch around 8.5 million tonnes each year. Therefore, out of the inbound rail traffic of 2.8 million tonnes in 2019, around 2.1 million tonnes is likely to be destined for the on-site warehousing at each site (with the balance being for off-site distributors).

5.5 Table 15 shows the typical range of origins and destinations served from the above four SRFI terminals over the course of a week.

Table 15: Typical Intermodal Services – Origins and Destination

Terminal	Services to/from
DIRFT	Southampton
	Mossend
	Wentloog
	Tilbury
	Dagenham
	Grangemouth
	Teesport
	Mainland Europe
BIFT (Birch Coppice)	Felixstowe
	Southampton
Hams Hall	Felixstowe
	Southampton
	Seaforth (Liverpool Port)
	London Gateway
iPort Doncaster	Felixstowe
	Southampton
	Teesport
	London Gateway

Source: WTT

5.6 Overall, the data above demonstrates that modern intermodal terminals developed integral to large-scale warehousing (SRFIs) will generate significant volumes of rail freight traffic serving a range of destinations. This is traffic that would otherwise move by road haulage. Interesting to note that iPort Doncaster, which only opened in February 2018, handled 0.5 million tonnes by rail in 2019 and now serves four destinations. Teesport is only 140km from iPort yet it is able to sustain a twice daily intermodal service. SRFIs established in the late 1990s/early 2000s face the newly privatised rail market. Today, the market is more mature and faster growing, with shippers keen to invest in new rail services to the right terminals (which are being proposed to satisfy market demand and make financial returns rather than for planning gain). iPort and East Midlands Gateway have seen new rail services established fairly quickly. In the case of East Midlands Gateway, the terminal operator (Maritime) has made a deliberate decision to switch existing road-based traffic to rail where feasible (base load of established volume), hence the site has now reached four daily trains within 12 months of opening.

6 WAREHOUSE LAND SUPPLY AND SUPPLY TRAJECTORY, LEICESTERSHIRE AND ‘GOLDEN TRIANGLE’

6.1 The constituent Leicestershire authorities and those comprising the wider ‘Golden Triangle’ as defined in Figure 1 have provided their current and future supply position regarding strategic warehouses of 9,000 sqm and above. Data for the Leicestershire authorities reflects the latest available at the time being the 2019/20 monitoring period, whereas the wider study area dates to 2018/19 due to data availability and collection timescales.

6.2 The below tables on supply include allocations, schemes permitted, pending permission at allocated sites or under construction at the last monitoring period, 31st March 2020 (with some limited updates to late spring / summer 2020). A more detailed breakdown of schemes is listed in Appendix C.

6.3 For the Leicester and Leicestershire authorities, Table 16 reports the 2019/20 monitoring period. A more detailed breakdown is provided in Appendix C. Information was primarily supplied in sqm and should be taken as accurate, whereas where not supplied, plot ratio assumptions have been included at a ratio of 0.4. Note that this supply differs from that used in demand supply balance for the traffic growth and replacement demand modelling, considered later in Section 8 of this report, due to different assumptions on market level availability, notably excluding pre-let units.

Table 16: Leicestershire Warehouse Land Supply 2019/20 (April 2020) (floorspace, sqm)

Local Authority	Location	Size (000's sqm)*	Plot (ha)**
Blaby	Enderby	99	25
Charnwood	Rothley	11	3
Harborough	Magna Park, Lutterworth	599	177
Hinckley and Bosworth	Burbage, Bardon Hill	227	57
Leicester	Leicester Distribution Park	9	2
North West Leicestershire	Kegworth, Bardon, Ashby De La Zouch, East Midlands Gateway, EMDC, Appleby Magna, Sawley Crossroads	836	148
Total		1,781	412

Source: authorities

* Excludes Hinckley National Rail Freight Interchange (Blaby District)

**Estimated where not supplied

6.4 An estimation of the trajectory of the supply components is set out below (with further detail in Appendix C). Whilst there is a spread across the short and medium term, the existing supply is focused on the next 10 years and more limited beyond.

**Table 17: Leicestershire Warehouse Land Supply Trajectory 2019/20 (April 2020)
(floorspace, sqm)**

Local Authority	Scheme	Size (000's sqm)	Delivery Period (years, estimate)
Blaby	Land to the West of St Johns, Enderby (Units 1,2,3,5)	99	2-5
Charnwood	Rothley Lodge	11	0-2
Harborough	Magna Park South, Lutterworth	279	0-10
Harborough	Magna Park North, Lutterworth	320	0-10 (+)
Hinckley and Bosworth	Nailstone Colliery	93	0-2
	Land East of Hinckley Island Hotel Watling Street Unit A/C	71	0-2
	Unit 1 Mountpark Phase II	62	0-2
Leicester	Leicester Distribution Park	9	0-2
North West Leicestershire	Kegworth, Citrus Grove	20	0-2
	Ashby-De-La-Zouch, Lounge Coal Disposal	68	0-5
	East Midlands Gateway	236	2-5
	A42 Appleby Magna	350	0-2
	East Midlands Distribution Centre Plots	53	0-5
	Sawley Crossroads	60	0-2
	Ellistown, Mountpark Phase II	50	0-2
Total		1,781	

Source: GL Hearn / Authorities

6.5 Across the wider Golden Triangle supply comprises a mix of allocations and schemes permitted / awaiting decision, including those under construction, with further details provided in Appendix D. Information was largely supplied in hectares and has been converted to sqm using a 0.4 plot ratio. Engagement with partner authorities has enabled an estimate of the supply trajectory which suggests that 40% is expected to be delivered in first 5 years and 60% in the following 5 years (or potentially beyond).

The above data suggests around 1.8 million sqm of future supply across Leicestershire County, excluding Hinckley National Rail Freight Interchange which is not consented. This is equivalent to around 6.9 years of take up based on the past annual average (in addition to around 1 year of currently available stock). The largest contributor of supply is Magna Park in Harborough.

Table 18: Wider Golden Triangle Warehouse Land Supply 2018/19

Local Authority	Submitted / Permitted (000's sqm)	Allocated (000's sqm)*	Total	Hectares**	Delivery Period (years, estimate)
Corby	242	452	694	418	5-10
Coventry	32	324	356	341	0-5
Daventry	687		687	345	5-10
Erewash			n/a	n/a	n/a
Kettering	383		383	241	0-5
Lichfield	297	93	390	118	0-5
North Warwickshire	80		80	10	0-5
South Northamptonshire***	728		728	417	0-10
Northampton	145		145	78	0-5
Nuneaton And Bedworth	35	352	392	98	5-10
Rugby	55	204	259	67	5-10
Solihull	111		111	27	0-5
South Derbyshire	267		267	67	0-5
Tamworth			n/a	n/a	n/a
Total	3,519	1,113	4,632	2,198	

Source: Authorities

* Derived from Ha at 0.4 plot ratio if not given

** Derived from sqm at 0.4 plot ratio if not given

*** A number of emerging allocations at South Northants are of undefined size (AL1-5). South Northants includes Northampton Gateway 560,000 sqm

6.6 The wider Golden Triangle reports around 4.6 million sqm of supply with the largest schemes as DIRFT III in Daventry followed by Northampton Gateway Rail Freight Interchange in South Northamptonshire.

7 ESTIMATES FOR FUTURE STRATEGIC WAREHOUSING NEED – LABOUR DEMAND AND COMPLETIONS TRENDS

7.1 Sections 7-9 review methodologies and outcomes for producing long term strategic warehousing needs which are summarised with recommendations in section 10.

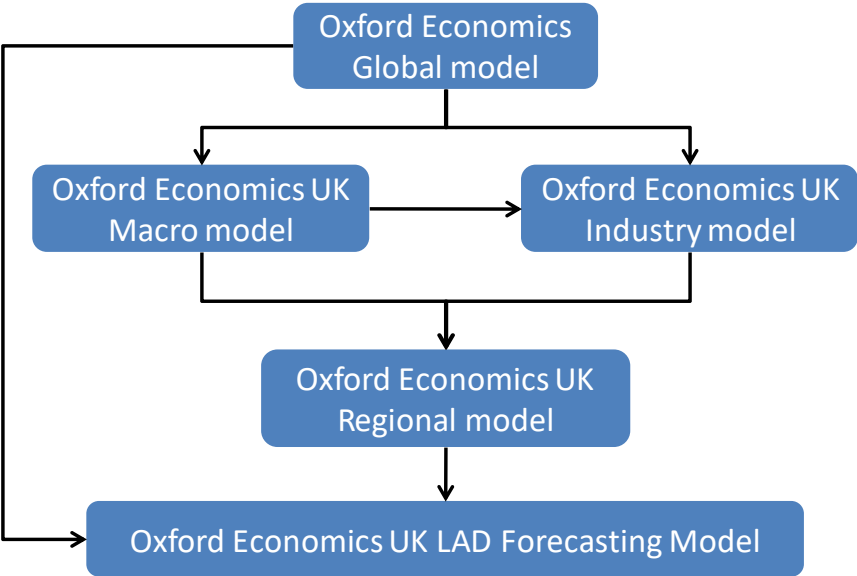
7.2 This section considers two models to forecasting future floorspace needs for warehousing, econometric forecasts for labour demand and past completions trends.

Labour Demand Model

7.3 Oxford Economics (OE) was commissioned by GL Hearn to provide detailed 2 digit baseline employment forecasts for Leicester and Leicestershire constituent local authorities in Spring 2020. The forecasts do take some account of the COVID-19 related effects which is causing contraction in economic output and uncertainty in outlook. A two-digit sector forecast was provided, the most detailed available.

7.4 The baseline model is the lowest level of the OE suite of forecasting models. Such a modelling framework ensures that global and national factors (such as developments in the Eurozone and UK Government fiscal policy) have an appropriate impact on the forecasts at local authority level. This framework ensures that the forecasts are much more than just an extrapolation of historical trends. Rather, the trends in the OE global, national and sectoral forecasts have an impact on the local area forecasts alongside the sectoral structure and past sector performance locally.

Figure 12: Hierarchical structure of Oxford Economics' suite of models



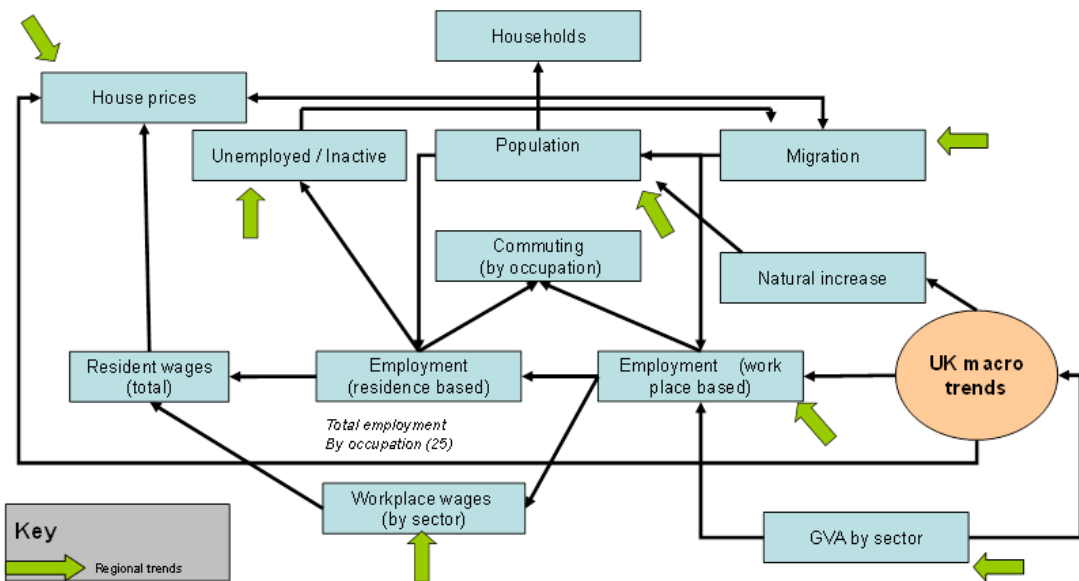
Source: Oxford Economics, 2020

7.5 The baseline forecasts for the FEMA and its constituent authorities are essentially shaped by three factors:

- International, national and regional outlooks - all the local area forecasts produced by OE are fully consistent with broader regional, national and international models and forecasts. This ensures global events that impact on the performance of UK local economies, such as the strength of global trade are fully captured in the forecasts for a local area. So too are national level growth and policies, whether that be the impact of monetary policy on consumer spending or government spending on locally provided public services;
- Historical trends in an area, which implicitly factor in supply side factors affecting demand, combined with the OE and GLH knowledge of local areas and the patterns of local economic development. This ensures for example, that we recognise and factor in to the forecasts any evidence of particularly high/low levels of competitiveness that local economies have in particular activities. It also means national policy programmes that have a particular local impact and that are very likely to happen; and
- Fundamental economic relationships which interlink the various elements of the outlook. OE's models ensure full consistency between variables in a local area. For example, employment, commuting, migration and population are all affected by one another.

7.6 The forecasts are produced within a fully integrated system, which makes assumptions about migration, commuting and activity rates when producing employment and population forecasts. The main internal relationships between variables are summarised in Figure 13.

Figure 13: Main Relationships



Source: Oxford Economics, 2020

7.7 The starting point in producing employment forecasts for a local authority is the determination of workplace-based employees in employment in each broad sector. There are two key sources for this – ONS Workforce Jobs (WFJ) and the Business Register and Employment Survey (BRES). The WFJ series is reported on a quarterly basis, providing estimates of employee jobs by sector (based on the 2007 Standard Industrial Classification – SIC 2007) for the UK and its constituent government office regions. The BRES Survey is an annual survey of businesses which is used to estimate the employment levels by different sectors.

7.8 Within the OE model migration is expected to grow or decline in parallel with the employment total. If the employment total within an area is falling too fast, migration also falls as the model assumes that people would not be attracted into this area to live, given that the employment prospects are weak. This ensures that the relationship between the labour market outlook and the population outputs are inter-linked.

Disaggregating Growth

7.9 The Oxford Economic forecasts are based on a global view of growth which is translated to the UK, then the East Midlands region and then each local authority. Within the hierarchy the growth in the lower level in the hierarchy must add up to that of the level above within the baseline forecast.

7.10 How the national level of growth is translated to a regional and local authority level differs from sector to sector. Some of the sectors are driven predominantly by population estimates, others by total employment in the area and the remainder by the sector's performance relative to the regional performance (largely exporting sectors). The methods of sectoral projection are as follows, each of which are forecast based upon recent trends:

- Agriculture - share of the regional employment
- Mining and quarrying - share of the regional employment
- Manufacturing - share of the regional employment
- Electricity, gas, and steam - share of the regional employment
- Water supply; sewerage, waste management - share of the regional employment
- Construction - location quotient (LQ) based upon total employment
- Wholesale and retail trade - LQ based upon consumer spending
- Transportation and storage - LQ based upon consumer spending
- Accommodation and food service activities - LQ based upon consumer spending
- Information and communication - share of the regional employment
- Financial and insurance activities - share of the regional employment
- Real estate activities - LQ based upon total employment
- Professional, scientific and technical activities - LQ based upon total employment
- Administrative and support service activities - LQ based upon total employment
- Public administration and defence - LQ based upon sectoral employment per population
- Education - LQ based upon sectoral employment per population
- Human-health and social-work activities- LQ based upon sectoral employment per population
- Arts, entertainment and recreation - LQ based upon consumer spending
- Other service activities LQ based upon consumer spending

7.11 Because of the way national forecasts are disaggregated the baseline growth in any given local authority largely reflects the relative strength of the sectors expected to grow nationally. In practice this means that local authorities with a particular strength in their professional, scientific and technical sector and/or the administrative and support sectors (as the drivers of growth nationally) will see notable growth. Oxford Economics see the UK as having a comparative advantage in the professional, scientific and technical sector and given the nature of the sector it is difficult to achieve productivity gains, hence it is expected to continue to expand over the forecast period.

Baseline Forecasts

- 7.12 In the baseline scenario the economy is expected to grow by 1.4% per annum (GVA growth pa) to 2041. This is a decrease when compared to the growth rate from 2000-2018 which was 1.7% per annum.
- 7.13 The forecasts set out a growth of 26,920 jobs to 2031 and 35,323 jobs to 2041 for Leicester and Leicestershire. In order to understand the floorspace needs this must first be translated into full-time equivalent (FTE) jobs. This has been undertaken through interrogation of the detailed split between full and part-time work using BRES data at 2-digit SIC level. This results in a total of 21,000 FTE jobs to 2031 and 30,100 FTE jobs to 2041.
- 7.14 GLH has considered the proportion of employment in each of these sectors which is likely to take place in warehousing and industrial (B8) uses. We have calibrated our standard model which relates sectors and use classes for the Leicester and Leicestershire economy (and for each local authority) through interrogation of the composition of employment in key sectors⁹. The methodology has remained consistent from the 2017 HEDNA and the application of B8 employment on a two-digit level. This is used to derive the following forecasts of net growth in FTE employment by use class. Of note, B8 job requirement increases and decreases will be derived from all sectors and not just warehousing related.
- 7.15 The resultant FTE jobs growth by use class is shown below. For B8 use class employment growth, this corresponds to an increase of 1,044 FTE jobs to 2031 and an overall decrease of 635 FTE jobs by 2041.

Table 19: Full-Time Equivalent Jobs by Use Class ('000s)

	B1a/b*		B1c/B2*		B8		Non-B		Total	
	2020-31	2020-41	2020-31	2020-41	2020-31	2020-41	2020-31	2020-41	2020-31	2020-41
Leicester	3.9	6.7	-3.1	-5.7	0.2	-0.4	6.6	10.7	7.6	11.3
Blaby	2.1	3.8	-0.7	-1.2	0.0	-0.1	1.0	1.1	2.6	3.5
Charnwood	1.9	3.1	-1.2	-2.3	0.0	-0.3	2.8	3.8	3.5	4.4
Harborough	1.1	1.8	-0.5	-0.9	0.3	0.2	1.2	1.5	2.1	2.5
H&B	0.8	1.2	-1.1	-2.1	-0.1	-0.4	0.8	0.8	0.5	-0.4
Melton	0.2	0.2	-0.6	-1.2	-0.2	-0.5	0.2	0.1	-0.4	-1.4
NW Leics	3.4	6.4	-1.3	-2.4	0.8	0.9	2.3	3.5	5.2	8.4

⁹ This analysis is undertaken at 2-digit SIC level

O&W	0.2	0.4	-0.4	-0.8	0.0	-0.1	0.6	0.8	0.4	0.2
L&L	13.8	23.5	-9.1	-16.7	1.0	-0.6	15.6	22.2	21.4	28.5

Source: GLH Analysis of Oxford Economics Data

* data collated prior to Government change of use classes

- 7.16 To these figures we have applied standard employment densities taking account of the HCA Employment Densities Guide: 3rd Edition (2015). We have converted figures to provide employment densities for gross external floor areas. Consistent with the 2017 HEDNA, a density figure of 77 sqm per FTE employee is used for B8 floorspace. Whilst this figure is likely to be much lower than the density in strategic warehouses, it also reflects the smaller warehouse floorspace requirements in the authorities.

Table 20: B8 Employment Floorspace Need (sqm)

	2020-26	2026-31	2031-36	2036-41	2020-36	2020-41
Leicester	23,485	-10,115	-14,548	-32,929	-1,178	-34,107
Blaby	5,797	-2,624	-3,009	-6,517	164	-6,353
Charnwood	4,602	-6,241	-5,731	-12,115	-7,370	-19,485
Harborough	21,807	1,796	-3,000	-8,573	20,602	12,029
H&B	3,863	-8,018	-7,305	-16,024	-11,459	-27,484
Melton	-5,689	-9,178	-6,707	-14,333	-21,574	-35,907
NW Leics	49,373	13,698	2,289	6,121	65,361	71,482
O&W	247	-2,429	-2,212	-4,658	-4,394	-9,052
L&L	103,485	-23,111	-40,222	-89,029	40,151	-48,877

Source: GLH Analysis of Oxford Economics Data

- 7.17 The majority of authorities show an initial need, bar Melton. By 2031 floorspace is only growing to any real degree in North West Leicestershire and this has all but flattened by 2031. Only North West Leicestershire and Harborough require limited additional floorspace 2020 to 2041.
- 7.18 These are net changes and do not take account of frictional vacancy or replacement demand, such as from existing companies requiring upgraded floorspace.
- 7.19 To calculate the land requirements to support these net changes, we have applied a plot ratio of 40% for B8 floorspace. This generates the following requirement for net additional land to support jobs growth:

Table 21: Forecast B8 Employment Land Need (Ha)

	2020-26	2026-31	2031-36	2036-41	2020-36	2020-41
Leicester	5.9	-2.5	-3.6	-8.2	-0.3	-8.5
Blaby	1.4	-0.7	-0.8	-1.6	0.0	-1.6

Charnwood	1.2	-1.6	-1.4	-3.0	-1.8	-4.9
Harborough	5.5	0.4	-0.8	-2.1	5.2	3.0
H&B	1.0	-2.0	-1.8	-4.0	-2.9	-6.9
Melton	-1.4	-2.3	-1.7	-3.6	-5.4	-9.0
NW Leics	12.3	3.4	0.6	1.5	16.3	17.9
O&W	0.1	-0.6	-0.6	-1.2	-1.1	-2.3
L&L	25.9	-5.8	-10.1	-22.3	10.0	-12.2

Source: GLH Analysis of Oxford Economics Data

- 7.20 There is then an overall B8 need for an additional 10 hectares to 2031 and a surplus of need of 12.2 hectares to 2041. Only Harborough and North West Leicestershire show overall growth and these needs are dramatically less than in recent years.

Sensitivity Analysis (1)

- 7.21 B8 floorspace need using the labour demand model shows much lower future forecast needs compared to recent trends observed. Analysis of employment sectors has identified that this is caused by employment contraction in a range of industries outside of warehousing such as manufacturing and repair of motor vehicles.
- 7.22 GL Hearn considers that three 2-digit employment sectors are particularly related to the strategic warehouse and distribution market, being: Wholesale trade, Warehousing & support activities for transportation, along with Postal and courier services. As a result these sub-sectors alone have been isolated to test floorspace needs. The labour demand model has been re-run just using these sectors with the same full-time equivalents as before.
- 7.23 The resultant FTE jobs growth by 5 year period is shown below. This corresponds to an increase in 1,745 FTE strategic B8 jobs to 2036 and 1,835 jobs by 2041. North West Leicestershire is a key driver of jobs. Overall this is a notable departure from overall B8 need which forecasts a decline in the need for FTE jobs as a result of other less strategic sectors declining.

Table 22: Full-Time Equivalent Strategic B8 Jobs Change

	2020-26	2026-31	2031-36	2036-41	2020-36	2020-41
Leicester	176	40	-18	-31	198	167
Blaby	77	16	2	3	95	98
Charnwood	97	21	-3	-8	115	107
Harborough	263	55	-4	-30	314	284
H&B	128	17	-11	-29	135	106
Melton	19	-5	-10	-23	4	-19

NW Leics	550	223	89	194	861	1,056
O&W	22	4	-4	-7	22	14
L&L	1,331	372	42	68	1,745	1,813

Source: GLH Analysis of Oxford Economics Data

- 7.24 A density assumption of 95 sqm per FTE employee was used to arrive at estimated floorspace need in line with the most recent HCA Guidance (2015).

Table 23: Strategic B8 Employment Floorspace Need (sqm)

	2020-26	2026-31	2031-36	2036-41	2020-36	2020-41
Leicester	16,732	3,826	-1,737	-2,978	17,831	15,009
Blaby	7,283	1,548	212	276	8,568	8,830
Charnwood	9,178	2,018	-291	-744	10,331	9,627
Harborough	24,970	5,217	-335	-2,883	28,280	25,549
H&B	12,198	1,656	-1,013	-2,732	12,165	9,577
Melton	1,845	-467	-997	-2,180	361	-1,704
NW Leics	52,214	21,143	8,471	18,450	77,522	95,001
O&W	2,065	352	-355	-709	1,954	1,282
L&L	126,485	35,294	3,956	6,500	157,013	163,171

Source: GLH Analysis of Oxford Economics Data

- 7.25 In keeping with the same assumptions, a plot ratio of 40% was assumed.

Table 24: Sensitivity 1: Forecast B8 Employment Land Need (Ha)

	2020-26	2026-31	2031-36	2036-41	2020-36	2020-41
Leicester	4.2	1.0	-0.4	-0.7	4.5	3.8
Blaby	1.8	0.4	0.1	0.1	2.1	2.2
Charnwood	2.3	0.5	-0.1	-0.2	2.6	2.4
Harborough	6.2	1.3	-0.1	-0.7	7.1	6.4
H&B	3.0	0.4	-0.3	-0.7	3.0	2.4
Melton	0.5	-0.1	-0.2	-0.5	0.1	-0.4
NW Leics	13.1	5.3	2.1	4.6	19.4	23.8
O&W	0.5	0.1	-0.1	-0.2	0.5	0.3
L&L	31.6	8.8	1.0	1.6	39.3	40.8

Source: GLH Analysis of Oxford Economics Data

- 7.26 As a result, there is a total strategic B8 land need of 40.8 hectares across the Leicester and Leicestershire local authorities to 2041 (compared to -12.2 for all sectors) according to the baseline projections. Need is particularly driven by North West Leicestershire.

Sensitivity Analysis (2)

- 7.27 The baseline forecasts are derived from a model which draws down from national and regional forecast growth whilst allowing for the influence of local sectors. In some instances this can underplay local factors that influence growth at local authority level.
- 7.28 GL Hearn has reviewed the past rates of growth in the strategic warehousing driving sectors and compared that to the future projections.

Table 25: Average Annual Growth Rates, Warehousing Sectors

	1991-17	2001-17	2011-17	2020-36	2020-41
Leicester	-1.6%	-0.7%	-2.5%	0.2%	0.2%
Blaby	1.3%	-0.3%	-4.5%	0.3%	0.2%
Charnwood	1.0%	1.6%	0.8%	0.3%	0.2%
Harborough	6.7%	4.8%	-0.9%	0.3%	0.2%
H&B	3.6%	3.9%	4.1%	0.2%	0.1%
Melton	0.3%	1.3%	-2.6%	0.0%	-0.1%
NW Leics	4.5%	2.9%	0.1%	0.7%	0.6%
O&W	1.6%	2.4%	6.4%	0.2%	0.1%

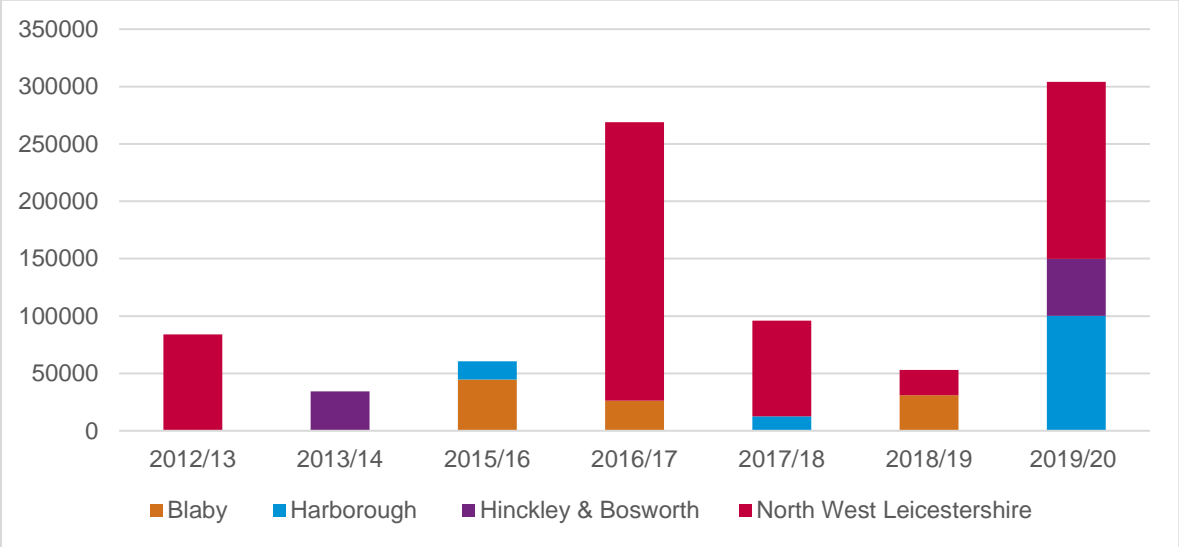
Source: GLH Analysis of Oxford Economics Data

- 7.29 The analysis shows a strong range in past employment change but a much greater conformity going forwards. In particular the 2001-17 cycle shows high employment growth in warehousing sectors albeit slowing from 2011 and broadly plateauing from 2020. Trends at a regional level are considered to have a high degree of influence over local authority level forecasts for warehousing employment.

Completions Trend Model

- 7.30 The constituent authorities provided completions trend data from 2012/13 which has been filtered to schemes of over 9,000 sqm. Only Blaby, Harborough, Hinckley and Bosworth and North West Leicestershire report results as per Figure 14. Note that these are gross completions.

Figure 14: Strategic Warehousing Completions (sqm)*



Source: Authority Monitoring Data
 *No completions recorded in 2014/15

7.31 The completions data has been annualised and extrapolated to 2036 and 2041 in terms of sqm and hectares in Table 26. This provides an indication of future need should development trends for the reported period be reproduced going forwards. 2012 onwards is considered a useful period given it aligns with the post-recession and an increasing rise in e-commerce which in part has been driving warehousing demand. A total of 1.9 million sqm or 409 hectares is forecast to 2041. What is notable is that Harborough had relatively few completions during this period, given Magna Park was largely complete through 1990-2006, however this will change going forwards with the permitted expansion of Magna Park. Conversely North West Leicestershire’s completions have been higher in the later period as indicated in Table 27.

Table 26: Forecast Completions to 2041

	Total 2012/13-19/20		Annual av. 2012/13-19/20		Forecast 2019/20-35/36		Forecast 2019/20-40/41	
	SQM	Ha	SQM	Ha	SQM	Ha	SQM	Ha
Blaby	102,050	27	14,579	4	233,257	62	306,150	81
N.W Leicestershire	586,305	116	83,758	17	1,340,127	264	1,758,916	347
Hinckley & Bosworth	83,770	28	11,967	4	191,474	65	251,310	85
Harborough	128,621	63	18,374	9	293,991	144	385,863	189
Total	900,746	234	128,678	33	2,058,849	534	2,702,239	701

Source: Authority Monitoring Data / GL Hearn

- 7.32 It is of note that the completions trend for the period 2012/13–2018/19 provides an average plot ratio of 0.4 based on data provided (2019/20 data not provided).
- 7.33 Supplementing the completions trend it is useful to review the total VOA monitoring data for the same period and previous. The VOA data captures all industrial floorspace including B1c, B2 and non strategic B8 (i.e. under 9,000 sqm) as well as large scale floorspace so is only a broad indicator of change. It also includes all losses as well as completions. Notwithstanding this it does provide a useful comparative benchmark on rates of change.
- 7.34 Table 27 reports the annualised change 2001/02 to 2018/19 and 2011/12 to 2018/19, projected forward to 2041. After removing authorities' losses to apply a growth only floorspace requirement, the recent trend data reports a requirement of 1.9 million sqm. This is lower than the authority monitoring completions data however the 2019/20 year reported by the authorities is high and not included in the VOA data at the time of writing. Using only the 2012/13 to 2018/19 large unit completions forecast to 2041 would be 2.1 million sqm, comparable to the VOA data (growth authorities only).

Table 27: Industrial Floorspace Trends, 2001/02-18/19 (sqm '000s)

	2001/02	2011/12	2018/19	2002-19 pa	2012-19 pa	2041 (2002-19 pa)	2041 (2012-19 pa)
Leicester City	3,083	2,605	2,439	-15*	-9*	-318*	-199*
Blaby	696	676	805	6	18	135	387
Charnwood	1,449	1,279	1,187	-15	-13	-324	-276
Harborough	1,089	1,240	1,324	14	12	290	252
Hinckley and Bosworth	1,158	1,065	1,147	-1	12	-14	246
Melton	457	484	508	3	3	63	72
North West Leicestershire	1,203	1,398	1,726	31	47	646	984
Oadby and Wigston	442	363	339	-6	-3	-127	-72
FEMA	9,577	9,110	9,475	-6	52	350	1,394
FEMA (growth only)						1,134	1,941

Source: VOA Business Floorspace Statistics, GL Hearn

* Losses for Leicester City reduced to 40% of actual figure going forwards - as highlighted previously, it is known that 60% of Leicester's loss occurred in SRA, outside of designated employment land

8 ESTIMATES FOR FUTURE STRATEGIC WAREHOUSING NEED – REPLACEMENT AND TRAFFIC GROWTH

8.1 This section aims to forecast future demand, and subsequently need for floorspace and land, for large scale warehousing facilities in Leicestershire using a modelling approach derived from the following key factors relating to new logistics facilities:

- The continual need to build new large-scale warehousing to replace existing capacity which will become life-expired (replacement build); and
- The need for additional floor space to handle freight traffic growth (growth build). This element therefore reflects the long-term growth in demand for goods in the wider economy.

8.2 Total new-build rates (demand) have been estimated. The outputs for this exercise are calendar years up to 2041 (as per the study Brief), though five-yearly intervals up to 2026, 2031 (to align with some Local Plans) and 2036 are also presented, using 2019 as its base year (in terms of existing floor space capacity and current traffic volumes). The 2019 floorspace is assumed as a year proxy and therefore a supply position begins at start 2020. The forecasts are for the county of Leicestershire and the East Midlands region (which will obviously include the outputs for Leicestershire).

8.3 Land use forecasting for other commercial sectors often seeks to relate employment growth to the need for additional floor space, using consistent and robust employment densities (Labour Demand model). This methodology is explored previously in this report but is considered to be unsuitable for the logistics sector for three reasons:

- Warehousing units have a much shorter functional or economic life than other types of commercial property e.g. office buildings. There is a consequent need to develop new units, much of which is simply replacing existing life-expired capacity on a like-for-like basis;
- There is no consistent or robust employment density ratio that can be applied to the B8 sector. Demand for floor space is primarily driven by cargo type, volumes and throughput rates, which in turn dictates employment requirements (numbers, skills etc..). Grocery retail has high throughput rates where goods are picked at less than pallet-load quantities, thereby requiring higher employment levels when compared with slower moving lines which are stored and re-distributed at pallet-level quantities. Consequently, warehouses with broadly the same quantum of floor space can have significantly different employment levels; and
- Increasing automation within warehouses, particularly for e-commerce, suggests future employment densities will be lower than today.

8.4 The Replacement and Traffic Growth (R&TG) methodology therefore seeks to overcome the issues of forecasts derived from employment growth.

Replacement Build

- 8.5 Most newly built floor space is a replacement for existing warehouse stock which is 'life expired'. This is for a number of reasons. Firstly, the useful economic life of a modern warehouse building is around 30 years, after which the building can be substantially refurbished and then re-let (e.g. either for warehousing or potentially other commercial/industrial uses) or demolished allowing the plot to be 'recycled' for new buildings (potentially new-build warehousing). While many older buildings may be physically sound (i.e. they are not physically obsolete), they can become functionally obsolete e.g. many older buildings cannot accommodate modern automated stock handling equipment, particularly that required for e-commerce, or transport equipment such as double-deck trailers. Essentially, buildings reach the end of their useful economic life and are no longer suitable for their original designed use, thereby necessitating a more modern direct replacement facility for the existing occupier.
- 8.6 A consequence of this process is that new sites need to be brought forward (or new plots at existing sites) in order to allow occupiers to re-locate to new buildings, thereby releasing the existing facility for refurbishment or demolition. It should be noted that this process also enables land adjacent to or within urban areas, which in all other respects are now poorly suited for strategic distribution (e.g. due to poor road connections, small/irregular shaped plots or housing close by) to be released for other more appropriate uses, including both employment and non-employment uses e.g. new residential developments.
- 8.7 Secondly, the logistics sector, when compared with 20-30 years ago, now has the ability to operate larger distribution centres. This has been facilitated by advances in modern ICT inventory management systems which have permitted much larger warehouses to be operated more efficiently than was previously the case. As a result, economies of scale can be gained through merging operations based at multiple sites to one new location. For example, 2 x 20,000 square metres warehouse operations are combined at one new 40,000 square metres facility – the new-build rate is 40,000 square metres but the net change will be zero on the theoretical basis that the old warehouses are demolished or in practice refurbished for commercial (potentially non-logistics) uses.
- 8.8 Finally, changing market conditions, both within specific companies/sectors and in the wider economy, means that warehouse operations might need to relocate in order to remain competitive. Occupiers who previously sourced goods from domestic suppliers but now predominantly import from Eastern

European and deep-sea markets may seek a new location at a rail-linked site in order to remain competitive.

- 8.9 A suitable example of these three issues is the on-line retailer *Very* (formerly *Shop Direct*). They have recently begun to close three older (functionally obsolete) warehouse units in the Manchester area. They are to be replaced by a modern purpose-built warehouse at East Midlands Gateway which can accommodate significant levels of automation. Economies of scale will be gained by merging three facilities into a single operation under one roof. The East Midlands Gateway location was selected as it gave them direct access to an intermodal rail terminal, initially to reduce transport costs from the deep-sea container ports though no doubt 'future proofing' with regards to de-carbonisation.
- 8.10 In order to estimate the 'replacement build' element up to 2031 and 2041 (i.e. floor space which will become functionally obsolete or in some cases physically obsolete), the existing stock of large-scale warehousing in the East Midlands region and Leicestershire needs to be considered. This was undertaken in Section 3 and showed that in 2019 the East Midlands region accommodated just over *9.3 million square metres* of floor space across 386 commercial properties. In Leicestershire itself, around *2.3 million square metres* of floor space across 100 commercial properties were identified.
- 8.11 On the basis that the useful economic life of a modern warehouse building is 30 years, up to 2031 (i.e. 2020 to the start of 2031) we could therefore expect around 37% of the existing warehouse stock in the region to require replacement (i.e. $11 \text{ years}/30 \text{ years} = 37\%$). Taking into account the stock age analysis this is reasonable, since 31% of current stock is pre 2000 (with a further 9% unreported) which would require replacement by 2031.
- 8.12 Likewise, up to 2041, we could expect around 70% of the existing warehouse stock in the region to require replacement (i.e. $21 \text{ years}/30 \text{ years} = 70\%$). Again, it appears reasonable considering that 64% of current stock in Leicester and Leicestershire was built pre 2010, plus 9% unreported. This can be considered the high 'replacement build' scenario.
- 8.13 We have considered a position where the rate of replacement begins to slow. This may extend the useful life to around 40 years. Typical profiling suggests that around 28% and 53% of the existing stock is estimated to require replacement up to 2031 and 2041 respectively. This can be considered the low 'replacement build' scenario. Considering the age of stock in Leicester and Leicestershire it

is possible that the rate could be even slower, as age analysis suggests that locally figures are closer to 22% and 40%¹⁰ however the general profile is used in the main model.

8.14 On that basis, Table 28 shows the estimated 'replacement build' rates.

Table 28: Existing Floorspace

Area	Existing Floorspace (000's sqm)
Existing floor space - Leicestershire	2,314
Existing floor space - East Midlands	9,262

Source: VOA

Table 29: Replacement Build Scenarios 2020 to 2041, Leicestershire and East Midlands

	2026	2031	2036	2041
High Replacement	<i>000's sqm</i>	<i>000's sqm</i>	<i>000's sqm</i>	<i>000's sqm</i>
Replacement build - Leicestershire	463	848	1,234	1,620
Replacement build - East Midlands	1,852	3,396	4,940	6,483
Low Replacement	-	-	-	-
Replacement build - Leicestershire	347	636	925	1,215
Replacement build - East Midlands	1,389	2,547	3,705	4,863

Source: MDS Transmodal

Table 30: % Replacement Assumptions by Year

Scenario	%	Year	%	Year
High	-	-	-	-
% replacement assuming 30 years economic life	20%	to 2026	53%	to 2036
Low	-	-	-	-
% replacement assuming 40 years economic life	15%	to 2026	40%	to 2036
	28%	to 2031	53%	to 2041

Source: MDS Transmodal

Growth Build

8.15 As alluded to above, demand for warehouse floor space is driven by the need to handle cargo. Therefore, future economic growth in the wider economy along with the forecast population increases will lead to a growth in the volume of consumer goods handled. This in turn will lead to increasing

¹⁰ Assumes that unknown / unreported stock age is in 'older' categories, which is typically the case.

demand for additional warehouse floor space. Consequently, new warehouses are constructed partly to accommodate growing traffic volumes over the long term (the 'growth build' element).

8.16 In order to estimate the growth build element two factors need to be considered, namely:

- For those commodities which pass through large scale distribution centres (i.e. excluding bulk and semi-bulk cargoes such as aggregates and forest products), the current (2019) volume which is delivered directly to large scale distribution centres in Leicestershire and the East Midlands region; and
- For those commodities which pass through large scale distribution centres, the forecast volumes (for the years to 2041) delivered directly to large scale distribution centres in Leicestershire and the East Midlands region.

8.17 As with the floorspace figures, the 2019 volume is a year representation, with forecasting starting calendar year start 2020 and being 21 years to 2041.

8.18 Both the current and forecast volumes (as described) have been produced using the MDS Transmodal *GB Freight Model*. This is an analytical tool which can estimate existing freight flows (by origin-destination, mode, commodity and port of entry/departure for international traffics) and generate forecasts for future years (on the same basis) under different policy and economic scenarios. It has been used to generate forecasts for the DfT, Network Rail, NIC and Transport for the North (TfN), and was used to produce the land use forecasts in the Leicester and Leicestershire SDS.

8.19 As noted in Section 2, MDS Transmodal have recently produced an updated set of rail freight demand forecasts for Network Rail for the years 2023, 2033 and 2043 (to inform their long term planning process). The forecast traffic volumes produced for this study are consistent with the 'central' scenario (Scenario E) outputs from the Network Rail forecasts¹¹. Table 31 shows, for those commodities which pass through large scale distribution centres, the total volume of cargo currently destined for Leicestershire and the proportion estimated to be delivered directly to large scale distribution centres. On the same basis, forecast volumes for the years up to 2041 are presented. Table 32 following shows the equivalent figures for the East Midlands region.

¹¹ While the Network Rail forecasts only published the expected rail demand, the GB Freight Model's structure and forecasting methodology means that associated road freight demand is also forecast simultaneously.

Table 31: Existing & Forecast Freight Flows for Distribution Centre Commodities – Leicestershire

	000s tonnes-lifted				
	2019	2026	2031	2036	2041
<i>Road</i>					
Destination Leicestershire - Total	28,172	30,984	32,993	35,430	37,867
Destination Leicestershire - To Warehouse*	12,677	13,943	14,847	15,943	17,040
<i>Rail</i>					
Destination Leicestershire - Total	0	290	497	648	798
Destination Leicestershire - To Warehouse	0	290	497	648	798
TOTAL - To Warehouse	12,677	14,233	15,344	16,591	17,838
Growth v 2019		1,556	2,667	3,914	5,161

Source: GB Freight Model

Table 32: Existing & Forecast Freight Flows for Distribution Centre Commodities – East Midlands

	000s tonnes-lifted				
	2019	2026	2031	2036	2041
<i>Road</i>					
Destination East Midlands - Total	106,179	115,350	121,901	128,452	135,002
Destination East Midlands - To Warehouse*	47,781	51,908	54,855	57,803	60,751
<i>Rail</i>					
Destination East Midlands - Total	1,402	2,220	2,804	3,504	4,204
Destination East Midlands - To Warehouse	1,402	2,220	2,804	3,504	4,204
TOTAL - To Warehouse	49,182	54,127	57,660	61,308	64,955
Growth v 2019		4,945	8,477	12,125	15,773

Source: GB Freight Model

*45% of road traffic (see below para 8.22 for explanation)

- 8.20 The forecasts, as described, indicate that for Leicestershire an additional 5.2 million tonnes can be expected to pass through large scale distribution centres in 2041 compared with 2019. Likewise, the equivalent figure for the East Midlands region is an additional 15.8 million tonnes over 2019 volumes. As above, the new-build forecasts are for full calendar years up to the start of the year shown e.g. for 2031 this represents replacement and traffic growth over an 11 year period up from the start of 2020.
- 8.21 For the road data, the total figure (for Leicestershire and the East Midlands) does not establish the volume of goods which are delivered directly to distribution centres. The GB Freight Model's baseline data for road transport flows is derived from the DfT's Continuing Survey of Road Goods Transport

(CSRGT). The CSRGT effectively records goods each time they are lifted from manufacturer/port to distribution centre to retail outlet, meaning that one tonne of cargo transferred from a port via a NDC and RDC to a retail outlet would be recorded as 3 tonnes in the CSRGT. The total volume, as described in the tables above, is therefore the sum of all cargo delivered into factories, NDCs, RDCs and retail outlets.

8.22 A further 'filter' has been applied to eliminate this double/triple counting. Previous work for the Leicester and Leicestershire SDS indicated that around *45% of road freight* traffic destined for the East Midlands was being delivered direct to a distribution centre (the remainder being delivered direct to stores or to other facilities). Following review, this figure appears to remain robust and has again been adopted for both the current and forecast road traffic flows destined for Leicestershire and the East Midlands. Applying a 'sense check', by relating the direct to warehouse volumes to the existing quantum of large scale distribution centre floor space, this suggests that each square metre of floor space handles around 6.5 tonnes of cargo per annum (on the basis that 85% of total floor space is utilised at average any one time and is likely to remain so). This is consistent with what we would expect at NDCs (stock holding role) and implies average dwell times of around 5-6 weeks. It is assumed that all inbound intermodal rail traffic will be destined for a distribution centre.

8.23 We have also undertaken a 'sensitivity test' of the freight traffic growth forecast. This has been developed to reflect an indicative potential increase in traffic growth resulting from heightened e-commerce trading occurring since the onset of the COVID-19 pandemic (taking place during the production of this report). In this case, the forecast traffic volumes quoted above for 2041 are estimated to grow by a further 15% (with volumes in the interval years interpolated between the higher 2041 forecast and the 2019 actual). This is shown in Tables 33 and 34 for Leicestershire and the East Midlands.

Table 33: Sensitivity Test Traffic Forecast (2041 Traffic Forecast + 15%) - Leicestershire

	000s tonnes-lifted				
	2019	2026	2031	2036	2041
<i>Road</i>					
Destination Leicestershire - Total	28,172	33,064	36,558	40,052	43,547
Destination Leicestershire - To Warehouse*	12,677	14,879	16,451	18,024	19,596
<i>Rail</i>					
Destination Leicestershire - Total	0	292	501	709	918
Destination Leicestershire - To Warehouse	0	292	501	709	918
TOTAL - To Warehouse	12,677	15,171	16,952	18,733	20,514

Growth v 2019		2,493	4,275	6,056	7,837

Source: GB Freight Model outputs + additional 15% to 2041

*45% of road traffic

Table 34: Sensitivity Test Traffic Forecast (2041 Traffic Forecast + 15%) – East Midlands

	000s tonnes-lifted				
	2019	2026	2031	2036	2041
<i>Road</i>					
Destination East Midlands - Total	106,179	121,794	132,947	144,100	155,253
Destination East Midlands - To Warehouse*	47,781	54,807	59,826	64,845	69,864
<i>Rail</i>					
Destination East Midlands - Total	1,402	2,494	3,274	4,055	4,835
Destination East Midlands - To Warehouse	1,402	2,494	3,274	4,055	4,835
TOTAL - To Warehouse	49,182	57,301	63,100	68,900	74,699
Growth v 2019		8,119	13,918	19,717	25,516

Source: GB Freight Model outputs + additional 15% to 2041

*45% of road traffic

- 8.24 On this basis, for Leicestershire an additional 7.8 million tonnes can be expected to pass through large scale distribution centres by 2041 compared with (end) 2019 (or a further 2.6 million tonnes annually over the standard traffic forecast). Likewise, the equivalent figure for the East Midlands region is an additional 25.5 million tonnes over 2019 volumes.
- 8.25 The growth in annual traffic (compared with 2019 levels) for both the main traffic forecast and the sensitivity test have subsequently been converted into the need for additional floor space i.e. the growth build element, using generally accepted 'conversion factors' which relate annual tonnage throughput and floor space at large scale 'high bay' type warehouses. Tables 35 and 36 show the forecast traffic growth alongside the additional floor space required to handle that growth.

Table 35: Forecast Traffic Growth and Additional Floor Space Required

	2026	2031	2036	2041
<i>Leicestershire</i>				
Traffic growth v 2019 (000s tonnes-lifted)	1,556	2,667	3,914	5,161
Additional floor space (000s sqm)	61	105	154	203
<i>East Midlands</i>				
Traffic growth v 2019 (000s tonnes-lifted)	4,945	8,477	12,125	15,773
Additional floor space (000s sqm)	195	334	477	621

Source: GB Freight Model

Table 36: Sensitivity Test Traffic Forecast and Additional Floor Space Required

	2026	2031	2036	2041
Leicestershire				
Traffic growth v 2019 (000s tonnes-lifted)	2,493	4,275	6,056	7,837
Additional floor space (000s sqm)	98	168	238	308
East Midlands				
Traffic growth v 2019 (000s tonnes-lifted)	8,119	13,918	19,717	25,516
Additional floor space (000s sqm)	319	548	776	1,004

Source: GB Freight Model outputs + additional 15% to 2041

Total New-Build

- 8.26 By combining the 'replacement build' and 'growth build' elements (four scenarios in total once the different high and low elements are combined), the total warehouse new-build which can be expected by 2041 can be calculated. This is shown in Table 37 for the four scenarios.

Table 37: Forecast New-Build Rates 2020 to 2041

	000s sqm			
	2026	2031	2036	2041
Leicestershire				
High replacement, forecast traffic growth	524	953	1,388	1,823
Low replacement, forecast traffic growth	408	741	1,079	1,418
High replacement, sensitivity test traffic growth	561	1,017	1,472	1,928
Low replacement, sensitivity test traffic growth	445	804	1,164	1,523
East Midlands				
High replacement, forecast traffic growth	2,047	3,730	5,417	7,104
Low replacement, forecast traffic growth	1,584	2,881	4,182	5,483
High replacement, sensitivity test traffic growth	2,172	3,944	5,716	7,487
Low replacement, sensitivity test traffic growth	1,709	3,095	4,481	5,867

Source: VOA, GB Freight Model and Consultant estimations as described

- 8.27 Based on this forecast methodology, for Leicestershire under the 'High Replacement, forecast traffic growth' scenario we can expect a gross new-build of just over 1.8 million square metres up to 2041. Note that the sensitivity test traffic forecast only adds a further 100,000 square metres to this total up to 2041. Likewise, under the 'Low Replacement, forecast traffic' scenario, 1.4 million square metres of gross new-build is forecast up to 2041. The equivalent figures for the East Midlands region are 7.1 and 5.5 million square metres respectively (and the sensitivity test only adds just under 400,000 square metres to the total up to 2041).

- 8.28 There are a number of points to note from Table 37 above. Firstly, the outputs represent the total quantum of new floor space which is forecast to be built up to 2041. It is not the 'net change' in floor space, which planners often consider. However, for large warehousing the gross new-build rate is the more important figure as, in most cases, new capacity will need to be accommodated at new sites albeit the recycling of existing sites is encouraged where feasible (see discussion in section 13). Secondly, at this stage the quantum of additional land needed to accommodate the floor space forecast has not been calculated; this is addressed further in Section 9 once existing plots/sites with consents are considered.
- 8.29 While 'high' and 'low' replacement forecasts have been considered above, it is the 'high replacement' scenario that should be considered as the preferred option going forward for planning purposes. This is for two principal reasons:
1. Market evidence suggests that while many existing older buildings may be physically sound, they are increasingly becoming functionally obsolete, or the locations themselves unsuitable. To a great extent, this situation is being driven by changes in the retail sector, and in particular the large growth rates for e-commerce (as described elsewhere in this report). Traditionally, the principal function of many NDCs in the Midlands was to hold stock at the 'pallet level' before its transfer to RDCs or direct to retail stores. Picking and handling is generally based around fork-lift truck type equipment moving full pallets to/from pallet racks. E-commerce, on the other hand, tends to be picked/packed at the individual consignment level (in an envelope or small box/package which is subsequently collected by Royal Mail or parcel couriers). The modern automated picking, handling and packaging systems required for these types of operations cannot be 'retro-fitted' into older buildings alongside the traditional NDC function e.g. the new M&S warehouse at Castle Donington was specifically commissioned and designed to handle e-commerce and slower moving store lines under the same roof, but it also replaced existing capacity at other sites. As discussed, further automation is potentially a consequence of future restrictions on recruiting labour from the EU.

Further, as discussed in the section on e-commerce, pure on-line retailers (or more likely their contracted parcel couriers) are seeking smaller purpose built 'cross-dock' type facilities close to urban conurbations where goods from NDCs (arriving by rail or large HGVs) can be transferred directly to LGVs/MGVs for final delivery to residential properties. This requirement is effectively replacing the traditional RDC warehouse for some retailers. While RDC and cross-dock locational requirements will be similar, with reasonable proximity to urban areas, it is the internal layout of the building that is different. RDCs include areas where goods can be stored (i.e. in racks), even if for short periods of time, whereas cross-docks are designed purely for the rapid transfer of goods between vehicles (lots of open space at ground floor level). Whether former RDC units can be re-furbished/re-purposed as cross-docks will depend on the structure of the individual building.
 2. As discussed elsewhere in this report, the de-carbonising agenda will drive further demand for warehouse facilities which are served by the railway network. Long distance trunk-hauls from ports and to/from more distant domestic origins/destinations can then be undertaken by (predominantly) electric powered trains (as battery electric HGVs will not have sufficient range).

The freight flow forecasts (as described) showed expected continuing strong growth rates in the intermodal sector. Re-iterating the Shop Direct example, the East Midlands Gateway location was selected as it gave them direct access to an intermodal rail terminal (initially to reduce transport costs from the deep-sea container ports though no doubt 'future proofing' with regards to de-carbonisation).

- 8.30 Consequently, it is recommended that the area should plan on the basis of a faster rate of replacement-build. This should ensure the maintenance of Leicestershire's competitive position currently enjoyed alongside providing the market with a geographical spread of commercially attractive sites available to satisfy individual operator locational requirements.
- 8.31 Within the above context it is recognised that stock built since the 1990s (such as Magna Park) and since will be based in more desirable locations and have more potential to be refurbished for logistics or at least as secondary stock. Over the next decade as more of Leicester and Leicestershire's stock reaches a 30 year life span, trends in refurbishment and reuse will be clearer. This could lead to a slow down in the need for new sites as recycling increases. This highlights the importance of monitoring (section12) and is discussed further in section 13 in relation to employment trends.

9 TESTING DEMAND FORECASTS AND SUPPLY

9.1 This section considers the modal split of future needs identified under the replacement and traffic growth model and how this marries supply.

Rail Served Sites – Demand and Supply

9.2 As presented in the analysis of existing capacity (stock, see Section 3), EMDC is currently the only rail-served site in Leicestershire, providing 153,000 square metres or just over 6% of the county's capacity, albeit no train services currently operate (as described). This is broadly in-line with the national position. As noted, around 200,000 square metres across 5 units are currently being developed and brought into operation at East Midlands Gateway, which will increase the rail-served share. Across the East Midlands region, around 0.75 million square metres of floor space is currently located on a rail-served site, equating to around 8% of the region's stock (i.e. currently marginally ahead of the national position).

9.3 The national rail freight demand forecasts undertaken for Network Rail (as described) assumed that 26% of future new-build warehousing would locate at a rail-served site (Strategic Rail Freight Interchanges or SRFIs). This was understood to be broadly in-line with recent planning consents in England and Wales for large scale warehousing at the time the forecasts were produced (summer 2018). In the first instance, therefore, we have considered a scenario whereby 26% of the forecast Leicestershire and East Midlands floorspace need is developed at SRFIs.

9.4 However, the planning system should now be making provision for a much greater proportion of future large scale new-build floorspace to locate at rail-served sites across the region over the medium-long term. This is due to the following reasons, as discussed in the key drivers of change section.

1. National planning policy, principally para 2.27-2.36 of the NPPF, clearly expects large scale freight developments to be built at locations which have access to the railway network (or ports/inland waterways). The National Networks NPS also concludes that there is a 'a compelling need for an expanded network of SRFIs'

2. The large growth rates over the past decade in intermodal rail freight, particularly on flows from the deep-sea ports to the English Midlands and north of England. The national rail freight demand forecasts (as described) suggest this growth will continue to 2043. It is worth noting that these

forecasts have 'buy-in' from the wider freight industry and key stakeholders and can be considered the freight/logistics industry's long term demand forecasts.

3. The ability to access cost competitive rail freight services is increasingly becoming a key commercial requirement of the logistics industry, particularly for medium-longer distance trunk hauls between ports, NDCs and RDCs. The principal reasons are cost (full-length trains should offer a cheaper option between two rail-linked sites, even over relatively short distances) and HGV driver shortages. As outlined in the presentation of recent rail freight trends (in section 2), a number of major grocery retailers, port companies and road haulage operators now contract their own rail freight services. It is understood that *very.co.uk* selected East Midlands Gateway for their new NDC as it gave them direct access to an intermodal rail terminal, initially to reduce transport costs from the deep-sea container ports. The development of rail-linked strategic distribution sites is a crucial component in delivering the ability to access cost competitive rail freight services.

4. Perhaps most importantly, the de-carbonising agenda and the long-term need to de-carbonise road and rail freight is becoming a key issue generally (and for the logistics sector specifically). While the increasing use of rail freight has to date been driven by cost, this will become the key driving factor going forward. However, as noted by the NIC, de-carbonising HGVs will be 'challenging'; battery-electric HGVs are unlikely to provide the distance range currently provided by diesel powered freight vehicles, E-highways will require a significant investment, meaning they would only cover the strategic network, while there are significant issues concerning the production and distribution of hydrogen (for fuel cells).

9.5 Electrically hauled rail freight is currently the only proven technology that can transport freight over long distances with zero greenhouse gas emissions (assuming the electricity is generated by zero-carbon means). The ability to haul freight over long distances by rail to large scale warehouses, where it can then be transferred to battery-electric powered HGVs/LGVs for shorter distance final deliveries is therefore likely to become a key requirement for the logistics sector. The development of competitive rail-linked strategic distribution sites is a crucial component in meeting this requirement.

9.6 Taking this into account, we have therefore considered a scenario with a much greater proportion of future large scale new-build locating at rail-served sites, when compared with the current 6% or 26% scenario, to reflect these policy, commercial and de-carbonising requirements.

9.7 The *Leicester and Leicestershire SDS* considered the size of warehouse units currently located at the existing SRFIs in the East Midlands (DIRFT) and elsewhere (e.g. Hams Hall) alongside the size of units being planned for new SRFIs in the region. The SDS subsequently concluded that it was warehousing units above 25,000 square metres that will benefit from or be of a nature to be attracted to sites with rail terminal facilities. Analysis of the VOA data suggests that around 56% of the East Midland’s large scale warehouse stock is comprises units greater than 25,000 square metres. Further, it is large scale warehouses greater than 25,000 square metres that will require the large plot sizes that are being planned for and are available at SRFIs

9.8 We have therefore considered a scenario whereby at least 60% of future large scale new-build in Leicestershire and the wider East Midlands is located at a SRFI. A final scenario where 43% of future new-build locates at a SRFI, this being the mid-point between the 26% and 60% scenarios, has also been considered. Table 38 quantifies the three scenarios described (note that this table excludes any further margin for flexibility which is considered further in section 10).

Table 38: Total Forecast New-build at Rail-Served Sites (SRFIs) 2020 to 2041

	2020 to 2041 (000s sqm)	
	Leicestershire	East Midlands
<i>High Replacement, Forecast Traffic Growth</i>		
Total New-build	1,823	7,104
<i>Rail-served new-build at:</i>		
26%	474	1,847
60%	1,094	4,262
43%	784	3,055
<i>High Replacement, Sensitivity Test Traffic Growth</i>		
Total New-build	1,928	7,487
<i>Rail-served new-build at:</i>		
26%	501	1,947
60%	1,157	4,492
43%	829	3,220

Source: MDS Transmodal

9.9 For the ‘high replacement, traffic forecast’ and 60% rail-served scenarios, just over 1 million square metres of floor space will need to be developed at rail-served sites by 2041 in Leicestershire. The equivalent ‘mid-point’ rate indicates that just under 0.8 million square metres should be developed at rail-served sites to 2041. Likewise, for the East Midlands 4.3 million square metres can be expected

to be built at rail-served sites by 2041 under the 'high replacement, traffic forecast' and 60% rail-served scenarios.

9.10 We have therefore compared the rail-served new-build demand (above) against the quantum of floor space which will potentially be brought forward at SRFIs up to 2041 (supply). Table 39 shows the current position with respect to floor space development potential at:

- Existing rail-served sites with B8 consents where plots are available (i.e. not allocated to a specific occupier and being actively marketed by agents); and
- Sites where consent has recently been awarded but development/occupation has yet to commence.

9.11 The assessment of market availability and commitment was undertaken in April 2020 which forms the overall supply position. The supply position is taken to be that at the start of 2020, aligning with the needs model, although in reality it is April 2020 based on authority monitoring and market assessment at that time. Where sites or plots have been pre-let to an occupier before this point, (i.e. before a building is finished being built) these are excluded as they are not available on the market to other occupiers to meet need arising in the 2020-2041 forecast period. This leads to some differences between the supply assessment used in this model compared to the local authorities' completions monitoring. This is discussed further below and in section 10.

9.12 Non-strategic plots (i.e. where the warehouse would be less than 9,000 square metres) and land set aside for B1 uses have also not been included. The floor space figures shown are, in the case of existing sites with consents, the respective developer/agent estimates with respect to the size of unit that can be accommodated on vacant plots (sourced from their websites). For the new sites where consent has recently been awarded, the quantum of floor space is that referenced in the relevant planning application or DCO documentation (e.g. from the master plan).

Table 39: Rail-served Site Supply in Leicestershire and East Midlands – With Consents

Leicestershire	000s sqm
Existing Sites with Consents	
East Midlands Gateway	236
East Midlands Distribution Centre*	102
Total	338
East Midlands Regions	000s sqm
Existing Sites with Consents	
East Midlands Gateway	236
DIRFT Phase III	731
East Midlands Distribution Centre*	102
Consent – yet to be developed	
Northampton Gateway	560
Total	1,656
Permissions with pre-lets, excluded from supply	-

* On-site rail terminal but currently not served by rail services

Source: Developer/Agent websites and DCO Applications (Planning Inspectorate)

- 9.13 In Leicestershire, around 340,000 square metres can potentially be developed at SRFIs, while across the East Midlands just over 1.5 million square metres could be built. *East Midlands Gateway (SEGRO Logistics Park)* was granted its Development Consent Order (DCO) in 2016. Around 240,000 square metres are currently being developed and brought into operation, and the intermodal terminal recently commenced handling two trains per day from Felixstowe. Six plots potentially offering around 236,000 square metres of floor space remain to be developed. Plots at *East Midlands Distribution Centre* are currently being marketed and offer around 104,000 square metres for B8 development (EMDC 525 and Plot 3). Note that while the site contains a small intermodal terminal, there are currently no rail services operating to the site.
- 9.14 *Northampton Gateway* (promoted by Roxhill) was granted its DCO in October 2019. The scheme will provide around 560,000 sqm of floor space alongside a new intermodal terminal connected to the West Coast Main Line (Northampton branch). The site will be served from Junction 15 of the M1. At the existing SRFI at *DIRFT (ProLogis)*, the Phase III expansion was granted a DCO in July 2014. This will ultimately provide for around 731,000 square metres of floor space alongside a re-located (and expanded) intermodal terminal.
- 9.15 Table 40 consequently compares the forecast rail-served new-build to 2041 with the anticipated supply as described. The expected shortfall (i.e. where planned supply as detailed above is not able

to meet the forecast demand) is also shown. This has then been 'converted' into the amount of additional land (in hectares) that will need to be brought forward to accommodate this floorspace.

Table 40: Land Required at Rail-served Sites and Potential Site Supply 2020 to 2041*

Leicestershire	2020 to 2041 - % rail-served		
	26%	60%	43%
High Replacement, Forecast Traffic Growth			
New-build (000s sqm)	474	1,094	784
Supply (000s sqm)	338	338	338
Balance (000s sqm)	-136	-756	-446
Additional Land required (ha)	54	302	179
High Replacement, Sensitivity Test Traffic Growth			
New-build (000s sqm)	501	1,157	829
Supply (000s sqm)	338	338	338
Balance (000s sqm)	-163	-819	-491
Additional Land required (ha)	65	328	196
East Midlands	2020 to 2041 - % rail-served		
	26%	60%	43%
High Replacement, Forecast Traffic Growth			
New-build (000s sqm)	1,847	4,262	3,055
Supply (000s sqm)	1,656	1,656	1,656
Balance (000s sqm)	-191	-2,606	-1,399
Additional Land required (ha)	76	1,042	560
High Replacement, Sensitivity Test Traffic Growth			
New-build (000s sqm)	1,947	4,492	3,220
Supply (000s sqm)	1,656	1,656	1,656
Balance (000s sqm)	-291	-2,836	-1,564
Additional Land required (ha)	116	1,134	626

Source: DCO Applications (Planning Inspectorate) and Developer websites

* Plot ratio of 0.25 assumed

- 9.16 For Leicestershire, the 'high replacement, traffic forecast' and 60% rail-served scenario indicates that projected supply will not be able to meet the forecast demand at rail-served sites up to 2041 (a short-fall of around 760,000 square metres of floor space). Similarly, the short-fall is around 450,000 square metres on the basis that 43% of future demand locates at rail-served sites (excluding any margin for flexibility as discussed in Section 10).

- 9.17 Analysis of recent applications/consents suggests that the plot ratio (i.e. floor space to overall site size) is less than 30% at a SRFI and once the rail terminal and any 'green' screening or landscaping is accounted for it is typically around 25%, see Appendix F. Based on a ratio of 0.25 (including landscaping), the amount of additional land that will need to be brought forward at rail-served sites in Leicestershire (in order to meet the forecast demand) is between 179ha (43%) and 302ha (60%), in each case for the 'high replacement, traffic forecast' scenario, excluding any margin for flexibility. Depending on size, this suggests one or two SRFIs will need to be brought forward within Leicestershire up to 2041.
- 9.18 This shortfall could be fulfilled through the *Hinckley National Rail Freight Interchange (NRFI)*, a SRFI being promoted by Tritax Symmetry adjacent to Junction 2 of the M69 and alongside the Leicester to Nuneaton main line. Covering around 185ha of active flat area (336 ha overall), an integral intermodal terminal is planned for the site serving around 650,000 square metres of large-scale floor space at ground level (additional mezzanine space is also planned). As the scheme is larger than 60ha, it is classed as a nationally significant infrastructure project (NSIP) and consent has to be sought via a DCO. The scheme is formally listed with the Planning Inspectorate (PINS) as an NSIP at the 'Pre-application stage' in Summer 2020, although submission of the draft DCO is expected in Q4 of 2021. Two rounds of informal developer led pre-application consultation have taken place (October-December 2018 and July-September 2019) with further statutory consultation required under DCO subject to submission. Should the DCO be granted, the forecast shortfall for Leicestershire would effectively be filled under the 43% rail served scenario.
- 9.19 As discussed in Section 10 of the report, it is considered prudent to add further margin for flexibility. This does affect the balance and increases the floorspace shortfall to 723,000sqm for the High replacement scenario or 768,000sqm for the High replacement / Sensitivity scenario. Regardless, this could be largely fulfilled by the HNRFI.
- 9.20 Across the East Midlands region as a whole, the 'high replacement, traffic forecast' and 60% rail-served scenarios indicate that projected supply will not be able to meet the forecast demand at rail-served sites up to 2041 (a short-fall of around 2.6 million square metres of floor space). Similarly, the short-fall is around 1.4 million square metres at SRFIs on the basis that 43% of future demand locates at a SRFI. On the same basis, this suggests between 3-4 SRFIs will need to be brought forward up to 2041 in addition to those currently being planned.

- 9.21 In terms of filling this shortfall, in addition to Hinckley NRFI developer Goodman is still understood to be progressing its planned SRFI at Etwall near Derby (*East Midlands Intermodal Park*), albeit its DCO application is still at the 'Pre-application' stage with PINS (formal consultation has yet to take place). This scheme, covering around 255ha, should provide around 485,000 square metres of floor space alongside a new intermodal terminal.
- 9.22 A further SRFI scheme near Northampton (*Rail Central*) is being promoted by a Gazeley-Ashfield Land joint-venture. However, its DCO application was formally withdrawn during Autumn 2019, principally concerning the scheme's impact on highway capacity at Junction 15a of the M1 (though given that the Northampton Gateway scheme has been granted a DCO, rail capacity may also be an issue, at least until HS2 opens). It is not known whether a revised scheme will be submitted, albeit it is likely that the process will need to recommence at an earlier stage (including re-running the formal consultation). Rail Central would provide a further 700,00 square metres of floor space.
- 9.23 Table 41 summarises the site supply position once these 3 potential schemes in the in the public domain are also accounted for. Assuming all three schemes in the East Midlands are granted DCOs, at least one additional SRFI in the East Midlands is likely to be required in order to meet the 60% of new-build demand to rail-served sites.

Table 41: Potential Site Supply 2041 – Leicestershire and East Midlands

Leicestershire	Floor Space and Land Available	
	000s sqm	Ha
Existing Sites with Consents		
East Midlands Gateway	236	58
East Midlands Distribution Centre*	102	20
Total – with consents	338	78
DCO being considered		
Hinckley NRFI	650	226
East Midlands		
Existing Sites with Consents		
East Midlands Gateway	263	58
DIRFT Phase III	731	345
East Midlands Distribution Centre*	102	20
Consent – yet to be developed		
Northampton Gateway	560	219
Total - with consents	1,656	642
DCO Potential		
Hinckley NRFI	650	185**
East Midlands Intermodal Park	485	255
Rail Central	700	294
Total - potential	1,835	734

* On-site rail terminal but currently not served by rail services

** Level land area although DCO application area a total of 336 ha

Source: Developer/Agent websites and DCO Applications (Planning Inspectorate)

Road Only Sites – Demand and Supply

9.24 Having accounted for forecast demand and expected supply at SRFIs in Leicestershire, Table 42 shows the consequent forecast demand to 2041 for floor space at non rail-served (road only) sites. Given the considerable number of regional road-based schemes as discussed in section 6 and Appendix D, an East Midlands position is not considered.

Table 42: Total Forecast New-build and Road Only New-build to 2041 (High Replacement) – Leicestershire

	2020 to 2041 (000s sqm)
High Replacement, Forecast Traffic Growth	
Total New-build	1,823
Road only New-build at:	
26% rail-served	1,349
60% rail-served	729
43% rail-served	1,039
High Replacement, Sensitivity Test Traffic Growth	
Total New-build	1,928
Road only New-build at:	
26% rail-served	1,427
60% rail-served	771
43% rail-served	1,099

Source: MDS Transmodal

9.25 Assuming 60% of new-build is developed at rail-served sites, this suggests that 729,000 square metres of floor space will need to be developed by 2041 across Leicestershire at road-only connected sites. The corresponding figure for 43% of new-build to rail-served sites is just over 1 million square metres. These figures exclude any margin set out in Section 10.

9.26 As per above, we have therefore compared the new-build demand which can be expected at road-only sites (above) against the quantum of floor space likely to be made available up to 2041 (supply). Table 43 shows the current position with respect to:

- Units recently completed / renovated and are currently vacant and awaiting a tenant/occupier (speculative);
- Plots currently available at existing sites with B8 consents but development/occupation has yet to commence; and
- Plots where a consent has yet to be awarded, but the site is allocated for B8 in the respective local plan.

- 9.27 As with the rail based supply assessment, the data was collated during the early part of 2020, however the supply position is taken to be that at the start of 2020 to align with the needs model, although in reality it is April 2020. Where sites or plots have been pre-let to an occupier before that date, these are excluded as they are not available on the market to other occupiers to meet need arising in the 2020-2041 forecast period. In the case of the road based supply this leads to substantial differences between the supply assessment used in this model compared to the local authorities monitoring (details in Appendix C).
- 9.28 The figures quoted represent the respective developer estimates with respect to the size of unit that can be developed (sourced from their websites) or the quantum of floor space that is referenced in the relevant planning application (e.g. from the master plan) which has been checked against authority monitoring for permissions. Non-strategic plots (where the warehouse is or would be less than 9,000 square metres) and plots/sites allocated for B1/B2 were not included in the assessment.

Table 43: Site Supply Road Only– Vacant Units and Plots with B8 Consents (exc pre-lets)

Local Authority and Site	000s sqm
<i>Hinckley and Bosworth</i>	
Unit 1 Mountpark Phase II	62
<i>Blaby</i>	
Land West of St Johns Enderby	99
<i>Charnwood</i>	
Rothley Lodge, Loughborough Road, Rothley	11
Artform International, Loughborough (built, available)	14
<i>Harborough</i>	
Tornado 186 Magna Park (built, available)	16
Magna Park South (Glebe Farm)*	279
Magna Park North (Mere Lane)**	320
M1 Access, Lutterworth (built, available)	11
X Dock 377, Magna Park (built, available)	35
Quantum, Magna Park (built, available)	38
Hurricane Warehouse (4400) Magna Park (built, available)	24
<i>Leicester</i>	
D&B Leicester Distribution Park	9
<i>North West Leicestershire</i>	
225 at Interlink, Beveridge Lane, Bardon (built, available)	21
Zorro, Coalfield Way, Ashby-De-La-Zouch (built, available)	22
Former Coal Lounge Disposal Point (built, available)	62
Unit 2, Mountpark Phase II (built, available)	50
Total	1,073
Permissions with pre-lets, excluded from supply	552

Source: Planning applications, developer estimates, CoStar availability April 2020

* Up to 8 plots

** Up to 7 plots

Figures may not sum due to rounding

- 9.29 This suggests that 780,000 sqm of future road-only sites will be available based on permissions alongside 293,000 of newly developed or recently refurbished stock currently available. A further 552,000 is currently being brought forward as pre-let to an occupier and are excluded under this model as not available on the market to other occupiers to meet need arising in the 2020-2041 forecast period. This leads to some differences between the supply assessment used in this model compared to the local authorities' completions monitoring.

- 9.30 Table 44 consequently compares the forecast road-only new-build to 2041 with the anticipated site supply currently with consents.

Table 44: Total New-build at Road Only Sites and Potential Site Supply 2020 to 2041*

Leicestershire	2020 to 2041 - road only at % rail-served		
	26%	60%	43%
<i>High Replacement, Forecast Traffic Growth</i>			
New-build (000s sqm)	1,349	729	1,039
Supply (000s sqm)	1,073	1,073	1,073
Balance (000s sqm)	-276	344	34
Additional Land required (ha)	79	NA	NA
<i>High Replacement, Sensitivity Test Traffic Growth</i>			
New-build (000s sqm)	1,427	771	1,099
Supply (000s sqm)	1,073	1,073	1,073
Balance (000s sqm)	-354	302	-26
Additional Land required (ha)	101	NA	7

* Assumes plot ratio of 35%

- 9.31 Analysis of recent applications/consents suggests that the plot ratio (i.e. floor space to overall site size) is around 35% at road-only sites once any 'green' screening or landscaping is accounted for, as set out in Appendix F. This is lower than the 40% seen in developments completed 2012-19 likely to be due to increased landscape and screening matters.
- 9.32 Using the 'high replacement, traffic growth sensitivity' and 60% rail-served scenario, it would appear that Leicestershire has sufficient sites with consents and in the pipeline to accommodate expected demand to 2041 if all capacity was completely used. However, using the 43% rail-served scenario there is a need for 26,000 sqm or 7ha; and at the 26% rail-served scenario, 354,000 sqm or around 101ha of land will need to be brought forward to 2041. This model assumes all capacity is used up which is neither realistic or desirable, since vacancy in the market is necessary to ensure choice and churn for occupiers and market efficiency. A margin for flexibility is set out in Section 10 below.
- 9.33 Given that around 60% of the supply is located around the Magna Park development in Harborough, in order to provide the market with a choice of sites with a suitable geographical spread, it would be prudent to continue bringing forward further sites up to 2041 elsewhere in the county. This is addressed further in the Future Development – Areas of Opportunity, Section 11.

- 9.34 In order to maintain and enhance the competitive position currently enjoyed by the region/sub-region, it is considered vitally important that the market in future is offered a geographical spread of commercially attractive sites available to satisfy individual operator locational requirements. Sites should therefore be brought forward at various locations across Leicestershire at any one time. Related to this conclusion, it is also important that the outputs from the land-use forecasting exercises are not viewed as a maximum level of development or cap.

10 FUTURE WAREHOUSE FLOORSPACE GROWTH SCENARIOS SUMMARY

10.1 This section initially summarises the modelling and resulting forecasts for large warehouse need to 2041; and then identifies the preferred scenarios to test further in terms of their labour market effects (considered later in Section 13).

Completions Trend Model

10.2 The client authorities provided completions data from 2012 which has been filtered to schemes of over 9,000 sqm. Only Blaby, Harborough, Hinckley and Bosworth and North West Leicestershire report any delivery of this magnitude with the majority focused on North West Leicestershire.

10.3 The completions data has been annualised and extrapolated to provide an indication of the future need for this type of accommodation should development trends for the reported period be reproduced going forwards. As set out in Table 45 a total of 2.7 million sqm or 701 hectares is forecast to 2041 (gross completions). High completions in 2016/17 and 2019/20 drive the overall rate.

10.4 This level of forecast need can be compared with a current total supply of 2.0 million sqm, when considering all permitted schemes (Appendix C) plus available units.

Table 45: Forecast Completions 2020 to 2041

	Total 2012/13-19/20		Annual		2019/20-35/36		2019/20-40/41	
	SQM	Ha	SQM	Ha	SQM	Ha	SQM	Ha
Blaby	102,050	27	14,579	4	233,257	62	306,150	81
N.W Leicestershire	586,305	116	83,758	17	1,340,127	264	1,758,916	347
Hinckley & Bosworth	83,770	28	11,967	4	191,474	65	251,310	85
Harborough	128,621	63	18,374	9	293,991	144	385,863	189
Total	900,746	234	128,678	33	2,058,849	534	2,702,239	701

Source: Authority Monitoring Data / GL Hearn

10.5 Supplementing the completions trend is VOA monitoring data which provides a useful sense check. After removing developments in “losses-only” districts to apply a positive growth floorspace requirement, the recent trend data reports a requirement of 1.9 million sqm. All industrial floorspace in these authorities as well as small unit completions will be included in this data. Differences between completions trends and VOA are partly explained by 2019/20 high completions not yet reported by VOA.

Table 46: Industrial Floorspace Trends, 2001/02-18/19 (sqm '000s)

	2001/02	2011/12	2018/19	2002-19 pa	2012-19 pa	2041 (2002-19 pa)	2041 (2012-19 pa)
Leicester City	3,083	2,605	2,439	-38	-24	-796	-498
Blaby	696	676	805	6	18	135	387
Charnwood	1,449	1,279	1,187	-15	-13	-324	-276
Harborough	1,089	1,240	1,324	14	12	290	252
Hinckley and Bosworth	1,158	1,065	1,147	-1	12	-14	246
Melton	457	484	508	3	3	63	72
North West Leicestershire	1,203	1,398	1,726	31	47	646	984
Oadby and Wigston	442	363	339	-6	-3	-127	-72
FEMA	9,577	9,110	9,475	-6	52	-126	1095
FEMA (growth only)						1,134	1,941

Source: VOA Business Floorspace Statistics, GL Hearn

Labour Demand Model

10.6 Oxford Economics has provided forecasts of future labour demand to 2041. These have been used to derive future requirements for B8 Class floorspace. Employment sectors related to strategic warehouse growth have been isolated resulting in a total need of 163,000 sqm to 2041 (40.8 ha) driven by the requirements of North West Leicestershire.

10.7 However, given recent trends and market feedback this is considered to underestimate future needs as:

- It fails to account for replacement demand;
- There are wide variations in employment densities for large warehouses;
- There is a tendency for warehouse jobs to be attributed to other sectors (such as wholesale and retail), as identified later in this report drawing on our analysis of major distribution parks; and
- There is uncertainty regarding econometric techniques for locally unique sectors (constraining locally exceptional growth rates to regional / national performance).

Replacement and Traffic Growth Model

10.8 This land use forecast model is derived from the following key factors relating to new logistics facilities:

- The continual need to build new large scale warehousing to replace existing capacity which has become life-expired (replacement build); and

- The need for additional floor space to handle traffic growth (growth build). This element therefore reflects the long term growth in demand for goods in the wider economy.

10.9 By combining the ‘replacement build’ and ‘growth build’ elements, the total warehouse new-build requirement to 2041 can be calculated. We have also undertaken a ‘sensitivity test’ based on the forecast traffic volumes quoted above for 2041 increasing by a further 15% reflecting faster increases in e-commerce, Brexit and other drivers related to heightened cargo transportation and its resulting floorspace need.

10.10 Based on this forecasting methodology the ‘High Replacement’ scenario calculates a gross new-build of 1.8 to 1.9 million sqm to 2041 in Leicestershire.

Table 47: Forecast New-Build Rates 2020 to 2041 and Associated Land Requirements

<i>Leicestershire</i>	000s sqm			
	2026	2031	2036	2041
High replacement, forecast traffic growth	524	953	1,388	1,823
Low replacement, forecast traffic growth	408	741	1,079	1,418
High replacement, sensitivity test traffic growth	561	1,017	1,472	1,928
Low replacement, sensitivity test traffic growth	445	804	1,164	1,523

Source: VOA, GB Freight Model and Consultant estimations as described

Margin for Flexibility

10.11 It is widely accepted convention in land use planning for employment to use a margin for flexibility. This covers a number of matters:

- To add a safety margin for factors such as delays in some sites coming forward for development which can take up to 5 years for major schemes.
- To generate a contingency factor, providing an additional land buffer so that supply is not too tightly matched to estimated demand, and so that shortages of land do not arise if future demand turns out to be greater than the forecasts, given the uncertainties in the forecasting process,
- It reflects the accepted convention that property markets function most efficiently with a vacancy rate of between 5% and 10%. This allows for churn and choice in the marketplace. Property market analysis for the strategic warehousing sector has indicated a tight market in recent years, both in qualitative and quantitative reporting.

10.12 In line with broader employment land convention, a margin of 5 years is considered appropriate based on completions trends. This margin is applied to the forecast traffic growth and replacement demand

model below. The margin can also be applied to the labour demand model, however given the labour demand model needs figure reported is so substantially less than the other techniques, the exercise is not warranted. The application of a margin to a completions trend is less consistent in employment forecasting particularly when using a gross completions trend (such as here) as the net change (when losses of units are factored in) tends to be lower and represents the functional utilisation of floorspace, thus implying a gross completions trend builds in some headroom by default.

Table 48: Forecast New-Build Rates 2020 to 2041 and Associated Land Requirements including margin (000s sqm) - Leicestershire

Leicestershire	2041 base	5 yr margin	Total
High replacement, forecast traffic growth	1,823	643	2,466
Low replacement, forecast traffic growth	1,418	643	2,061
High replacement, sensitivity test traffic growth	1,928	643	2,571
Low replacement, sensitivity test traffic growth	1,523	643	2,166

Source: GLH

- 10.13 As shown in Table 48 above the inclusion of a margin results in a total need of between around 2.1 million and 2.6 million sqm.

Model Summary and Preferred Scenarios for testing

- 10.14 Table 49 draws together the various models outputs, including margin where applicable.

Table 49: Summary of modelled scenarios

Model	2020-2041 Needs 000s sqm	Comments
High replacement, central traffic growth	2,466	Reflects accepted traffic growth and new technology needs in stock replacement, with margin.
Low replacement, central traffic growth	2,061	Reflects accepted traffic growth and assumes longevity in stock, with margin, with margin.
High replacement, sensitivity test traffic growth	2,571	Increases traffic growth and assumes new technology requires stock replacement, with margin.
Low replacement, sensitivity test traffic growth	2,166	Increases traffic growth and assumes longevity in stock, with margin.
Completions trend	2,702	Reflects large warehouse floorspace delivery over the 2012-19 period, projected forwards.
VOA trend	1,941	Models growth only districts 2011-18 projected forwards, all warehouse and industrial stock including losses
Labour demand	-50	Assumes baseline model for all sectors
Labour demand sensitivity	163	Assumes baseline model for warehouse and related sectors for growth only districts

Source: GLH

10.15 Taking into account the above, the following scenarios are recommended for testing in terms of their employment (job) implications as they represent the upper and lower extremes of the forecasts for future need that are considered reasonable in the context of the drivers set out in Section 2, after discounting the implausible labour demand modelling:

- **Low growth scenario: Low replacement demand, central traffic growth**
- **High growth scenario: High replacement demand, higher sensitivity traffic growth**

10.16 In terms of developing an overall recommended preferred scenario for planning policy development, the correlation between the completions trend (2.7m sqm) and the high replacement demand with higher sensitivity test on traffic growth plus margin (2.6m sqm) provides an indication of a suitable level of development to plan for.

10.17 In testing this further, the 2014 Strategic Distribution Study forecast the total new-build rate to be 762,000 sqm (of which growth build represented 87,000 sqm) for the period 2014 to 2021. This equates to around 109,000 sqm per annum total. By comparison, the 2014/15 to 2018/19 completions identified an average of 96,000 sqm per annum. Strong completions in the 2019/20 monitoring period increase the average to 156,000 sqm since 2014/15, with the overall average for data provided 2012/13 to 2019/20 being 129,000 sqm, being around 15% higher than the

Replacement & Traffic Growth model. This does highlight issues in the use of relatively short run completions trend data, but provides a broad sense check that the forecasting models are useful and reliable.

- 10.18 Overall, the use of the Replacement & Traffic Growth model for forecasting appears most reasonable going forwards which in this 2020 study equates to 99,000 sqm per annum rising to 122,000 with a margin for flexibility. The **high replacement demand, higher sensitivity traffic growth figure of 2,571,000** is therefore recommended for planning policy development.

Forecast Demand Preferred Scenario and Future Site Supply

- 10.19 Site supply has been tested against the traffic growth and replacement demand models set out above.
- 10.20 Scenarios have been considered whereby at least 60% of future large-scale new-build in Leicestershire and the wider East Midlands is located at a rail-served site (SRFI) by 2041. Given the increasing importance of the de-carbonising agenda, this should be considered as the preferred option going forward for planning purposes. However to allow for a process of movement towards this position over time, a mid-point between the 26% (the national rail freight demand forecasts undertaken for Network Rail assumed that 26% of future new-build would locate at a rail-served site) and 60% scenarios, being 43%, has been considered as the most deliverable.
- 10.21 Table 50 sets out the forecast rail-served new-build need to 2041 for the mid-point (43%) with the anticipated site supply including sites with an outstanding consent and future site considerations. Taking into account a margin for flexibility, derived from 43% of total margin, this shows a shortfall of 723,000 to 768,000 sqm, which when converted into land at the required plot ration of 0.25 results in additional land requirement of between 290 and 307 ha depending on the sensitivity applied, with the higher rate recommended to be used for planning policy development.

Table 50: Rail - Forecast Demand and Site Supply - Leicestershire

	2020 to 2041 - 43% rail-served	
	<i>High Replacement, Forecast Traffic Growth</i>	<i>High Replacement, Sensitivity Test Traffic Growth</i>
New-build (000s sqm)	784	829
Supply (000s sqm)	338	338
Balance (000s sqm)	-446	-491
Balance (000s sqm) inc margin	-723	-768
Additional Land required (ha)*	290	307

Source: MDS Transmodal

*Plot ratio of 0.25 assumed

- 10.22 As noted previously, the shortfall could essentially be fulfilled through the *Hinckley National Rail Freight Interchange (NRFI)*, a SRFI being promoted by Tritax Symmetry adjacent to Junction 2 of the M69 and alongside the Leicester to Nuneaton main line. The integral intermodal terminal is planned for the site serving around 650,000 square metres of large scale floorspace at ground level (with a further 200,000 sqm of mezzanine). Should the DCO be granted, the forecast shortfall 2020 to 2041 for Leicestershire would effectively be met.

Non-Rail Served Sites

- 10.23 Having accounted for forecast demand and expected supply at Strategic Rail Freight Interchanges in Leicestershire, Table 51 shows the consequent forecast demand 2020 to 2041 for floor space at non rail-served (road only) sites, including a margin for flexibility being 57% of total margin.
- 10.24 As Table 51 sets out, using the '43% mid-point' rail-served scenario, around 95-112 ha of land will need to be brought forward 2020 to 2041 with the higher amount recommended to be used for planning policy development. Given this need it would be prudent to continue to bring forward further sites, to make up the shortfall. This is addressed further in the Future Development – Areas of Opportunity section.

Table 51: Land Required at Road Only Sites and Potential Site Supply 2020 to 2041

	2020 to 2041 43% road-served	
	<i>High Replacement, Forecast Traffic Growth</i>	<i>High Replacement, Sensitivity Test Traffic Growth</i>
New-build (000s sqm)	1,039	1,099
Supply (000s sqm)	1,073	1,073
Balance (000s sqm)	34	-26
Balance (000s sqm) inc margin	-333	-393
Additional Land required (ha)	95	112

Source: MDS Transmodal

*Plot ratio of 0.35 assumed

- 10.25 As noted previously, the supply assessment here excludes sites being brought forward that are pre-let to occupiers, and is focused on available sites able to meet newly arising need. Including the additional 540,000 sqm of pre let would suggest that there is no additional road based need 2020 to 2041 which in reality is unlikely to be the case.

Key risks and assumptions

- 10.26 The key assumptions are implicitly covered in the method sections but revisited here:

Low growth (central traffic model)

- That warehouse units need to be replaced after 40 years of operation.
- That traffic growth occurs in line with the central forecasts

High growth (traffic higher sensitivity)

- That warehouse units need to be replaced after 30 years of operation.
- That traffic growth occurs in line with a 15% increase on central forecasts which allows for faster growth in tonnage shipped which is assumed to be driven by e-commerce requirements and potential stockpiling related to Brexit and COVID-19.

Completions trends

- That the 2011/12 to 2019/20 is representative of longer term need.

- 10.27 The key risks to this approach are identified as:

- 10.28 **COVID-19:** This may lead to a short to medium term recession, particularly after the end of furlough support, that reduces the overall volume of goods required in the UK particularly for comparison goods and reduces floorspace needs. However, it could equally lead to greater rates of stock holding to mitigate for potential supply chain shortages, therefore increasing large warehouse requirements.

- 10.29 COVID-19 has certainly increased e-commerce trends. However, this is more likely to put pressure on last mile facilities rather than large NDCs, since e-commerce affects the distribution model and point of delivery rather than total goods sold (i.e. shift from shop to delivery).
- 10.30 **Brexit** may also affect the warehousing sector. A reduction in labour supply will put pressure on automation capabilities. This in itself could lead to warehouse efficiencies which cuts down total footprint through stacking / mezzanines.
- 10.31 **Replacement demand** issues are explored in more detailed in Section 13, which notes there is some evidence that more recently built warehouses post 1990 have a longer lifespan or at least are able to be repurposed for alternate similar uses. This may reduce the replacement demand component of future need. At present evidence suggests that the higher rate associated with 30 years replacement is most appropriate, given the fast-changing needs of the sector and the overall correlation of this model with recent completion trends. However, towards the 2030 period and beyond, the rate of additional need may begin to slow down as stock lifetime extends to 40 years or more. Given the fast-changing nature of the sector in general the role of monitoring (Section 12) is important.
- 10.32 **Plot ratios** are used to indicate the additional land required to accommodate the sqm forecast need and historically have been assumed at 40% of floorspace to land. This is broadly maintained on average for completions during the 2012-19 period. However, industry feedback and evidence of the most recent applications and permissions (Appendix F) identifies a move towards greater land take to deal with landscaping requirements and green screening. Further standing space may also be needed for vehicle charging in the future subject to future technologies. Biodiversity offsetting may also increase red line boundaries. Our future requirements model assumes 35% plot ratio for road based sites and 25% for rail-served, taking account of an additional area required for the rail head itself and additional landscaping.
- 10.33 **Completions:** the 2012/13 to 2019/20 period has seen 2 years of substantial completions – without the inclusion of 2019/20 the average annual completions rate used, and accordingly the need forecasted in this model, would be substantially less. In recent years the build out has been high in North West Leicestershire, as East Midlands Gateway and Distribution Centre have provided major development opportunities broadly taking over from Magna Park's resource build out through the 1990s/2000s. The planning pipeline trajectory assessment of some 1.8 million sqm (table 16) suggests that the next decade may equal or potentially exceed the recent past in completions,

responding to demand generated by new technologies, distribution methods and trading platforms. This could later lead to a slowdown in the 2030s as the market stabilises. On balance this suggests that the current completions trend is reasonable to assume for the medium term but it isn't expected continue at this level in the long term to 2041.

- 10.34 **Recommendations for planning policy:** long term modelling carries inherent risks in its accuracy; a triangulation of techniques has been used here to generate a reasoned approach. The highest rate (completions trend) has not been recommended but the highest of the traffic growth models has. This figure is not considered a maximum or minimum as market requirements may change over time. There is a need for a geographical distribution of sites to generate choice and balance, as explored in section 11.

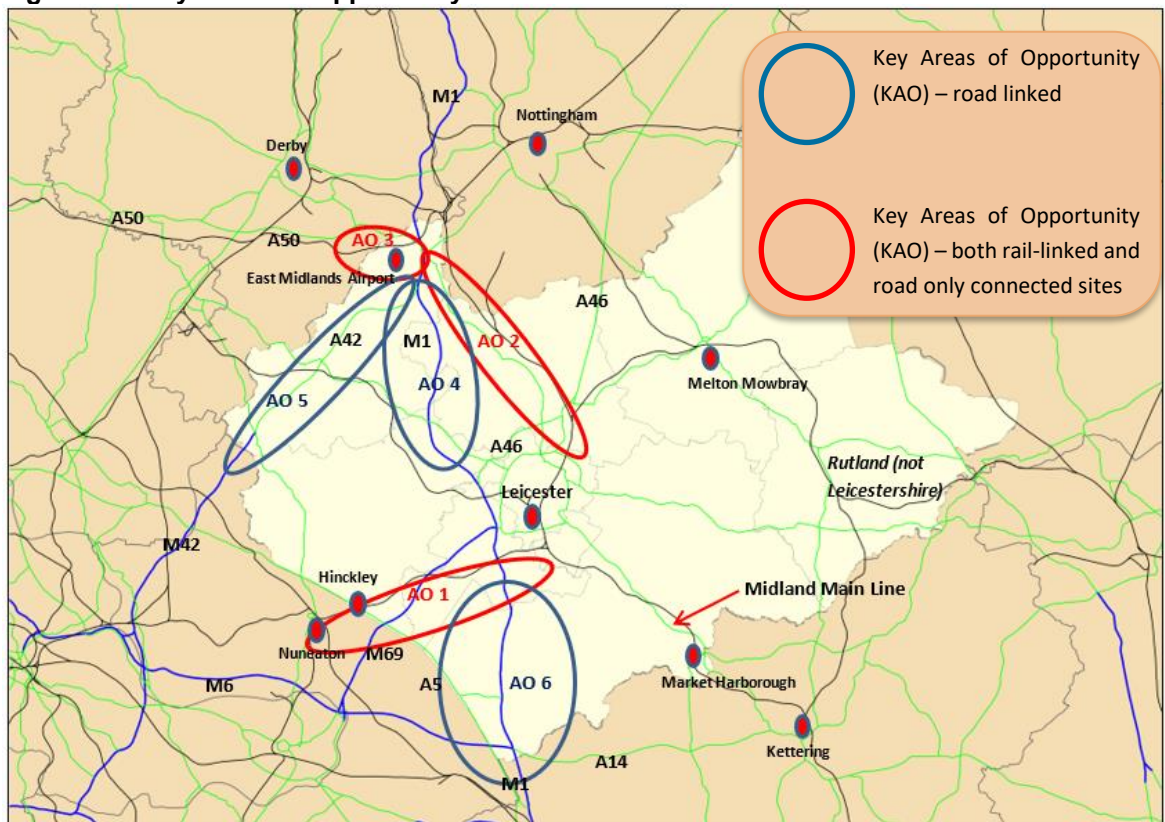
11 FUTURE DEVELOPMENT – AREAS OF OPPORTUNITY

- 11.1 Given the shortfall in land required to accommodate floorspace need to 2041 identified in the land-use forecasts section, we have identified general broad areas across Leicestershire where new strategic logistics sites should be located (Areas of Opportunity). These broad areas would be suitable to house sites of the size, scale, location and transport connectivity required by the market. Note that this is a high-level exercise where general broad areas are identified; the analysis does not consider, assess or recommend specific sites or consider other planning constraints (e.g. flooding, highway capacity) that would inform the allocation of sites in Local Plans or wider policy aspirations such as decarbonisation.
- 11.2 The following criteria have been used to identify the broad areas of opportunity:
- Good connections with the strategic highway network;
 - Good connections with the railway network;
 - Appropriately located relative to the markets to be served; and
 - Is accessible to labour and located close to areas of employment need.
- 11.3 Good connections to the strategic highway network are defined as being an area served by motorways and long-distance dual carriageways, or within a reasonable distance of such routes by non-strategic highways suitable for conveying HGVs. Areas are also deemed to meet this criteria if they are to be served by such routes given the delivery of the known highway infrastructure upgrades outlined in Section 2.
- 11.4 Good connections to the railway network are defined as being:
- Served by a railway line offering a generous loading gauge (minimum W8)¹² or those routes which are likely to be upgraded in the future;
 - Served by an electrified railway line or within a short distance of an electrified railway line, or served by a route which is likely to be electrified over the long term; and
 - Served by a railway line providing connections to major ports of entry (e.g. Felixstowe, Southampton, Folkstone/Channel Tunnel etc.) and key domestic destinations (e.g. Scotland) which are reasonably direct or avoids the need to use circuitous routes.
- 11.5 Given the expected railway enhancements described in Section 2, for Leicestershire this effectively means being served by the following corridors:
- Midland Main Line Market Harborough to Trent Junctions via Leicester; and
 - Peterborough to Nuneaton via Syston, Leicester and Wigston

¹² For intermodal rail freight, W8 is the minimum clearance required. W9 or better preferred (and was referred to in the 2014 Strategic Distribution Study), though modern low deck wagons recently developed are perfectly adequate for moving tall containers on W8 routes.

- 11.6 Broad areas which meet all of the criteria have been identified as 'Areas of Opportunity' likely to be suitable for accommodating SRFIs and road-only connected strategic logistics sites.
- 11.7 Those areas meeting all of the criteria with the exception of 'good connections to the railway network' have also been identified; these are potential 'Areas of Opportunity' suitable for road-only based strategic distribution.
- 11.8 The 'Areas of Opportunity' are identified as below and illustrated in Figure 15 following:
- Areas of Opportunity – SRFIs and road-only connected strategic logistics sites:
 - Area 1 – between Leicester and Hinckley, broadly following the M69 and Leicester-Nuneaton train line transport corridors and part of M1;
 - Area 2 – between Syston and Ratcliffe-on-Soar, broadly following the A6, M1 and Midland Main Line transport corridors, and incorporating Loughborough; and
 - Area 3 – between Ratcliffe-on-Soar and Castle Donnington/border with Derbyshire, broadly following the A50, M1, the Midland Main Line and the freight only line connecting the Midland Main Line (at Trent Junctions) to the Derby-Birmingham train line.
 - Areas of Opportunity – road only connected strategic logistics sites:
 - Area 4 – to the north west of Leicester, broadly following the M1 and A511 transport corridors, incorporating Coalville and Shepshed;
 - Area 5 - the A42 transport corridor, incorporating Ashby-de-la-Zouch; and
 - Area 6 – M1 corridor south of Leicester.
- 11.9 These areas capture the key strategic road network and include the majority of the existing distribution parks. Areas 1, 2 and 6 are less well served particularly nearer to Leicester (i.e. Blaby and Charnwood).
- 11.10 It is noted that the figure shows that the majority of North West Leicestershire is within one or other Area of Opportunity, due to the multi directional accessibility, however the actual potential is much more limited however once basic constraints are added.

Figure 15: Key Areas of Opportunity



NB: Boundaries of key areas are not definitive and are shown for indicative purposes only

Phasing and Deliverability

11.11 We do not consider there to be a hierarchy of Areas of Opportunity (all areas equally meet the criteria listed). However, in order to maintain and enhance Leicestershire's competitive position, it is important that the market in future is offered a geographical spread of commercially attractive sites across Leicestershire in line with the build-out trajectory of existing supply available to satisfy individual operator locational requirements. Different occupiers have differing needs - cargo origins, location of end users, proximity to labour markets. So land supply should reflect these differing locational requirements. Future provision should not be concentrated or focused on one particular Area of Opportunity. For this reason, it will be important that:

- Local plans and allocations ensure a supply of vacant plots at strategic sites in at least two of the Areas of Opportunity simultaneously ideally across road and rail; and

- New land should initially be allocated in those Areas of Opportunity where there is an identified under-supply of strategic sites, ahead of those Areas of Opportunity which are currently well provided for.
- 11.12 It will be important that an appropriate system is in place to monitor at county level progress in site allocation, consents and take-up over time at the county level (see section 12). This will then allow further strategic sites to be brought forward in those existing well provided for Areas once current supply has been exhausted, thereby maintaining the required geographic spread. Recent planning consents around Magna Park (totalling around 0.6 million square metres – see site supply analysis, section 6) suggests that Area 6 is, currently, reasonably well provided for in terms of strategic sites. The site supply analysis also noted that around 60% of road-only sites in Leicestershire are located around Magna Park in Harborough. As noted, this should not preclude future allocations in this Area, albeit in the later part of the timeframe considered by this study (post 2031).
- 11.13 It is recognised that the Areas of Opportunity identified include a number of existing distribution parks and supply including Bardon Hill, East Midlands Gateway and East Midlands Distribution Centre which are all located in North West Leicestershire.
- 11.14 That notwithstanding, these units may still fail to meet the increasingly demanding requirements of modern prime distributors, resulting in the need for new units and sites to be considered. As indicated in paras 117-118 of the NPPF, the re-use of existing land through the refurbishment of units should be encouraged. Monitoring over the coming 5-10 years will provide more certainty on longevity and replacement demand matters including any realistic allowance to be applied for recycling of expired units or plots in future.
- 11.15 Proximity to labour markets continues to be a critical driver for warehousing activities. Analysis in Section 14 of this report suggests that Leicester City, with the largest population in the county, provides a relatively low proportion of warehousing labour to major parks elsewhere in the county.
- 11.16 There may be an opportunity for future development to take advantage of this labour pool particularly in Areas of Opportunity 1 and 2 as indicated in Figure 15. Area 1 broadly includes coverage of a proposed new junction on the M1, as set out in the Leicester and Leicestershire Growth Strategy 2018. If funding is secured, this may generate a new focal point for warehousing development that can directly access the Strategic Road Network and the City of Leicester's labour supply.

11.17 When new local plan allocations are being considered, a criteria-based approach should be adopted when identifying and assessing potential new sites for large warehouses. Based on the analysis throughout this document and from the previous SDS, sites considered to be appropriate for hosting strategic distribution are those which meet the following criteria:

- Good connections with the strategic highway network – close to a junction with the motorway network or long-distance dual carriageway. Motorway/dual carriageway junctions and the approach routes should have sufficient network capacity;
- Appropriately located relative to the markets to be served;
- Offers modal choice; is served by a railway line offering a generous loading gauge (minimum W8), available freight capacity and connects to key origins/destinations directly without the requirement to use long circuitous routes;
- Is sufficiently large and flexible in its configuration so that it can accommodate an intermodal terminal and internal reception sidings;
- Is sufficiently large and flexible in its configuration so that it can accommodate the range of sizes of distribution centre warehouse units now required by the market;
- Is served from an electricity supply grid with sufficient capacity to permit the charging of large fleets of battery-electric freight vehicles simultaneously, or part of the electricity supply grid which can be upgraded (network reinforcement) relatively easily and at a reasonable cost;
- Is accessible to labour, including the ability to be served by sustainable transport, and located close to areas of employment need; and
- Is located away from incompatible land-uses.

11.18 Given that it is unrealistic in both planning and logistics demand terms to expect all new large scale distribution activity to locate at a directly rail-served strategic logistics site, appropriate road only sites can therefore be considered ones which meet all the other criteria outlined above bar the modal choice requirements (i.e. third and fourth criteria). It is also noted that ecological surveys alongside other studies e.g. flood risk, will also be required to ensure that potential sites are suitable for hosting large warehouses.

11.19 In order to ensure that there is a sufficient pipeline of sites (across the Areas of Opportunity identified), new land meeting the criteria outlined above should be identified and allocated in the following sequential order, namely:

- The extension of existing strategic distribution sites, both rail-served and road-only connected. For existing rail-served sites, this should only be permitted where there is spare capacity available at the existing rail freight terminal or capacity can be enhanced as part of any extension. Likewise, site extensions should only be permitted where there is adequate road capacity serving the site and at adjacent motorway/dual carriageway junctions or capacity can be enhanced as part of any extension;

- In circumstances where rail-served sites cannot be extended, local plans should consider satellite sites (which shall be located close to the existing strategic distribution sites) which meet the site selection criteria and could utilise the existing rail freight infrastructure at the core site. A prerequisite for satellite sites to be considered should be spare rail capacity being available at the core site rail terminal or capacity that can be enhanced as part of any satellite development;
 - Identifying suitable new strategic distribution sites on previously developed land which meet the site selection criteria; and
 - Identifying suitable new strategic distribution sites on greenfield land which meet the site selection criteria.
- 11.20 To enable the potential of strategic distribution sites to be realised, the following uses should not normally be permitted at strategic distribution sites;
- Class E (former B1) uses (unless ancillary)
 - B2 General industrial (unless ancillary)
 - Un-related smaller units.
- 11.21 Back-office functions and telephone call-centres related to the fulfilment of orders from the attached warehouse or product returns from customers to that warehouse should be considered as ancillary
- 11.22 It is acknowledged that the principal use of strategic logistics sites will be for B8 uses. However, 'just in time' production and processing units with substantial elements of storage and distribution (30%+ for production and processing) should be permitted. It is also relevant that there are many more large units which have B2 and B8 activities being undertaken within a single building which also offer a significant number of employment opportunities. Other uses will not be acceptable on strategic logistics sites.
- 11.23 One of the functions of strategic logistics sites will be the ability to offer larger plot sizes to be able to accommodate the large footprint buildings increasingly required by the market. It would therefore conflict with their wider objectives if smaller units were developed which compromised the size of available plots. It is therefore recommended that a minimum unit size of 9,000 square metres be imposed to address this.
- 11.24 In order to complement the above, from a market perspective it would be beneficial for local plan policies to identify the characteristics and expectations for strategic logistics sites to inform developers/occupiers. These should include:
- 24/7 unrestricted operating hours (see Section 16 also);
 - Good road and rail freight access (for those sites which will be rail-served);

- The ability to deliver high-bay warehousing at least 20m height;
- Preferred plot ratios being a minimum of 0.25 for rail and 0.35 for road and building sizes of over 9,000 sqm;
- Capacity of the electricity grid connections, stance on renewable energy generation;
- Servicing requirements and HGV parking standards (see Section 15 also);
- Phasing of infrastructure and periphery landscaping requirements;
- Green transport initiatives and public transport expectations; and
- Noise/lighting expectations.

11.25 The advice presented in the Leicester and Leicestershire SDS covering the 'Duty to Co-operate' requirement and the need to take forward land use strategies and allocations on a long-term collaborative basis remains valid (Section 4 – SDS Final Report). This included the formation of a strategic distribution sites selection task group to identify and discuss opportunities and determine the most suitable sites to bring forward in local plans.

11.26 For the purposes of this report, the floorspace needs and areas of opportunity are all targeted at strategic warehouses of 9,000 sqm and above. Such facilities are more typical to the National Distribution Centre role that Leicestershire provides as part of the Golden Triangle.

11.27 However, it is recognised that there is an increasing need to provide last mile distribution facilities for sub-regional and local distribution. These facilities typically range from 25,000 to 50,000 sqft (2,300 to 4,600 sqm) or where larger would not normally exceed 9,000 sqm. As set out in section they 16 can also be much smaller when fitting into the tighter grain of urban areas. The requirement for such facilities is likely to increase going forwards with a greater emphasis on online retailing.

11.28 The role of these facilities is typically to receive HGV shipments for cross docking into delivery LGVs which serve a distribution area. Last mile facilities typically locate on the edge of urban areas where access to both the SRN and local road network is good and journey distances are suitable for electric vehicles. DPD's 65,000 sqft facility on Kirby Road, Glenfield west of Leicester is understood to play such a role. The increased demand for more specific time slots and electric vehicles in dense urban areas promotes smaller facilities with all electric or bicycle delivery (see section 16).

12 MONITORING

- 12.1 In order to effectively and consistently monitor warehousing and logistics sector development, it is recommended that data monitoring and collection are actively pursued beyond the individual authority level. The most useful area to be considered would be the Leicester and Leicestershire authorities given the existing working relationships between authorities and the nature of the requirements of this study. Consideration could be given to a longer list of authorities (being those in Table 18, the Wider Golden Triangle area) establishing a significant sub regional data pool with broader coverage particularly given the logistics parks at DIRFT, Hams Hall, Northampton Gateway etc,
- 12.2 In the first instance the roles and responsibilities for this need to be defined with a particular organisation and/or individual collecting and managing data. The individual planning authorities will need to feed in data to the appointed managing organisation.
- 12.3 The following data sets are recommended for collation, the majority of which should be obtainable through the development control officers or planning policy teams:
- Collate existing supply data in terms of allocations and permissions (information in section 6 / Appendix C of this report provides a starting point being March 31st 2020 monitoring)
 - Identify new applications for sites with units over 9,000 sqm + of B2/B8 noting:
 - Validation date;
 - Permitted date;
 - Completed date;
 - Whether allocated / unallocated site;
 - Whether Rail / Non rail serving;
 - Whether in an opportunity area or not;
 - Whether Greenfield / brownfield type and if brownfield the nature of previous use (enabling a record of refurbishment where relevant)
 - Any known employment data provided with applications
 - Building heights
 - Ancillary floorspace where known
 - Any information available regarding size and type (speculative, pre-let) of units
 - Any applications involving losses of existing floorspace of at least 9,000 sqm+ B2/B8 use
 - Record completed SQM floorspace (i.e. completions) - including mezzanine¹³ - and Ha of plots, with sqm the primary measure of the two.

¹³ Mezzanines play an increasingly central role in logistics functions and should be able to contribute to overall floorspace need

- 12.4 The completed sqm of floorspace is considered the single most important aspect of the monitoring to enable a record of total new floorspace added. The overall need figure of 2,571,000 should be used for planning policy monitoring comprised of the separate rail (1,106,000 sqm inc margin) and road (1,466,000 sqm inc margin) components. The current proportion of rail accessible warehousing is considerably below 43% and may not achieve the expected levels of take up until later in the study period. Flexibility should therefore be applied to the timescales for road / rail split set out in this report (tables 72 & 73 for example).
- 12.5 The gross gains (completions) are the monitoring target rather than net change from the baseline stock position (reported as a baseline position of 2,144,000 sqm March 2020). This is as the model assumes some loss of older stock - being the replacement demand component.
- 12.6 It is acknowledged that the consistency between modelling methods / dates and monitoring dates are imperfect, as the preferred needs model is calendar year (driven by traffic growth and VOA data, although uses a market assessment dated April 2020) and authority monitoring is financial year. For ease, it is recommended that the needs monitoring is aligned to the financial monitoring period for that year ie 1/4/2020 to 1/4/2041. A further complication relates to the exclusion of pre-lets (supply not yet completed with a committed occupier as of April 2020) from the preferred needs modelling methodology. Therefore supply for pre-lets and its completion should be excluded from contributing to the overall need identified here, whilst still being recorded by authority monitoring reports.
- 12.7 If an online system is developed for collecting information it may be possible for officers to enter the data at the point of receipt, for example, at the same time they upload to the local planning portal. Otherwise, it is recommended that the data is collected quarterly to provide a useful tool for considering large scale applications across the county and informing policy review on an ongoing basis.
- 12.8 Given the importance of replacement demand unit requirements in assessing future needs the monitoring of any losses or refurbishments should be reported. However, there may be instances where losses are not readily monitored through the planning system depending on the original permission and what works might be needed to change the unit's operation. Permitted Development Rights may not be monitored completely. The authorities may benefit from site surveys of major parks on annual or alternate years to maintain a register of site activity. It may also be possible to pursue this monitoring through VOA data records.

- 12.9 It would also be useful for officers to understand the marketplace in terms of take-up of units, net absorption (total additional occupied space in a year after new occupants and lease breaks) and availability across Leicester and Leicestershire and possibly across both the East and West Midlands. This data is normally accessed via paid-for systems such as CoStar or EGi Radius. Consultants could provide this for a limited fee on a quarterly or less regular basis. A number of large agents also produce regular reports on the state of the regional industrial / warehouse markets which are published free of charge.
- 12.10 In addition, it may be useful to have a greater degree of engagement with the private sector. Industry events such as a short breakfast briefing could be held bi-annually with development industry (agents, developers, consultants) to discuss the state of the Leicestershire / Golden Triangle warehousing market. Attendees could be invited to make short presentations on a topic or their views of the market and officers providing a similar perspective.

13 FLOORSPACE SCENARIO IMPLICATIONS ON EMPLOYMENT

13.1 This section of the report considers the labour market implications of the low and high preferred scenarios, those being:

- **Low scenario:** Low replacement demand, central traffic growth: 1,418,000 sqm to 2041 (excluding margin)
- **High scenario:** High replacement demand, higher sensitivity traffic growth: 1,928,000 sqm to 2041 (excluding margin)

13.2 As the margin is intended to provide choice, flexibility and vacancy it is assumed that this would not be built out in full, however the implications are considered below.

13.3 The commentary on this section on employment and related housing implications should be viewed as indicative and used in conjunction with other studies and assessments on employment, population and housing change including the government's standard methodology.

Job Creation

13.4 The first step is to assess employment creation through warehousing growth.

Employment Densities

13.5 For large scale warehousing employment, the density of 95 sqm per FTE employee is assumed as a starting position. This aligns with the 2015 HCA Density Guide for NDCs. It also aligns with the 2018 Prologis study of their occupiers (see section 14). It is of note that in the Prologis study for occupiers over 9,000 sqm the density decreases to 100 sqm per employee and for units of over 20,000 sqm the density decreases to 110 sqm per employee. In some cases, warehouses are reported to have a density of up to 350 sqm per employee.

13.6 For a number of reasons, it is expected that employment densities at large scale warehouses will decrease in the future. For example, Brexit is likely to decrease the available labour market supply in a sector where competition is already high. Such a shortage of labour is likely to encourage automation particularly as the size of the largest units continues to rise.

13.7 Engagement with stakeholders suggests that average employment densities could fall by 50-100% due to efficiency gains over the next twenty years. A 50% improvement in efficiency by 2041 would result in an employment density of 143 sqm per employee. A mid-point of the current and potential densities would be 119 sqm per employee and is used as an average guide for future development

across the period as a whole, but that anything up to 143 sqm could be realistic given the increasing scale of units.

Traffic growth and replacement demand employment

- 13.8 As purpose-built large-scale warehouses were developed from the late 1980s onwards through to the 2000s, the older facilities subsequently vacated by occupiers were demolished and the land re-occupied. In many cases this was for non-employment uses (such as housing) or other employment uses not related to the logistics sector (e.g. retail).
- 13.9 This was principally due to older facilities often being physically obsolete or being poorly located for modern logistics facilities (e.g. close to residential or accessed by unsuitable roads). In these circumstances, new-build warehousing was, in-part, a direct replacement for the floorspace capacity subsequently demolished elsewhere.
- 13.10 Likewise, existing staff either directly transferred to the new replacement facility or left the logistics sector and were replaced on a one-for-one basis. Employment growth was therefore a function of any resultant net increase in floorspace (the growth build element).
- 13.11 However, warehousing developed since the 1990s which is now being vacated is in a different position. These buildings are generally in good physical condition (albeit some fixtures such as cladding, insulation and life-expired electrical systems will often need replacing) and are normally well-located, being on purpose-built industrial estates and near to motorway junctions.
- 13.12 However, their size and configuration often means many of them are now unsuited to occupiers moving large volumes of consumer cargo. This reflects a number of trends in the requirements for new industry stock including:
- Heights moving from 10-12 m to 15-21m. Automation can allow operating heights of 22m to 30m above the reach of a forklift truck¹⁴ with significant mezzanine operations. Proligis DIRFT 535 unit is 21m high.
 - Automation has a high-power requirement which will require a new or significant refurbishment of existing units.
 - Diminishing labour availability due to competition and the potential contraction of European labour due to Brexit means automation and future proofing is essential for many operators.
- 13.13 Older warehouses have therefore become increasingly functionally obsolete, and subsequently difficult to let to many occupiers in their current form. In order to attract more modern and

14

<https://www.avisonyoung.co.uk/documents/38901/59345308/The+rising+warehouse+-+man+and+machine.pdf/5f2b30ae-94bb-482f-b2f1-11390698c884>

technologically advanced warehousing operators and maintain a competitive advantage there needs to be an adequate supply of the most modern facilities.

- 13.14 Notwithstanding, it is often not financially viable to redevelop units and second-hand rental values can continue to be achieved therefore owners are not prepared to sanction the demolition of what are otherwise physically sound buildings. They may also be in locations not suited to residential for example, if adjacent or within wider distribution parks. It is of note that an estimated 80% of Leicestershire's warehousing stock has been delivered since 1990 with a considerable volume of Magna Park developed out through the 1990s.
- 13.15 In order to continue generating income from vacated warehouse units, owners have often sought to re-structure them for other uses during any post-occupancy refurbishment. This can include a range of approaches including dividing what was hitherto one building into multiple units for re-letting e.g. a 25,000 square metre warehouse could be divided into 4 x 6,250 square metre units. These multiple units will then be re-let for smaller scale storage, general industrial usage, business-to-business retail (e.g. cash and carry, building trade) or low-level manufacturing.
- 13.16 It is recognised that older units built since the 1990s and more so since 2000 onwards may increasingly see a tendency towards refurbishment and re-use for distribution, particularly where located in prime distribution parks. It is of note for example that an estimated 80% of Leicestershire's warehousing stock has been delivered since 1990 (see table 10) with a considerable volume of Magna Park developed out through the 1990s. The ability for such units to contribute to the demands of modern distribution needs should be monitored (see section 12) and inform future updates of modelled need, particularly as some of these units will shortly be reaching a 30 year life span. This will influence the rate of replacement demand, which could move from the recommended 30 year assumption to 40 years as well as influence the expectation of sites being recycled rather than always requiring new land.
- 13.17 Overall it is likely that larger units even where no longer facilitating prime distribution are increasingly likely to continue to host employment (potentially still in the logistics sector, albeit not necessarily in large scale warehousing). In such circumstances, the 'replacement' element of any subsequent new-build will generate employment growth, rather than just the net increase in floor space which is theoretically re housing occupiers needing new space.

- 13.18 Consider the 'High replacement, higher sensitivity traffic growth' scenario for the land use forecasts, requiring 1,928,000 sqm to 2041. We would expect, as a starting point, the 'growth build' element (net floorspace increase) to generate new jobs at around 95 sqm per full-time equivalent (FTE) as per density A in Table 52.
- 13.19 The 'replacement build' component employment generation is considerably less certain. As noted the principle of replacing old for new stock suggests that there would be no overall net gain in employment as occupiers move from old to new stock – this would in fact decrease with falling densities. The matter of net gains relies therefore on the future use of the older stock being replaced as it falls out of primary strategic distribution. It is estimated that around 50% of stock being replaced will continue to host some form of employment – monitoring over time will provide greater insight into this rate. The 50% estimate is based on evidence that 70% of stock requiring replacement under the 30 year model (pre 2010 units) are based in Harborough (the majority, being 50%) and in North West Leicestershire (20%) (as set out earlier in table 10). If we assume that most, but not all, of these units are retained for employment, whereas few units in other authorities are, then 50% is a reasonable approximation. Under this assumption the density for the replacement element employment is 190 sqm per employee (being half 95 sqm per employee). For ease it is assumed that employment in the replacement demand occurs at the original rate and continues in the warehousing or similar sector.
- 13.20 Table 52 reports the modelled employment outcomes based on the above assumptions being:
- The traffic growth (net gain) element will generate 1,600 - 2,000 jobs under the central scenario and 2,500 to 3,100 jobs under the higher sensitivity scenario.
 - The replacement demand element is estimated to generate 3,600 – 6,400 jobs under the low replacement scenario and 4,800 to 8,500 jobs under the high scenario depending on densities. This includes a fall in employment for those 're occupying' new replacement demand premises at a lower density than in older stock. There is less certainty regarding employment generation for this element.
 - The margin could account for an extra 5,100 – 6,400 jobs. Given the role of the margin is to allow for choice, flexibility and vacancy it is not realistic that this element would be developed in full. For the purpose of this exercise it is assumed that 50% of the margin is developed and it is assumed that the margin is all net growth although this could fall by around 1,500 jobs if replacement demand is a driver at the same rate as total need.
 - In terms of indirect and induced employment we assume a multiplier of 1.25. This takes the HCA Additionality Guide (Fourth Edition, 2015) average composite multiplier for all interventions / effects at the sub regional level. Displacement is assumed to be dealt with through the replacement demand model and leakage considered in the FEMA analysis that follows. We note the potential for double counting as it is likely that indirect supply chain employment generation is likely to be captured in part in replacement demand occupiers – for example HGV / LGV

automotive repair occupiers at former warehouse units. As such the indirect employment figures should be treated with caution.

Table 52: Scenario employment generation

Type	TG central (1)	TG high (2)	RD low (3)	RD high (4)	Total low (1+3)	Total high (2+4)	Margin @50%	Total low + margin	Total high + margin
Base floorspace (sqm)	203,000	308,000	1,215,000	1,620,000	1,418,000	1,928,000	321,695	1,739,695	2,249,695
95% GEA:GIA (sqm)	192,850	292,600	1,154,250	1,539,000	1,347,100	1,831,600	305,610	1,652,710	2,137,210
Employment density A	95	95	190	190	-	-	95		
Direct employment generated A	2,030	3,080	6,395	8,526	8,425	11,606	3,217	11,642	14,823
Employment density B	119	119	236	236	-	-	119		
Direct employment generated B			-2,450*	-3,267*					
Indirect employment A	1,624	2,464	3,625	4,833	5,249	7,279	2,754	7,823	9,871
Indirect employment B	508	770	1,599	2,132	2,106	2,902	804	2,106	3,706
Total employment A	406	616	906	1,208	1,312	1,824	643	1,956	2,468
Total employment B	2,538	3,850	7,993	10,658	10,531	14,508	4,021	13,748	18,529

Source: MDS Transmodal

- 13.21 Taking into account direct employment creation and assuming a decrease in employment densities over time, the estimated total employment for the **low growth scenario is 1,624 full time equivalents (net growth), 3,625 (replacement demand) and 2,754 through the margin, totalling 7,823; and for the high growth is 2,464 (net growth), 6,395 full time equivalents (replacement demand) and 2,754 margin, totalling 9,871.** It is of note that the traffic growth driven element is

expected to generate warehousing related employment, whereas the replacement demand element could manifest in this or alternate employment. For the purpose of this exercise it is assumed all employment growth is warehousing or related and as table 69 indicates the distribution parks record a range of employment types.

Types of job growth

- 13.22 Forecasting jobs, skills and occupation for a fast-changing sector 20 years ahead is fraught with uncertainty. Below we use current data and trends to provide an estimated profile, this should be read as indicative.
- 13.23 Sector studies by the industry indicate that the skills most required in the future will be drivers, managers, mechanical engineers, electrical engineers and computer specialists.
- 13.24 The following section (14) provides an analysis of the breakdown of the current warehousing employment in terms of sector, skills and occupation. This can be projected against the expected (direct) employment growth by scenario to estimate the future employment types, notwithstanding changes in the future.

Job type

- 13.25 Drawing on the 2018 Prologis occupant survey it is suggested that under the decreased densities (Forecast B above) model the 9,871 direct jobs under the high growth scenario could generate around 2,549 office jobs and 1,299 manager jobs, as reported in Table 53 (Forecast B). This assumes that the current ratios across staff types in moving from 95 sqm per employee to 119 sqm per employee are continued. Forecast B(i) assumes that all efficiency savings are made in warehouse floor staff, thus increasing employment across the range of other types. This would suggest some 3,1292 jobs in offices and 1,628 manager jobs.

Table 53: Future warehousing job type (assumes 119 sqm per FTE)

	Office	Warehouse	Driver	Manager	Other	Total
2018 Prologis survey (9,000 sqm+)*	26%	46%	9%	13%	7%	100%
Low growth Forecast A	2,020	3,579	679	1,030	515	7,823
Low growth Forecast A(i)*	2,530	2,507	851	1,290	645	7,823
High growth Forecast B	2,549	4,516	857	1,299	650	9,871
High growth Forecast B(i)*	3,192	5,657	1,074	1,628	814	9,871

Source: Prologis 2018 / GL Hearn

(i) assumes all density efficiencies in warehouse staff

* figures adjusted from published survey to remove units under 9,000 sqm

- 13.26 Given the change in employment profile brought about by decreases in warehouse staff (from around 70% in 2006 to under 50% in 2018) Forecast B(i) is plausible and could indicate that the rate of decrease for warehouse staff in fact occurs more rapidly. However, in the 2010 – 2018 period, the proportion of warehouse staff has been more steady according to Prologis.
- 13.27 At present automation is occurring in a number of ways, notably in picking; automated vehicles such as forklift replacements; and inventory management. Whilst this theoretically allows for a lower intensity of labour use, at present the decrease has been limited because for example as person 'packers' still match automated 'pickers' and rather automation increases overall efficiency.
- 13.28 There is also considerable diversity in the employment needs of large-scale warehouse occupiers. These range from 3PL distributors to automotive distribution, food and clothing. Each has different requirements that might include refrigeration or the ability to cope with particularly large or heavy goods throughput. Each therefore has a specific range of technical labour requirements.
- 13.29 There is no current conclusive view on the way future employment will change in warehouses however labour competition remains high in the Golden Triangle and the sector is working pre-emptively to future proof.
- 13.30 In terms of part time and full-time work, analysis of 2018 data from BRES for the Leicestershire warehousing workforce suggests that 91% are full time and 9% part time work, increasing to 13% incorporating wholesale activities. This compares with 22% part-time reported in the Prologis 2018 occupier survey, although previous surveys were at 12% and 11%.
- 13.31 Whilst a decrease in warehouse floor jobs over time may lead to a reduction in part time workers, as a national trend all jobs are seeing greater flexibility in part-time working which may dilute the industry specifics.

Skills

- 13.32 Forecasting skills and occupation types in the future is equally indicative. With limited evidence, we have drawn on the 2011 Census for employment at existing distribution parks (set out in section 14), providing an estimated baseline skills profile for future jobs as set out below.

- 13.33 This is then rebased to the efficiency assumptions referred to above under Forecast B, where decreases in employment resulting from density decreases only apply to warehouse operatives (30% reduction), split across 'level 1' and 'no qualifications'.

Table 54: Future warehouse employment skills profile (assumes 119 sqm per FTE)

	Distribution Parks 2011	Future employment (low)	Future employment (high)	Rebased (low)	Rebased (high)
	100%	7,823	9,871	7,823	9,871
Level 4+ qualifications	23%	1,799	2,270	1,949	2,459
Level 3 qualifications	14%	1,095	1,382	1,186	1,497
Level 2 qualifications	19%	1,486	1,875	1,610	2,031
Level 1 qualifications	18%	1,408	1,777	1,197	1,510
Apprenticeships / other	12%	939	1,185	1,017	1,283
No qualifications	13%	1,017	1,283	864	1,091

Source: Census 2011 / GL Hearn

- 13.34 The resulting increase is then redistributed across other qualification levels. This results in a split of 40% of staff in level 3 / 4 qualifications (degree and above) and 60% in level 2 or below. For comparison across all industries the current rate is 46% level 3 / 4.

Occupation

- 13.35 Following the same method as above we have estimated a future occupation profile for warehousing. This assessment is again vulnerable to error given increasing automation in the sector and the types of skills required. As a result, the occupations have been merged into bands as below.
- 13.36 We initially estimate a projection of the 2011 profile and then rebase this to an adjusted profile which assumes efficiency gains (reduced growth) due to density decreases in occupations 7-9. This calculation suggests that in the future 35% of warehouse jobs will be in the top 3 occupation bands compared with 47% for all industries (2019). This is a significant increase from 28% at present and represents a notable improvement in the quality of jobs on these sites. Conversely, lower band occupations would fall from 46% to 32%, comparable to all industries in 2019.

Table 55: Future warehouse employment occupation profile (assumes 119 sqm per FTE)

Occupation band	Distribution Parks 2011	Future employment (low)	Future employment (high)	Rebased (low)	Rebased (high)
1.2.3. Manager / Professional / Technical	28%	2,190	2,764	2,772	3,497
4.5.6 Admin / trade / other	26%	2,034	2,566	2,532	3,195

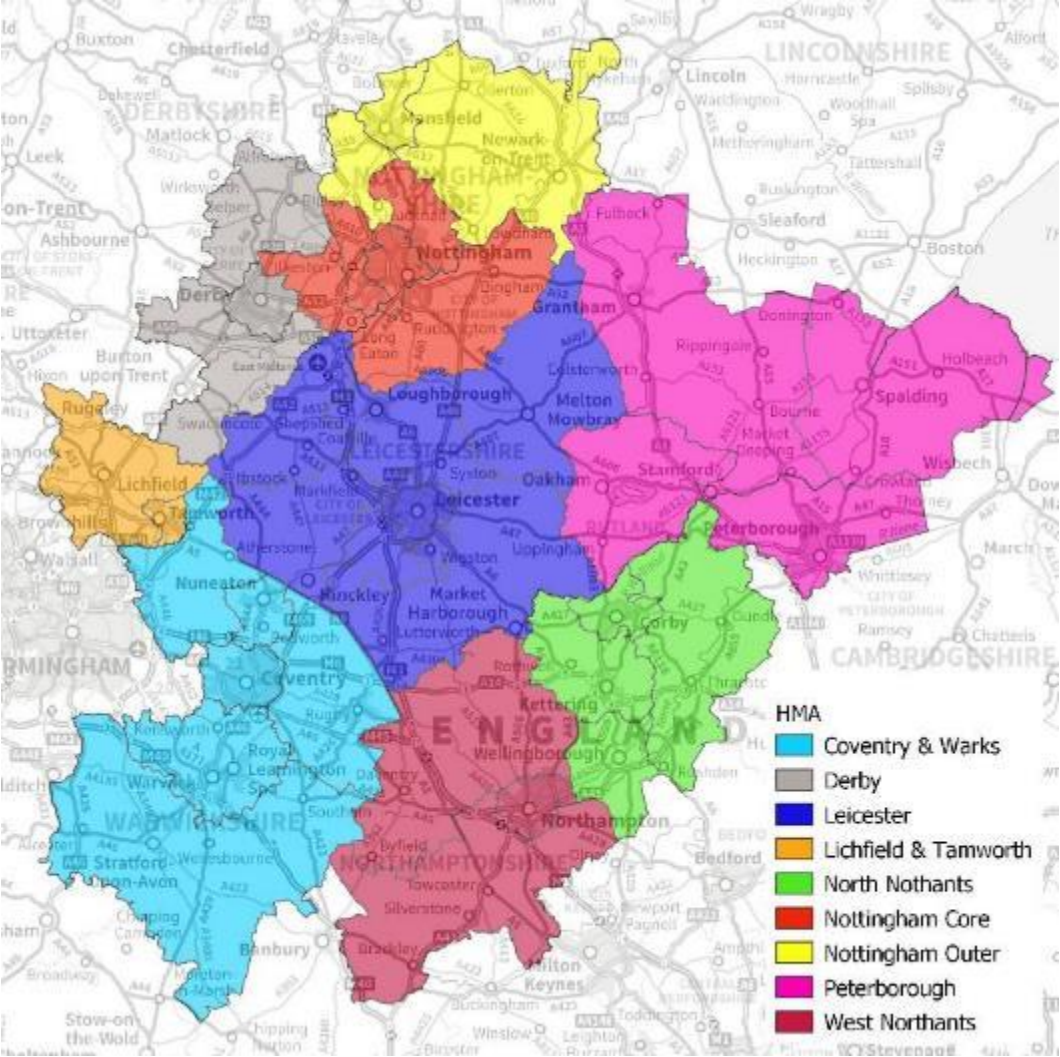
7.8.9. Sales, operatives, elementary	46%	3,599	4,541	2,519	3,178
Total	100%	7,823	9,871	7,823	9,871

Source: Census 2011 / GL Hearn

Effects on the FEMA and adjacent FEMAs

- 13.37 The purpose of this section of the report is to examine the potential impact on labour markets and commuting in Leicester and Leicestershire as well as areas surrounding it as a result of the forecast warehousing growth to 2041.
- 13.38 We have established the surrounding local authorities and the Housing Market Areas in which they reside. These are defined by the relevant SHMA documents for those authorities. As the map in Figure 16 below shows the 13 adjoining authorities to Leicestershire reside in 8 HMAs. These HMAs cover 30 local authorities in total.

Figure 16: HMA Surrounding Leicestershire



Source: GLH based on OS data

13.39 The next step in the process is to examine the likely number of forecast jobs in Leicestershire which will be taken up by residents in each HMA. To do this we have drawn on commuting patterns from the 2011 census. While this is somewhat dated it is the only robust and nationally available dataset. Although the analysis in section 14 takes into account major distribution park employment patterns, this also relies on 2011 Census data. The future patterns modelled below are based on all commutes, assuming without prejudice the future supply locations. More detailed analysis could be undertaken of individual locations of demand / supply when known and may benefit the preparation of local plans.

- 13.40 As set out in Table 56 the vast majority of jobs (84%) in Leicester and Leicestershire in 2011 are taken up by Leicester and Leicestershire residents. Around 4.2% of the current workforce reside outside of the study area and its immediately adjacent HMA, with only Birmingham and East Staffordshire providing more than 1,000 workers.

Table 56: Location of Residence of those Working in Leicester and Leicestershire (2011)

Usual Residence	L&L Workforce	% L&L Workforce
Leicester & Leicestershire	326,133	83.7%
Nottingham Core	13,308	3.4%
Coventry and Warwickshire	12,146	3.1%
Derby	10,062	2.6%
Peterborough	3,223	0.8%
North Northants	2,269	0.6%
West Northants	2,192	0.6%
Nottingham Outer	1,681	0.4%
Lichfield & Tamworth	1,359	0.3%
Elsewhere	17,075	4.4%
Total	389,448	100.0%

Source: ONS, 2011 Census

- 13.41 The largest percentage of jobs taken up by residents outside of the study area are those by residents in the Nottingham Core, Coventry and Warwickshire and Derby HMAs, with all other HMAs providing less than 1% of the workforce.
- 13.42 Within the confines of this report, we rely on the 2011 Census data and without prejudice of future supply. In reality warehouse worker drive times are typically 30 minutes and no more than 45 minutes as confirmed by stakeholders engaged during this study. A more accurate model of future warehouse worker origins would use this data to generate travel to work areas for future supply locations and this is how many operators approach an assessment of unit viability. East Midlands Gateway for example is reportedly popular given its north south / east west accessibility. This can be seen through Census based modelling in section 14.
- 13.43 To test the spatial effects of the anticipated warehousing employment growth we firstly need to translate the additional 7,823 FTE jobs from the low growth and 9,871 FTE jobs from the high growth scenarios to total jobs. To do this we have assumed that 11% of all distribution jobs are Part-Time and 89% are full time, in line with current BRES 2018 data on warehousing employment in

Leicestershire. If we further assume that all part-time jobs are the equivalent of half a full time job. This results in the FTE jobs being the equivalent of 88.5% of total jobs. As a result the total jobs for each scenario is 8,840 to 11,154 respectively.

- 13.44 As Table 57 sets out, if these additional jobs are taken up by residents in the same way as they did in 2011 (acknowledging the identified limitations) then 7,403 and 9,341 of the additional jobs in the low and high scenario will be taken up by Leicester and Leicestershire residents.

Table 57: Potential Location of Residence for workforce taking up additional Jobs.

Usual Residence	Low Growth	High Growth
Leicester & Leicestershire	7,403	9,341
Nottingham Core	302	381
Coventry and Warwickshire	276	348
Derby	228	288
Peterborough	73	92
North Northants	52	65
West Northants	50	63
Nottingham Outer	38	48
Lichfield & Tamworth	31	39
Elsewhere	388	489
Total	8,840	11,154

Source: GLH, based on ONS data

- 13.45 Outside of the study area, all HMAs would send less than 400 residents in the high growth scenario. Only 4 HMAs would send more than 100 residents in the high growth scenario and only 3 HMAs in the low growth scenario.
- 13.46 With Leicester and Leicestershire providing the expected bulk of the workforce, there will be a need to understand how this interrelates with other expected employment growth and the balance of housing need generated from the standard methodology or Local Plan targets.

Local Authority Commuting Analysis

- 13.47 At a local authority level, the strongest flows into the study area from neighbouring HMAs based on all 2011 commuters are:
- From the Nottingham Core HMA
 - Rushcliffe to Charnwood

- Erewash and Nottingham to NWL
- From the Coventry and Warwickshire HMA
 - Nuneaton and Bedworth to Hinckley and Bosworth and Harborough
 - Rugby to Harborough
- From the Derby HMA
 - From Derby and South Derbyshire to NWL
- From the North Northants HMA
 - Kettering to Harborough

13.48 These major flows, and the more detailed local authority patterns, would suggest that the impact on traffic and travel would be minimal with the likely increases only being notable on the following major routes – subject to change based on final locations for additional supply:

- The A6/A50 between Derby and the M1
- The A6 between the M1 and Loughborough and Kettering and Market Harborough
- The A47 and A5 between Nuneaton and Lutterworth
- The A426 between Rugby and the M1
- The A14 between Kettering and the M1
- The M69 between Coventry and Leicester

13.49 In most cases, these are major routes and would likely have some spare capacity. Furthermore, any impact can also be reduced through encouraging increased use of public transport or other initiatives such as car-sharing for example as referred to in section 11 (para 11.24).

Housing Implications

13.50 Some of the additional workforce associated with warehouse growth may also require accommodation. We have made a high-level assessment of the housing need associated with the scale of additional residents working in Leicester and Leicestershire. To do this we have based it on the average number of adults in each household.

13.51 Recognising that the growth in jobs will not necessarily result in an increase in the same number of employed residents we have made an adjustment for double jobbing i.e. some people will have more than one job.

13.52 We have used the Annual Population Survey to identify the percentage of people in each local authority that have a second job. Based on long term trends (2004 to 2020) around 4% of the national workforce have more than one job. We have applied the local rates to the outputs of the previous

table. This shows an increase in the number of residents in employment of 8,482 in the low scenario and 10,702 in the high scenario.

- 13.53 The next step examines economic activity rates and recognises that there will be additional population who do not take up one of the additional warehousing jobs will also move to the area. As this is a high level assessment the calculation does not go into the same level of detail as similar approaches set out in a housing market or needs assessment - for example we have not taken into account different levels of economic activity for different age groups nor projected increases in economic activity which would alter the overall need.
- 13.54 We have again looked at the Annual Population Survey to identify the % of adults aged over 16 that are economically active. This is then applied to the number of residents in employment (8,482 in the low scenario and 10,702 in the high scenario) to get to a number of adults in the population.
- 13.55 At national level economic activity in those aged 16 and over has been around 64%. Although within Leicester and Leicestershire this ranges from 62.6% in Melton and North West Leicestershire to 68.7% in Charnwood. We have used an average rate over the last 6 reporting periods, this includes the year to June 2020 and therefore would pick up some Covid-19 related reductions in activity. When applied these rates result in an increase in population aged 16 and over of 13,006 in the High Scenario to 16,411.
- 13.56 To translate this growth in the adult population to a housing need we have followed a similar calculation used by the housing delivery test in calculating the number of homes being released by C2 bedspaces to C3. These calculations have been run at a local authority level and aggregated to an HMA level. The average number of adults per household ranges from 1.79 per household in Wellingborough to 1.9 per household in Lichfield
- 13.57 As Table 58 sets out the housing impact of the additional growth in the HMA ranges from 271 dpa to 342 dpa. In neighbouring HMAs the growth ranges from 1 to 15 dpa over the period 2020 – 2041. Only 3 HMA would be required to deliver double figures per annum and this would be divided across their local authorities.

Table 58: Housing Impact of Jobs Growth by HMA and Scenario

HMA	Low Scenario (2020-2041)	High Scenario (2020-2041)	Low Scenario Dw Per Annum	High Scenario Dw Per Annum
Leicester & Leicestershire	5,700	7,192	271	342
Nottingham Core	252	241	12	15
Coventry and Warwickshire	221	279	11	13
Derby	174	220	8	10
North Northants	57	72	3	3
Peterborough	47	59	2	3
West Northants	40	50	2	2
Nottingham Outer	32	40	2	2
Lichfield & Tamworth	24	31	1	1
Other, combined	322	406	15	19
Total	6,869	8,184	327	390

Source: GLH based on ONS data

- 13.58 In all cases, the identified figures above would only make up a very small percentage of the overall housing need as calculated using the standard method and are intended as an indicative guide. There is potential for this to change subject to the final choice of locations for additional sites to address shortfall for floorspace needs to 2041 as well as final employment required.
- 13.59 As noted above, with Leicester and Leicestershire providing the expected bulk of the workforce, there will be a need to understand how this interrelates with other expected employment growth and the balance of housing need generated from the standard methodology or Local Plan targets.

Latent Workforce

- 13.59 As well as delivering additional housing there is also a sizeable population in the study area and the surrounding local authorities who, as of December 2019, were economically inactive but wanted a job. While we recognise that not all of these people will be suitable for employment within the sector there is clearly a latent workforce who could take up at least some of the additional jobs resulting from warehousing growth and limit any upward pressure on housing.
- 13.60 Across the East Midlands, this totalled 146,700 people of which c.34,000 were resident within the study area. As Table 59 sets out there is a large number of residents (107,000 in total) in the

immediately adjacent HMAs who could take up some of the additional jobs in the study area without necessitating an additional home being built for them.

Table 59: Economically inactive who want a job by HMA (year to Dec 2019)

HMA	Economically inactive who want a job
Leicestershire	33,900
Nottingham Core	23,800
Derby	14,000
Lichfield & Tamworth	4,100
Coventry & Warwickshire	23,200
West Northants	9,400
North Northants	9,400
Peterborough	11,600
Nottingham Outer	11,700

Source: Annual Population Survey, 2020

14 LABOUR AND SKILLS

14.1 A further analysis has been undertaken to understand the changing labour market for large scale warehousing in Leicester and Leicestershire.

Commuting patterns

14.2 To examine the labour force within the logistics sector influencing the study area we have identified a number of major distribution parks based on their overall size and significance, these are:

- **Prologis DIRFT**, Daventry
- **Hams Hall**, North Warwickshire
- **Birch Coppice**, North Warwickshire
- **East Midlands Distribution Centre (EMDC)**, North West Leicestershire
- **East Midlands Gateway**, North West Leicestershire
- **Bardon Hill**, North West Leicestershire
- **Magna Park Lutterworth**, Harborough

14.3 To examine the existing commuting patterns we have used as a proxy for Park boundaries the Middle Super Output Area (MSOA) in which they reside. In most cases there is some employment in these MSOAs outside of the parks themselves but these will be a minor contributor to the total jobs figure. We have then used Census 2011¹⁵ data, being latest available dataset, to identify where the workforce in these MSOAs were originating.

14.4 To examine the employment numbers on these parks we have used 2018 BRES data for the more tightly defined Lower Layer Output Area (LSOAs). It is important to note that even LSOAs go beyond park boundaries and count employment outside the parks. This is highlighted where the case is material.

14.5 Despite the more recent job numbers and the slightly different boundaries we have assumed that the same commuting patterns are maintained for the 2018 data at the LSOA level as was the case in 2011 for the MSOA level. For brevity, only the local authorities with over 200 commuters are shown in the tables below.

14.6 DIRFT is located in north Daventry on the M1. The majority of employees come from Daventry and Rugby (51% combined). Residents of Coventry and Northampton make the next largest contributions

¹⁵ WU01EW - Location of usual residence and place of work by sex (MSOA level)

to the workforce supported by the major motorway links. Further development of DIRFT is expected in the future. The LSOA examined does include a large rural hinterland to the park.

Table 60: Prologis RFI DIRFT

Commuter LA	# of Employees Commuting
Rugby	1,982
Daventry	1,180
Coventry	623
Northampton	454
Nuneaton and Bedworth	266
Leicester	247
Total	6,180

Source: Census 2011, BRES (2018), GLH Analysis

- 14.7 Hams Hall is located in the west of North Warwickshire on the edge of the Birmingham conurbation on the M42 / M6. Birmingham supplies the largest labour pool almost double that of the next largest from Tamworth. Alongside North Warwickshire these three local authorities combined provide 59% of the workforce. The LSOA does include a large rural hinterland to the park.

Table 61: Hams Hall

Commuter LA	# of Employees Commuting
Birmingham	2,863
Tamworth	1,447
North Warwickshire	1,241
Solihull	793
Lichfield	406
Walsall	325
Sandwell	324
Total	9,365

Source: Census 2011, BRES (2018), GLH Analysis

- 14.8 Birch Coppice is located in the north west of North Warwickshire on the edge Tamworth and the M42/ A5 intersection. Tamworth and North Warwickshire supply the largest labour pool making up 53% of workforce, followed by Birmingham.

Table 62: Birch Coppice

Commuter LA	# of Employees Commuting
Tamworth	2,670
North Warwickshire	2,174
Birmingham	930
Nuneaton and Bedworth	648
Lichfield	385
Walsall	246
Total	9,195

Source: Census 2011, BRES (2018), GLH Analysis

- 14.9 East Midlands Distribution Centre (EMDC) is located in the north of North West Leicestershire, adjacent to Castle Donington and near the A50 / M1 interchange and East Midlands Airport. Given the accessibility, workers come from a range of origins including North West Leicestershire, Derby and Erewash.

Table 63: EMDC

Commuter LA	# of Employees Commuting
North West Leicestershire	616
Derby	538
Erewash	436
South Derbyshire	283
Charnwood	215
Total	3,375

Source: Census 2011, BRES (2018), GLH Analysis

- 14.10 Similarly East Midlands Gateway is located in the north of North West Leicestershire, adjacent to East Midlands Airport / Castle Donington and near the A50 / M1 interchange. Workers come particularly from North West Leicestershire, Charnwood, Derby and Erewash. It is of note that the LSOA includes part of the airport as well as Castle Donnington itself, the count therefore is likely to over represent employment in distribution in this instance.

Table 64: East Midlands Gateway

Commuter LA	# of Employees Commuting
North West Leicestershire	2,100
Charnwood	1,401
Derby	937
Erewash	859
Nottingham	630
Rushcliffe	584
South Derbyshire	398
Broxtowe	376
Leicester	219
Total	10,030

Source: Census 2011, BRES (2018), GLH Analysis

- 14.11 Bardon Hill is located in the south east of North West Leicestershire, adjacent to Coalville and near the A511 / M1 interchange. Workers come particularly from North West Leicestershire (46%) with the second largest number coming from Leicester.

Table 65: Bardon Hill

Commuter LA	# of Employees Commuting
North West Leicestershire	2,324
Leicester	502
Hinckley and Bosworth	476
Charnwood	465
Total	5,080

Source: Census 2011, BRES (2018), GLH Analysis

- 14.12 Magna Park is located near Lutterworth in the west of Harborough district near the A5 / M1 / M6 interchange. The workforce is drawn particularly from Harborough and Leicester (36%). The LSOA does include a large rural hinterland to the park.

Table 66: Magna Park Lutterworth

Commuter LA	# of Employees Commuting
Harborough	1,358
Leicester	1,249
Hinckley and Bosworth	884
Blaby	707
Nuneaton and Bedworth	644
Rugby	606
Coventry	527
Oadby and Wigston	202
Total	7,310

Source: Census 2011, BRES (2018), GLH Analysis

14.13 Table 68 below brings together all assessed park employment data (reporting authorities providing up to 1,500 employees or 65% of total). North West Leicestershire, hosting a number of major parks, provides the largest employment segment. Tamworth, Birmingham and North Warwickshire are next due to Hams Hall and Birch Coppice. Rugby supports DIRFT and the remaining authorities provide for a range of parks more centrally in Leicestershire.

14.14 The data does not seek to accurately report all warehouse employees, as it is for a select number of parks, is based on 2011 commute patterns and uses destination areas that encompass areas beyond the parks. Therefore, it should be used as a guide rather than definitive.

Table 67: All assessed parks

Commuter LA	# of Employees Commuting
North West Leicestershire	5,349
Tamworth	4,241
Birmingham	3,992
North Warwickshire	3,635
Rugby	2,679
Leicester	2,305
Charnwood	2,302
Hinckley and Bosworth	1,915
Nuneaton and Bedworth	1,818
Harborough	1,661
Derby	1,611
Coventry	1,527
TOTAL	50,535

Source: Census 2011, BRES (2018), GLH Analysis

14.15 Expansion / development is expected at a number of these parks (see supply analysis in section 6) , including Magna Park, EMDC and DIRFT. Assuming similar commuter patterns this would seek to draw further labour from Harborough, Leicester, North West Leicestershire, Rugby and Daventry respectively.

14.16 Within the Leicestershire authorities North West Leicestershire, Leicester and Charnwood provide the greatest workforce. However, given the higher population and centrality to the county, Leicester provides a relatively lower proportion of the workforce to these parks than one might expect.

Labour force composition

14.17 In order to consider the composition of the warehouse and logistics workforce in terms of skills and occupation a number of factors have been examined, these are set out below.

Employment by sector

- 14.18 The employment data derived from the MSOA/LSOA of the large distribution parks assessed above has been aggregated and considered further, as to a large extent, there is confidence in the workforce being largely dedicated to warehouse and logistics activity, and up to date for 2018 (with EMDC / airport being the exception in terms of area of assessment boundaries). The aggregation of these areas also dilutes the impact of any other non-logistics sectors.
- 14.19 To demonstrate this, the park employment data has been collated in terms of the most prominent 2-digit standard industrial classification (SIC) sector, providing insight into the types of activities in these parks. As shown in Table 68, warehousing and support activities are a major contributor to total employment in these areas, followed by wholesale trade and employment activities (temporary employment through recruitment agencies) then retail, wholesale, postal and land transport, all in total accounting for 61% of employment compared with 25% across the study area employment as a whole.

Table 68: Key Industrial Estates Workforce Breakdown

2-digit industry	# Employees
52: Warehousing and support activities for transportation	9,050
46: Wholesale trade, except of motor vehicles and motorcycles	4,675
78: Employment activities	4,610
47: Retail trade, except of motor vehicles and motorcycles	3,555
45: Wholesale and retail trade and repair of motor vehicles and motorcycles	3,205
53: Postal and courier activities	2,890
49: Land transport and transport via pipelines	2,735
70: Activities of head offices; management consultancy activities	1,930
29: Manufacture of motor vehicles, trailers and semi-trailers	1,670
55: Accommodation	1,410
56: Food and beverage service activities	1,345
80: Security and investigation activities*	1,050*
51: Air transport*	1,000*
Total	50,535

Source: BRES (2018), GLH Analysis

* likely to be attributable to East Midlands Airport rather than warehousing activities

- 14.20 Whilst these sectors are perhaps not unexpected, this analysis does suggest that a number of sectors, such as retail, could be considered a warehousing based activity but not warehousing specifically on its own. Of note around 4% of employment is reported in head offices and management consultancy.

Industry insight

- 14.21 Anecdotal evidence from industry stakeholders gathered as part of this study suggests a tight labour market for warehousing employees across Leicestershire, particularly for floor based staff. Competition between occupiers is high and small wage differentials can make a difference in recruiting and retaining staff, as can the quality of facilities at the employment premises. For example, parks or occupiers able to provide quality food and beverages on site or offer commuting support (buses, vouchers etc) are seen as advantageous.
- 14.22 Competition is such that occupiers will intentionally not take leases in distribution parks where particular competitors locate as they cannot compete with their staffing offers. This reinforces the importance of diversity in availability of premises to allow for market choice.
- 14.23 HGV drivers are currently considered to be particularly lacking, with anecdotal reports being that many are aged over 50 with younger workers not being attracted to the role and exacerbated by reductions in East European staff following the Brexit referendum. This has led to upward pressure on salaries and achieved wages of £50,000 pa and above for the role.
- 14.24 Prologis provide regular reports on the nature of distribution warehouse employment, the latest being in 2019¹⁶. This provides insight into jobs by type and density. Table 69 sets out the results for 2006 and 2018 and includes separate analysis of large 9,000sqm+ occupants.
- 14.25 The data reports that since Prologis began surveying their occupier's employees, in 2006 the percentage of warehouse floor workers has decreased and other categories increased, most notably office staff rising from 11% in 2006 to 25% by 2018. In contrast, managerial employment has increased from 7% in 2006 to 12% in 2018. The 2018 data for warehousing over 9,000 sqm is comparable to all units surveyed.

Table 69: Prologis occupier employment profile

Year / respondents	Warehouse	Driver	Office	Manager	Other	Total	Part Time	Full Time
2006	66%	12%	11%	7%	4%	100%	12%*	88%*
2018 (33)	49%	8%	25%	12%	6%	100%	21%	79%
2018 (9,000 sqm+) (24)	46%	9%	26%	13%	7%	100%	23%	77%

Source: Prologis

* 2010 data as question not asked in 2006

¹⁶ Prologis: 'Delivering the future: the changing nature of employment in distribution warehouses' (2019)

- 14.26 Table 69 also indicates an increasing tendency for part-time work within the industry with the percentage of jobs almost doubling within the last 12 years.
- 14.27 Employment densities have varied over time. In 2006 Prologis reported 95 sqm per employee was typical, increasing to 77 sqm at 2010 again at 2014. However, as of 2018 the densities have reverted to 96 sqm per person.
- 14.28 For large scale warehouses over 9,000 sqm the average employment density was 100 sqm per employee in 2018 but decreasing with even larger units some of which occasionally exceed 300 sqm per employee.
- 14.29 Whilst the data is based on a select number of national occupants, it is a useful record and suggests both that distribution warehousing is requiring a greater level of skilled employment overall; and that employment densities of 100 sqm or above can be reasonably expected in larger warehouses.
- 14.30 In addition, the Skills and Employment Report 2020 produced by Logistics UK Policy also provides useful information about the logistics industry employment. Key highlights include:
- The UK is (at 2020) facing a driver shortage of 76,000. The driver shortage is not just a problem for the UK; there is an estimated driver shortage of 36% across Europe.
 - Over the last 4 years (2015/16 to 2019/20), of those working in logistics the highest employment increases by occupation have been: electrical engineer employment, which has increased by 89.1%; purchasing managers increasing by 48.3%; and transport and distribution managers by 23.7%.
- 14.31 These trends are expected to continue in the future with the automation process requiring more skilled employment to service equipment and less of a need for floor staff. In addition, there is an increasing tendency for large scale warehouses to incorporate ancillary office space to provide a key role in business planning of other management functions.

15 HGV PARKING

15.1 A road freight vehicle's normal day-to-day activities can essentially be divided into three categories, namely:

- Being physically driven on the highway network, either carrying goods between origin/destination or running empty (empty re-positioning, trip to a workshop etc.);
- Stationary periods for operational reasons. This includes loading and discharging goods, workshop visits (maintenance) and vehicles parked at depots when not required, such as at weekends. In most cases, these types of stationary activity take place off the public highway (Operator Licences stipulate that freight vehicles are parked on suitable private land when not in use), the main exception being the delivery of goods into urban areas where road-side parking is sometimes required during the delivery process; and
- Stationary periods for non-operational reasons.

15.2 It is the third category, namely when road freight vehicles are required to park for non-operational reasons while away from their home depots, that can result in inappropriate parking and subsequent wider impacts, given the absence of suitable off-road parking facilities.

15.3 Road freight vehicles come in a range of types and sizes, though for regulatory purposes they can essentially be divided into four broad categories, namely:

- Light vans up to 3.5 tonnes gross vehicle weight (gvw);
- Medium sized rigid goods vehicles up to 7.5 tonnes gvw;
- Large rigid goods vehicles up to 32 tonnes gvw; and
- Large articulated goods vehicles (tractor unit hauling a semi-trailer) or large rigid goods vehicle towing a trailer up to 44 tonnes gvw.

15.4 Given their size and operational deployment characteristics, the main impacts associated with the parking of road freight vehicles for non-operational reasons are generally linked to the third and fourth categories of freight vehicle. However, it should be noted that the growth of e-commerce has led to increasing freight operations using light vans. While not much larger than cars (and they can be driven on a standard car driving licence), many off-highway car parks are inaccessible to light vans e.g. many have height restrictions to prevent access by travellers. Consequently, these types of vehicle also need to park on the highway.

15.5 There are three broad reasons why lorries need to park for non-operational reasons when they are away from their home depots.

1. Legally Required Breaks and Rest

- 15.6 The amount of time that a driver of a freight vehicle can drive and work are strictly regulated by the Drivers Hours Regulations or the GB domestic rules.
- 15.7 The Driver Hours Regulations are the principal set of laws governing day to day working time and break/rest period requirements. They cover drivers of most goods vehicles over 3.5 tonnes gvw when driving anywhere in the EU, an EEA country or Switzerland. The Regulations impose the following mandatory breaks and rest periods.
- A *break* period of at least 45 minutes must be taken after 4.5 hours driving;
 - A driver must have at least 11 hours *daily rest* between working shifts. This may be reduced to 9 hours three times per week; and
 - A driver must have at least 45 hours *weekly rest* between finishing work one week and starting work the next week. This may be reduced to 24 hours if a driver is away from his/her home base, however a driver must compensate for any reduced weekly rest periods by taking additional rest periods over subsequent weeks
- 15.8 Drivers of freight vehicles under 3.5 tonnes gvw follow the *GB domestic rules*, which limits daily driving to 10 hours. The requirement to take break periods under the *Working Time Directive* also applies.
- 15.9 Given the inherent nature of driving work, it is generally not possible for drivers of freight vehicles to take break periods at their home depots. Consequently, there is a need for drivers to park their vehicles while these break periods are undertaken. Break periods can be taken in the vehicle, however it must be stationary and the engine switched off if the driver is operating the vehicle alone (when vehicles have two drivers, breaks can be taken while the vehicle is driven by the second driver). Additionally, if drivers cannot return to their home depots at the end of a working shift, then there is a need to take the *daily rest* requirements out on the road. Again, drivers require suitable places to park (rest periods can be taken in a vehicle, but it must be stationary, and the engine switched off). In most cases drivers would use the vehicle bunk to sleep. While *daily rest* periods are predominantly taken over-night, statutory driving *breaks* take place across the 24-hour period (drivers on night shifts also need to take breaks, albeit 'demand' is higher in the daytime when more vehicles are on the road).

2. Waiting for Delivery/Collection Time Slots

- 15.10 Distribution centres and factories generally operate 'time window' systems for the inward delivery of goods. For example, a distribution centre will plan inbound deliveries during the daytime in order to replenish stock before that evening's outbound deliveries. Such a system also spreads inbound

deliveries over an extended time period. Otherwise, all inbound deliveries could arrive at the same time, causing congestion both inside and outside the distribution facility. A vehicle delivering to such a facility will usually be allocated a time slot during which the goods must be delivered, and in many cases the time slot can be as tight as plus/minus 10 minutes.

- 15.11 Missing an allocated time slot can result either in deliveries being rejected or the vehicle having to wait a considerable period of time before the load will be handled. In view of journey time un-reliability issues (highway network congestion), many freight operators consequently factor-in additional recovery time into their operating schedules to ensure that vehicles arrive on time and meet the allotted time slot. As a result, incident-free journeys mean that freight vehicles will often arrive early for their allocated time slot.
- 15.12 Consequently, there is a need for drivers to park freight vehicles a short distance from the delivery location and wait until their allotted delivery times. Early arrivals are generally not accepted; due to internal space issues most factories and distribution centres do not normally provide pre-delivery parking areas for vehicles which arrive early. Where feasible, drivers will plan to take their statutory break requirements while waiting for a delivery time slot. However, combining the two in this manner will not always be the case from an operational perspective.

3. Driver Amenities and Welfare

- 15.13 As with all employees, freight vehicle drivers are entitled to a healthy working environment. This includes the ability to undertake break periods (as noted above are statutory) and access to basic amenities, such as toilets, facilities to wash and access to food and drink refreshments during those break periods. While drivers are out on the road, it is obviously not possible to access such facilities that may be available at their home or destination depots. Consequently, there is a need for drivers to park their vehicles in order to gain access to such amenities.

Parking for Non-operational Reasons – Spatial Implications

- 15.14 It can be seen from the above that in most cases the need to park freight vehicles for non-operational reasons is short-term in nature. On average, freight vehicles would not need to park for more than one hour as drivers completed their statutory break period, ate a snack or visited the toilet. The exception to this is when drivers are required to undertake a daily rest period, which can be up to 11 hours and in most cases overnight (long-term need).

- 15.15 The first two reasons of parking need, namely *breaks/rests* and *waiting for delivery time slots*, could in the first instance suggest two different locational characteristics. Drivers needing to park in order to comply with driving break or daily rest requirements are more likely to require parking facilities located a short distance from the strategic highway network. This consequently ensures that any 'diversion' away from the strategic highway network is minimised. Conversely, drivers arriving early for a distribution centre delivery time slot will require parking facilities within a few minutes drive of their final delivery destination. This implies a need for parking facilities located close to or within major freight generating locations, such as an industrial estate or logistics park.
- 15.16 However, it is generally the case that major freight generators are located close to junctions on the strategic highway network (this being the case in Leicestershire, such as Magna Park). This consequently suggests freight vehicle parking facilities catering for drivers waiting to undertake deliveries can also provide for drivers needing to park in order to comply with driving break or daily rest requirements (with minimum diversion from the strategic highway network). Driver/vehicle throughput would also be maximised, which will be important should revenue need to be raised to cover running costs.
- 15.17 The third category of need, access to amenities, should therefore be considered non-locational in nature, and a need linked to the other two requirements. In this case, the level of amenity provision is related to whether the parking facility is providing short-term or long-term parking need. Drivers undertaking short-term parking should, as a minimum requirement, be provided with a safe parking area incorporating toilet and washing facilities, with the provision of light food and drink refreshments probably a 'nice to have' addition.
- 15.18 However, drivers undertaking long-term parking (overnight rest) require access to a higher level of amenities. As a minimum requirement, this should include the use of toilet and shower facilities and the ability to obtain a hot evening meal (either on-site or within a short walk). The provision of some form of 'entertainment' (bar, televisions etc..) could be considered a 'nice to have' addition. As per above, locating such facilities adjacent to the strategic highway network are more likely to be commercially viable, given that there would be a passing trade critical mass. As noted above, while *daily rest* periods are predominantly taken over-night, statutory driving *breaks* and *waiting for delivery time slots* take place across the 24-hour period. It is therefore vital that suitable sites are located where access is available 24 hours a day.

Consequences of Parking at Inappropriate Locations

- 15.19 The need to park freight vehicles, as described above, clearly implies a requirement for some form of 'parking space' where vehicles can be parked. Given a deficit of suitable lorry parking facilities in a particular area, this effectively forces road freight vehicles to park inappropriately on the public highway or at other unsuitable locations. The environmental consequences of this, for vehicles which can be up to 18.5m in length, include:
- Parking on the side of a highway and as a result impeding traffic flow, possibly causing congestion;
 - Parking at locations which are incompatible with the noise and exhaust pollution (running engines, refrigeration units) emitted by lorries e.g. residential area;
 - Causing damage to pavement or footpath infrastructure; and
 - Parking vehicles at locations which is not suited to the visual intrusiveness of lorries.
- 15.20 In addition, security issues and the concept of 'lorry crime' cannot be ignored. Organised criminals have in the past targeted freight vehicles, or to be more exact the contents of vehicles, as a source of goods from which to make money. Freight vehicles carrying high value and retail goods have been major targets, particularly goods which are then difficult to trace and can easily be re-sold on the black market or popular internet auction sites. Goods vehicles parked at isolated lay-bys or patches of waste land are obviously an easy target for criminals. The provision of off-road lorry parks with some form of security measures in place can thus be seen as a major weapon in the fight against lorry crime. At a basic level, this would include perimeter fencing, night-time lighting and CCTV, alongside the 'security' in numbers that comes with numerous freight vehicles being parked together. Barrier controlled entry should be considered for larger over-night parking.
- 15.21 Less obvious consequences of a lack of suitable parking facilities concerns the general working environment of goods vehicle drivers. For most employees based at one permanent work location, access to toilet and food and drink refreshment facilities is taken for granted. However, for goods vehicle drivers, the availability of such basic amenities is more problematic. Even if a driver finds a location where it is possible to park his/her vehicle which does not result in serious environmental consequences, there are unlikely to be toilet facilities available. In addition, not being able to access food or drink refreshments could potentially impact on a driver's ability to drive his/her vehicle in a safe manner. This situation is obviously not conducive to a safe and healthy working environment or road safety. Further, many roadside outlets selling food and drink (e.g. Costa, KFC etc..) are often accessible only by private car.

- 15.22 This situation also has potential long term economic consequences for the haulage industry. As previously noted, a shortage of qualified HGV drivers is one of the major challenges currently facing the industry. One of the reasons underlying these shortages and impacting (in a negative way) on current recruitment initiatives is the perceived poor working conditions compared to other similar level jobs. If recruitment into the industry is to be increased, then HGV driving will have to be promoted as an attractive career option with a safe and healthy working environment. The inability to access toilet facilities on a daily basis, as opposed to the use of a clean washroom, is hardly likely to attract potential employees. The provision of good parking facilities with basic amenities could assist the promotion of the industry and aid recruitment of new workers. Another key (and related) challenge is the recruitment of more female drivers into an industry which is still predominantly male.
- 15.23 A national survey of overnight lorry parking was undertaken in 2017 for the DfT (by consultants AECOM). The purpose of the survey was to provide a clear picture of the demand for lorry parking and facilities, including their capacity and utilisation, as well as other indicators of demands such as lorry parking in laybys and on industrial / retail estates. On a regional basis, the study quantified existing parking capacity at dedicated overnight lorry parks (e.g. MSAs, which were classified as 'on-site' parking). Current demand for parking was also established, at on-site facilities and within industrial estates and in lay-bys (classified as 'off-site' parking, which are considered to be unsuitable). Any surplus or deficit of parking capacity was subsequently identified, including the level of parking at unsuitable off-site locations. Work included both desk-top research and primary surveys.
- 15.24 The results for the East Midlands region are shown in Figure 17 (extracted from the National Survey report).

Figure 17: East Midland National Survey Report

East Midlands Regional Overview				
	On-site	Laybys	Industrial Estates	Total
Total Number of Vehicles Parked	1,550	921	561	3,032
Foreign vehicles (%)	20	24	28	24
Number of Sites	49	470	115	634
Utilisation	72%			
Lorry Park Capacity	2,167			
Excess vehicles	(Total Number of vehicles parked – Capacity = Excess)			865

Source: National Survey Report

- 15.25 For the East Midlands, the survey estimates that there is currently capacity for 2,167 HGVs at on-site parking facilities. Overnight demand is just over 3,000 HGVs per night, equating to an overall shortfall in capacity of around 865 HGVs. The area around Magna Park was specifically noted as being a ‘parking shortage hotspot’.

HGV Parking – Facilities Required

- 15.26 Drawing together all of the above, this implies a requirement to potentially develop two types of freight vehicle parking facility in the Leicestershire area to account for both current and potential future shortages to 2041. These are shown in Table 70.

Table 70: Types of Freight Vehicle Parking Facility in Leicestershire

Type	Minimum Requirements	Optional
Short-term Parking	<ul style="list-style-type: none"> • Perimeter fencing, CCTV recording and night-time lighting • 15 x 18.5m parking spaces • Toilets • 24 hour access • Waste and recycling facilities 	<ul style="list-style-type: none"> • Snack food and drink refreshments • Wi-fi
Short and long-term Parking	<ul style="list-style-type: none"> • Perimeter fencing, barrier entry, CCTV recording and night-time lighting • 50 x 18.5m parking spaces • Toilets and showers • Hot food and drink refreshments, either on-site or within a short walking distance • 24 hour access • Waste and recycling facilities 	<ul style="list-style-type: none"> • Bar, TV, entertainment etc. • Fuel sales • Wi-fi

Source: MDS Transmodal

15.27 *Short-term* parking facilities would be aimed solely at drivers seeking somewhere to park while awaiting distribution centre timeslots or undertaking statutory breaks up to 1 hour in length. On that basis they should, as a minimum requirement, be provided with toilet facilities. Perimeter fencing, CCTV and night-time lighting would offer the perception that it is a safe and secure place to park, particularly after dark (addressing the crime and safe working environment issue). Parking for at least 15 HGVs should be provided. This is partly based on the experience at existing short-term facilities nationally. Also, to address the security/crime issues identified, isolated facilities with only one or two HGVs parking should be avoided (safety in numbers concept). Provision of light food and drink refreshments and wi-fi internet access would be ‘nice to have’ additions.

15.28 *Short and long-term* parking facilities would also be aimed at drivers seeking somewhere to park while awaiting timeslots or undertaking statutory breaks. However, they would also simultaneously accommodate drivers seeking parking for daily rest periods (up to 12 hours), which will predominantly be over-night. As many drivers will be parking overnight, as a minimum requirement they should offer toilet and shower facilities, alongside the ability to obtain a hot evening meal (either on-site or within a short walk). In addition to the fencing, CCTV and lighting security measures outlined, entry should be via a security controlled barrier (either to the whole site, though as a minimum requirement to a separate overnight parking area within the site). Ideally, the short-term parking area would be separate from that where over-night parking is provided (to minimise disturbance). The provision of some form of ‘entertainment’ (bar, televisions etc.), wi-fi and fuel sales could be considered optional

additions. Both types of facility should have facilities where drivers can dispose of waste (recyclable materials and 'black bag' waste).

- 15.29 Short and long-term facilities should provide parking for at least 50 HGVs. This is based on capacity provided at existing overnight HGV parking facilities. Table 71 provides some examples of the facilities provided at a selection of existing dedicated overnight truckstops in northern and central England. As noted above, while *daily rest* periods are predominantly taken over-night, statutory driving *breaks* and *waiting for delivery time slots* take place across the 24 hour period. It is therefore vital that both types of facilities are located where access is available 24 hours a day.

Table 71: Examples of Facilities Provided in overnight truckstops

Truck Stop and Location	Number Parking Spaces	Main Facilities	Overnight Parking Fee
Exelby Leeming Bar	85	Security, café, toilets, showers, shop and fuel	£17 with meal voucher
Rugby	240		£18.50
Lymm Truck Stop	300		£17.00
Heywood Distribution Park	200		£7.50
Ellesmere Port	48		£15 with meal voucher
Carnforth	360	Security, café, toilets, showers, shop, TV room and fuel	£8.00
Golden Fleece (J42 M6)	50	Security, café, toilets, showers, shop and fuel	£8.00
Penrith	160		£14.00
Cleveland Truck Stop	250		£12.00
A19	20		£8.00

Source: MDS Transmodal

Need and Facility Development in Leicestershire

- 15.30 Identifying the precise need in Leicestershire, in terms of the type of parking facilities required, capacity and location, alongside devising the potential delivery models (finance, planning and operations) is a fairly extensive process. It will be necessary to conduct significant survey work, including establishing existing HGV parking capacity in the county and identifying the locations where issues currently arise associated with inappropriate HGV parking (and hence where facilities are required to mitigate those issues). Modelling will need to be undertaken to determine likely daily demand alongside further survey work (desk-based and onsite visits) to identify the most suitable

sites for accommodating the established need. Advice will also need to be drafted with respect to Local Plan policies. The delivery of supply in the pipeline (section 6) and new provision (to meet shortfall to 2041) are both opportunities to ensure sufficient facilities provision at sites and to encourage the provision of new /improved parking facilities as well as facilities to meet the decarbonisation agenda.

- 15.31 These tasks are beyond the scope and budget of this study. It is therefore recommended that the issue of future HGV parking provision in Leicestershire be acknowledged in relevant growth plans and transport strategies for Leicester and Leicestershire, and a consideration in respect of future development via policy in Local Plan.

16 PLANNING POLICY AND DISTRIBUTION DEVELOPMENT

16.1 A review has been undertaken in terms of enabling the delivery of distribution development and the optimisation of freight and congestion.

Providing facilities: Last mile / Point of delivery

16.2 Currently, the best practice in planning policy for last-mile logistics is occurring in government bodies across London. This is primarily due to the critical lack of industrial land, combined with high congestion and emissions restrictions along with a strong e-commerce market. However, these policies will continue to be more significant in cities across the country as consumer demand increases.

16.3 The need to identify and plan for the requirements of the logistics sector has been brought into sharper focus through the February 2019 revisions to the National Planning Policy Framework (NPPF) (Paragraph 82). It also stipulates in Paragraph 107 that there should be consideration in providing adequate overnight lorry parking facilities, to reduce the risk of parking in locations where parking is unavailable or could cause a nuisance to neighbouring uses. Thus, the NPPF is clear in recognising the varied needs of logistics at different points in the supply chain and encourages plan makers to consider these when allocating warehousing and logistics floorspace.

16.4 Within the Planning Practice Guidance (PPG) on Housing and Economic Development Needs Assessment¹⁷ states that local authorities should understand the extent to which their land provisions support the needs of not only larger footprint buildings, but also SME's and more localised last mile facilities.

16.5 A recent Lichfields study¹⁸ reports that "84% of participants reported that their authority's Local Plan includes policies or objectives that relate to the needs of logistics sector. This falls to just 27% when considering last mile logistics specifically".

16.6 There are more limited examples of these policies being enacted in various local authorities as outlined below.

¹⁷ Paragraph: 031 Reference ID: 2a-031-20190722

¹⁸ "Going the last mile: Planning for last mile logistics" Lichfield's, Oct 2018

London Plan

- 16.7 There are explicit provisions for last mile distribution in the London Plan. Policy E4 of the London Plan states that retention and provision of industrial capacity should be prioritised in locations that:
- ...are suitable for 'last mile' distribution services.

Lambeth Council

- 16.8 **Policy T8** in the Lambeth Local Plan encourages that last mile logistics schemes will be supported if they reduce the number of HGV's on the road or the emissions from the vehicles. This is especially the case with urban consolidation centres (see below), which then utilise fewer polluting modes of transportation such as bikes or electric vehicles. Lambeth Council is an example in which there are specific provisions in place to reduce congestion and make final-mile delivery be more compatible with other uses.

Consolidation Centres

- 16.9 Urban consolidation centres (UCCs) are units that gather large quantities of goods for last mile distribution in urban areas. They combine loads together to be delivered into locations utilising a single rather than multiple vehicles. These range from very large to micro footprints. In 2014, the London boroughs of Camden, Enfield, Islington and Waltham Forest opened a 2,000 sqft (185 sqm) consolidation centre in Edmonton with access to the strategic road network. This receives goods on behalf of the councils and prepares them for onward delivery to their sites utilising two low emission (Euro V) trucks.
- 16.10 The introduction of small units in higher density urban locations micro logistics sites are expected to become increasingly common due to increasing land values and sustained demand.
- 16.11 One such example is in the London Borough of Westminster, where DPD (a third-party logistics provider) has a fully electric fleet, including electric Fuso eCanter 7.5t vehicles that feed parcels into the depot. Further down the chain to last mile, 10 Nissan eNV200 all-electric vans make 120 stops a day to the surrounding area, along with eight micro-vehicles from Paxster, a Norwegian manufacturer. All vehicles are stored for charging on site, so the building had to be refitted to include adequate charging facilities.

16.12 DPD noted that there are external infrastructure issues to address in order to support an all-electric fleet of vehicles across London.

Figure 18: DPD Vehicles



Source: DPD

16.13 Examples like DPD show a template for how logistics can cohabitate peacefully in dense urban areas and next to residential uses, whilst also easing congestion and pollution. Councils can actively encourage these uses and consider the unique infrastructure required to ensure that these companies can decarbonise further.

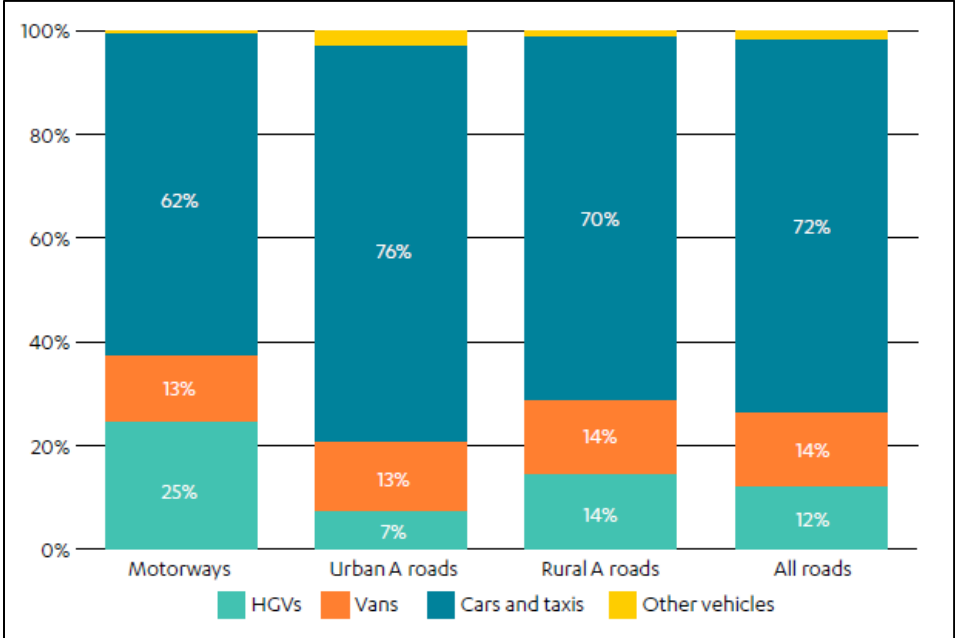
16.14 It is thus recommended that the authorities support and encourage through local plans final mile delivery utilisation of sustainable methods of transportation such as bikes and electric vehicles. This will encourage reduced congestion and better compatibility with other uses such as housing. These lower impact modes of transport can also help to combat noise and traffic pollution in urban centres. Across the county it is most likely that this will be applicable to Leicester City where consideration could be given to supporting appropriate provision for last mile distribution in urban areas.

Freight Optimisation

Congestion Management

16.15 Overall, only 5% of all vehicle kilometres in Great Britain are currently completed by HGVs, and just under half of HGV kilometres are undertaken on motorways. Translated into road capacity, around 12% of road traffic is accounted for by HGVs, rising to 25% on motorways. This is illustrated in Figure 19 taken from the National Infrastructure Commission (NIC) report *Better Delivery: The Challenge for Freight*, showing the current use of road space by vehicle type. In addition to contributing a low proportion of vehicle traffic to the network, it is also the case that HGVs are typically used on the highway network less intensively during the morning and evening peak periods (conversely using the network more intensively overnight).

Figure 19: Road Space Used by Vehicle and Road Type



Source: NIC, Better Delivery – The Challenge for Freight 2019

16.16 Highway network congestion is a significant problem and one that is likely to continue over the long-term (recent falls in road traffic volumes due to Covid-19 are expected to be short-term). However, while the data presented above would suggest that HGV operations cannot be regarded as the main cause of congestion, the sector as a whole is significantly impacted by it. Just-in-time manufacturing production lines can be temporarily halted if goods are delivered late and distribution centres operating on tight time-windows will often reject deliveries if they are delayed (with a consequent impact on retail outlet stock levels). Quoting research undertaken to inform the NIC Better Delivery

report in 2019, the document estimates that the cost of congestion to the freight industry is currently between £3-6 billion per annum.

- 16.17 Just under 15% of current road capacity is accounted for by LGVs (vans). However, van traffic represents the fastest growing sector. The NIC estimate that between 2000 and 2017, van kilometres increased by 56%. In London, despite car and HGV traffic declining over recent years, vans are generating an overall increase in road traffic. Unlike HGVs, van traffic also competes for road space during the morning and evening peaks. Despite the increase in e-commerce reported elsewhere in this document, most van traffic is actually related to the service sector (electricians, plumbers, builders etc.). Only a minority of vans are conveying freight in the technical sense; the NIC estimate that only 25% of van mileage is for the collection or delivery of goods. Small to medium size vans have essentially replaced the use of estate cars for conveying parts, equipment and tools (many estate models are now branded at the high-end of the car market).
- 16.18 Managing network congestion is primarily a matter for *highway engineering* (and therefore beyond the scope of this report). This includes the provision of new capacity alongside measures and technology which are designed to make better use of existing capacity e.g. smart motorways and junction enhancements. Some authorities have introduced road pricing as a tool to manage road congestion (principally TfL). Longer-term, the NIC is understood to be investigating options for wider implementation of road pricing as a means of better managing congestion. Given the competitive advantage / national role in logistics that the county plays, managing network congestion and reducing its effects on freight should be suitably acknowledged in Transport Plans.
- 16.19 However, the planning system (and by extension planning policy) as it relates to the development of large-scale warehousing, can have a role to play in mitigating the negative impacts of highway network congestion. This is likely to fall into five broad areas.

1. Promoting and facilitating modal shift; transferring freight currently moved by road haulage to other more sustainable modes. As noted by the NIC Better Delivery report, only rail currently offers a credible alternative for some types of road freight in terms of network coverage, speed and cost of haulage. To enable modal shift, planning policy should therefore be planning for and supporting a significant expansion in the quantum of large scale warehouse floor space that is located at suitable rail-served sites. In this respect, reference should be made to the NPPF and National Network NPS summaries already provided elsewhere in this report.

2. Planning policy should ensure that large scale warehouse developments are located in areas which permit HGV and LGV arrivals/departures across the 24-hour period (and likewise 7 days

per week). This includes ensuring that when sites are allocated in local plans for large scale warehousing, they are located close to the strategic road network (and other roads capable of accommodating large volumes of HGVs) and away from incompatible land uses such as residential areas. Policies in local plans should ensure that when planning consent is awarded for large scale warehouse developments, they do not include conditions which restrict the times of day when HGVs and LGVs can arrive or depart. In order to maximise journey time reliability, operators will where feasibly seek to despatch loads at times when the road network is used the least by other road users i.e. outside peak hours and overnight. It is therefore important that access to the highway network from large scale warehousing by HGVs and LGVs is permitted 24/7.

3. Planning policy should ensure that non-warehouse end delivery locations, particularly those in urban areas, are able where feasible to accept deliveries of cargo across the 24-hour period. This will include deliveries to factories and retail outlets. While not directly related to the development of large-scale warehouses, such policies should ensure that HGVs and LGVs based at distribution centres can avoid using the highway network at the most congested times of the day (i.e. outside peak hours and overnight).

In many cases, non-warehouse receivers of freight are able to accommodate deliveries during the evening and night (security or other staff will be on-site). However, conditions are often attached to planning consent decisions which prevent or make it extremely difficult to undertake deliveries during the evening or overnight at such locations. Such conditions are understandable where delivery points are located in close proximity to residential areas, though some authorities have attached conditions as a matter of course and sometimes post-development (when a residential scheme is built near an established industrial area).

Planning policy should therefore seek to allocate sites for developments which receive goods (e.g. manufacturing and retail) at locations where deliveries across the 24-hour period can be accommodated without conflicting with incompatible land uses such as residential areas. Policies in local plans should direct that planning consent decisions do not include attached conditions preventing deliveries during the evening and overnight, except where absolutely necessary. The default position should be no time restrictions; only where deliveries may cause conflict with nearby residential areas and when mitigation measures are not appropriate should conditions be attached restricting evening and overnight deliveries. Policies should be flexible, allowing operators to demonstrate that night-time deliveries can be undertaken with mitigation measures while still protecting nearby residents from noise or light pollution before any time restrictions are imposed (say at reserved matter stage). Mitigating measures include the use of low-noise tail-lifts and roll-cages, plug-in reefer units rather than diesel generators and sound-absorbing screens etc.

4. Planning policy should ensure that large scale warehouse developments include areas where HGVs and LGVs have facilities to park off the highway, either before or after deliveries and when drivers are taking statutory breaks. This will ensure that roads within, close to and surrounding large scale warehouse developments are able to remain 'free-flowing' at all times (i.e. not obstructed by parked HGVs). In this respect, reference should be made to the NPPF and National Network NPS summaries already provided elsewhere in this report.

5. Urban Consolidation Centres. Urban consolidation centres are where multiple freight operators (3PLs and own account operators) initially deliver goods into a warehouse type facility located on the urban fringe. The goods are consolidated and then reloaded onto freight vehicles for the final delivery into the urban area. In theory, such facilities allow multiple part-loaded freight vehicle trips into the urban centre to be replaced with fewer but fuller vehicles (and given the short distances involved this part of the delivery process could also be undertaken by battery electric vehicles). However, take-up to date has been very limited and mainly where special/specific circumstances have necessitated consolidation (e.g. at Heathrow Airport where goods need to be security scanned before delivery into the airside passenger terminals).

16.20 Take-up of urban consolidation centres has been limited for three main reasons:

- The consequent additional handling and transport leg adds further costs into the end-end supply chain (compared with direct deliveries). The consolidation centre operator would naturally make a charge to the transport operator for the handling and subsequent re-distribution (note the Heathrow consolidation operation is effectively funded by the airport's security arrangements, which ultimately are recharged back to passengers via their airline tickets). The NIC has suggested that they are unlikely to be commercially attractive without support from the public sector;
- Many retail outlets are already receiving a full load on each delivery. Using a consolidation centre would mean that goods are discharged from one full HGVs only to be reloaded onto a subsequent full HGV; and
- It is also the case that that freight operators, particularly 3PLs and those in the parcels sector serving e-commerce, are already consolidating cargoes from multiple shippers, meaning vehicles are already loaded efficiently and trips minimised

16.21 Further large-scale take-up of Urban Consolidation Centres is unlikely, meaning they will not have a significant impact in mitigating highway congestion. However, where special/specific circumstances have been demonstrated and necessitate some form of consolidation, this should be accommodated within local plan policies. As per above, such facilities should be located in areas where HGV and LGV arrivals/departures across the 24-hour period are permitted. Sites should therefore be allocated in local plans which are close to the strategic road network and away from incompatible land uses such as residential areas. Policies in local plans should ensure that planning decisions do not attach conditions restricting the times of day HGVs and LGVs can arrive or depart.

16.22 It should be noted that Urban Consolidation Centres (as described) are not the same as the cross-dock facilities located close to major urban areas that are operated by e-commerce retailers or their appointed distribution operators (such as a 3PL or the major parcel couriers). The latter are operated by a single transport provider, albeit cargo passing through them is often a consolidation of goods from multiple shipper clients. They are also designed to facilitate the transfer of goods from fully

laden HGVs to fully-laden vans. The transport provider is the consolidator and in doing so will have maximised vehicle fill and minimise the number of trips required.

Freight Optimisation

- 16.23 Road haulage operators will seek to run vehicles fully loaded most of the time as part of their normal day-to-day activities. Once an initial delivery of goods has been completed, operators will normally seek a further shipment of goods, known as a return load or backload, to avoid a HGV having to return home empty. To minimise empty running, the backload will ideally originate close to the location of the initial delivery. Likewise, the delivery point for the backload will be close to the vehicle's final destination.
- 16.24 Triangulation may also occur, where a HGV will deliver and collect a series of loads throughout a shift (again with the empty running between delivery and subsequent collection minimised). Another type of delivery process is the multi-drop operation (sometimes called 'milk-round' deliveries). This is where a freight vehicle will depart from its point of loading (e.g. distribution centre or cross-dock facility) with consignments for multiple end-users, only returning to point of origin once all deliveries have been completed. Operators will normally plan routes and match loads to vehicles to minimise empty running after the final delivery.
- 16.25 HGV empty running in 2018¹⁹ was 29.2% (defined as vehicle kilometres driven empty, source: DfT Road Freight Statistics). This figure has remained pretty constant for the past two decades, only altering by 1-2% above or below this figure each year. Some road haulage operations, by their nature, have to incorporate empty running as part of their normal day-to-day activities. This includes deliveries of products in specialist tankers or trailers, such as petroleum or flour, where other commodities cannot be conveyed, or contamination would result. The need to return empty pallets and roll-cages can also prevent the collection of backloads. Trips can also be over short distances, where returning to the point of loading is more cost effective than seeking a return load.
- 16.26 However, the fact that empty running has remained constant over the years indicates that the road haulage industry operates reasonably efficiently, and empty running is being kept to the absolute minimum except for those operations where it is not possible or feasible. The high cost of diesel fuel is probably a key contributory factor explaining this position.

¹⁹ The latest year full data is available

- 16.27 Another key contributory factor is that it is now common practice for retailers and manufacturers to out-source much of their transport and other logistics functions to specialist service providers known as third party logistics operators or 3PLs. This has resulted in multiple shippers, often direct competitors, in having transport contracts with the same 3PL and consequently despatched cargo ends up being handled by the same 3PL operator. Other than where operating or contractual issues prevent it, 3PLs will optimise use of their transport fleets through performing load-sharing, multi-drop and backload operations for these different client retailers or manufacturers to ensure vehicles run fully laden and to reduce empty running. This can include a 3PL's HGV completing a delivery for one retailer and subsequently collecting a backload from a competitor retailer close by. The main parcel couriers, such as DHL and DPD, convey cargo from competitor e-commerce retailers on the same goods vehicle and via the same distribution centre.
- 16.28 Further, 3PLs will actively collaborate by sub-contracting cargo loads to one another (known as horizontal collaboration), thereby reducing empty running or ensuring vehicle fill. For example, one operator could be conveying cargo from A to B, whereas the second operator has a contract to move goods from B to A. If both transport operators decide to move the goods themselves by road haulage, they would need to re-position their vehicles back to their respective origins, running empty on the return legs. However, the two operators could collaborate whereby the second operator sub-contracts the consignment to the first operator, thereby ensuring that the first operator's goods vehicle runs 'full' in both directions. ICT is also used to optimise vehicle load planning, both within individual 3PLs and between operators. By their nature, therefore, 3PLs can be considered as a freight optimisation tool.
- 16.29 Freight optimisation is therefore primarily a *commercial or economic* matter for transport operators (and therefore beyond the scope of this report). They have a commercial incentive to do so, otherwise they would not generate a return and eventually go out of business. However, the planning system (and by extension planning policy) can aid this commercial process through planning for and supporting the co-location of manufacturers and large scale distribution warehouses in close proximity, thereby maximising opportunities for load-sharing and backloading (and reducing the empty running distance between delivery and collection points). Policies in local plans should therefore ensure that large scale warehouses are developed at purpose build distribution parks with a multitude of occupiers, such as *East Midlands Gateway SRFI* or *Magna Park*, rather than as stand-alone facilities. Further, in the case of rail-served sites the establishment of multiple

manufacturers/distributors at the same location generates the critical mass required to sustain frequent full-length train services to a variety of destinations.

17 CONCLUSIONS & RECOMMENDATIONS

17.1 This study has considered a wide range of topics related to the large-scale warehousing sector and specific to Leicester and Leicestershire. Key findings and recommendations are set out below.

17.2 Drivers for change:

- The key drivers for change in logistics are considered to be the growth of e-commerce, decarbonisation efforts for zero-emissions road and rail freight vehicles and disruptive new technologies.
- **Decarbonisation:** The road and rail freight sectors must decarbonise by 2050 if the UK is to meet its climate change obligations. For smaller road freight vehicles (i.e. LGVs or vans), battery electric vans are emerging as a viable zero emission alternative.
- Decarbonising HGVs will be 'more challenging', though three key options are emerging as the most promising alternatives, namely e-highways, battery electric and hydrogen fuel-cells.
- New warehousing developments will need to be located where existing grid capacity is sufficient or could be upgraded (network reinforcement) relatively easily, supporting decarbonisation as well as the higher power needs of automating processes.
- Electrification is considered to be the only realistic solution for decarbonising rail freight operations. For the East Midlands, Network Rail's TDNS recommends that all lines be electrified, including the MML north of Market Harborough (the planned limit of electrification under the currently funded scheme).
- The National Infrastructure Commission recommend government require electricity distribution network operators to map out the infrastructure upgrades and opportunities for alternative solutions, such as energy storage, required to enable large scale freight van charging at depots.
- **E-commerce:** At the end of 2019, e-commerce accounted for 19% of all retail sales. During the peak of the Covid-19 pandemic, it reached 33% albeit this fell-back to 27% once non-essential retail outlets re-opened. The expected continual growth of e-commerce is likely to drive further investment in new infrastructure, in particular for:
 - Very large-scale units. The East Midlands central location to the country at large means it will almost certainly be a sought-after location for such facilities; and
 - Smaller units to operate as cross-dock facilities. The large urban centres of Leicester, Nottingham and Derby also implies demand for such facilities in the Leicestershire area
- Overall, the locational advantages of the golden triangle are unlikely to diminish. Leicestershire remains capable of meeting both rail-served and non-rail-served needs

17.3 Planning for future floorspace:

- The most critical component of this study has been to recommend a future volume of warehouse floorspace and area of land required to accommodate it that should be planned for from 2020 to 2041. A number of techniques have been tested and there is a strong correlation between the 2012-19 completions trend and high replacement demand model with sensitivity (higher) rate of traffic growth.

- **It is recommended that the authorities plan for around 2,570,000 sqm of additional floorspace permissions to 2041** (including a flexible margin of 643,000 sqm based on average 5 yr completions).
- Current levels of stock at 2020 are 2,314,000 sqm. **The balance of needs to 2041 (road and rail) is 1,160,000 sqm, after taking into account current supply, which authorities should use as a figure for planning policy requirements.** The balance of needs is equivalent to around 50% of existing stock however this is not equivalent to a 50% gain by 2041 as some older stock is expected to be lost. Pre lets (as of April 2020) count for around 552,000 sqm but are excluded from this balance as will not be available to meet newly arising need.
- Based on 43% of future need at rail served sites, which reflects an expected increase in rail orientated freight in the future, **there is a shortfall of 768,000 sqm (307 ha) at rail served sites which should be planned for** (including margin) after taking into account existing supply. This would largely be met by the proposed Hinckley NRFI should it be permitted.
- Based on 57% of future need at non-rail (i.e. road) served sites, **there is a shortfall of 392,000 sqm (112 ha) at non-rail served sites which should be planned for** (including margin) after taking into account existing supply. For scale, this is less than the extension of Magna Park North of over 400,000 sqm.

Table 72: Rail - Forecast Demand and Site Supply 2020-2041 - Leicestershire

Rail-served Sites – for Planning	2026	2031	2036	2041
Rail-served (43% of all new build req.) (sq.m 000's)	237	434	632	829
Margin for flexibility (43% of 5-year completions) (sq.m 000's)	79	145	211	277
Total requirement (sq.m 000's)	316	579	842	1,106
Rail-served supply (at 2020) (sq.m 000's)	338	338	338	338
Balance (sq.m 000's)	22	-241	-504	-768
Indicative Additional Land required (Ha @ 25% plot ratio)	N/A	96	202	307

Table 73: Non-Rail - Forecast Demand and Site Supply 2020-2041 – Leicestershire

Non rail-served Sites for Planning	2026	2031	2036	2041
Non rail-served (57% of all new build req.) (sq.m. '000s)	314	576	837	1,099
Margin for flexibility (57% of 5-year completion) (sq.m. '000s)	105	192	279	367
Total requirement (sq.m. '000s)	419	768	1,117	1,466
Non rail-served supply (at 2020) (sq.m. '000s)	1,073	1,073	1,073	1,073
Balance (sq.m. '000s)	655	306	-43	-392
Indicative additional Land required (Ha @ 35% plot ratio)	N/A	N/A	12	112

Section Summaries

- 17.4 **COVID 19:** This report has largely been undertaken through spring 2020 during the time of the onset of the COVID-19 global pandemic. Whilst not directly affecting the production of the study itself, it has had implications for a number of the underlying indicators. 'Lockdown' has forced retail store closures and a greater move towards online retailing and e-commerce, accelerating the trend to several years ahead of forecast. Food delivery retailing in particular has become more stretched. Whilst directly the shift will have a greater effect on last mile rather than NDC facilities, there is also understood to be a greater pressure on total stockholding as well as a desire for businesses to future proof, for example through automation. Different market segments will have experienced dramatically different effects, with a slowdown in car parts or aviation with a faster take up in food delivery. A recession that may follow through 2021 would also slow down demand. The study seeks to take a 'long view' across the period to 2041 in the modelling.
- 17.5 **Warehousing property market:** The property market indicators in the study area point to an ongoing high level of demand for large scale warehousing which has been particularly concentrated in North West Leicestershire in recent years. Availability across Leicestershire is limited however there is future supply, particularly at Magna Park.
- 17.6 **Current stock and pipeline:** According to data extracts from the VOA records, Leicester and Leicestershire currently host around 2,314,000 sqm of large warehousing units across 100 properties. A list of properties has been refined with the host authorities indicating around 2,144,000 is a more accurate position. **This updated list of 97 records is recommended as being used as a start point for future monitoring** (provided separately).
- 17.7 **Development pipeline across the study area and wider Golden Triangle:** The current pipeline for largescale warehousing development is around 1,781,000 sqm of which around 600,000 sqm is at Magna Park in Harborough, 800,000 sqm in North West Leicestershire and 200,000 sqm in Hinckley and Bosworth. These figures are higher than the supply used in the needs modelling which excludes pre-let units, accounting for 552,000 sqm of which nearly 65% is the 350,000 sqm Appleby Magna scheme for Jaguar Land Rover. The majority of the existing supply is expected to be occupied in the next 10 years, with little provision for the post 2030 period at present. Across the wider midlands study area, an estimated additional 4.6m sqm of supply is anticipated of which the largest contributors are South Northamptonshire, Corby and Daventry. Trajectory information suggests that this wider

supply may also be delivered and potentially occupied over the next decade and therefore a particular focus should be identifying sites to address a shortfall in the period 2031-2041.

- 17.8 **Replacement demand:** One of the components of future need is that older warehouses need to be replaced over 30-40-year life times. Whilst units built in the 1990s will soon theoretically be reaching the end of their life, there is little sign of redundancy in the study area. These units still have capital and rental value but see a change towards second tier operators or alternative uses as they fail to meet the most modern requirements that facilitate the latest technologies, automation, size and scale. This identifies the importance of providing new-build stock to remain competitive in the sector. However through the next decade there is potential for older units to be refurbished to a quality that satisfies Grade A requirements. **It is recommended that stock reuse be monitored**, as if achievable this could lead to a reduction in the need for new sites as old units are recycled.
- 17.9 **Planning policy monitoring:** Monitoring strategic warehousing development in a co-ordinated manner across the county will enable a more joined up approach to future planning. **It is recommended that a series of indicators are monitored** including new floorspace permissions and (most importantly) completions, whether units are road or rail served, any ancillary floorspace, greenfield / brownfield and the refurbishment of existing stock. It is also recommended that intermittently market reports are provided to review current levels of demand in terms of take up of units and stock availability across Leicester and Leicestershire and possibly the wider study area.
- 17.10 There is also a need to consider future needs for non-strategic warehousing such as last mile delivery facilities which are anticipated to play an increasing role in fulfilling customer needs in the future. These are typically located in or around urban areas and more likely to see an earlier shift to light goods electric vehicles compared to HGVs.
- 17.11 **Road / rail split:** Alongside e-commerce, de-carbonisation is a key issue for the logistics sector. This in part, alongside the efficiency benefits of rail, is seeing an increasing move and demand for rail served distribution locations. East Midlands Gateway has a SRFI, as does Prologis DIRFT and Hams Hall. A DCO is expected for the Hinckley NRFI and Northampton Gateway SRFI has DCO consent. At present the Leicestershire and East Midlands warehousing stock is largely road based but it is expected that this will continue to change over time. The decarbonisation agenda means such change is essential given the volume of goods capable of being moved on rail freight. However, this change will take time and this study seeks to take a balanced view in terms of the rate that this can occur,

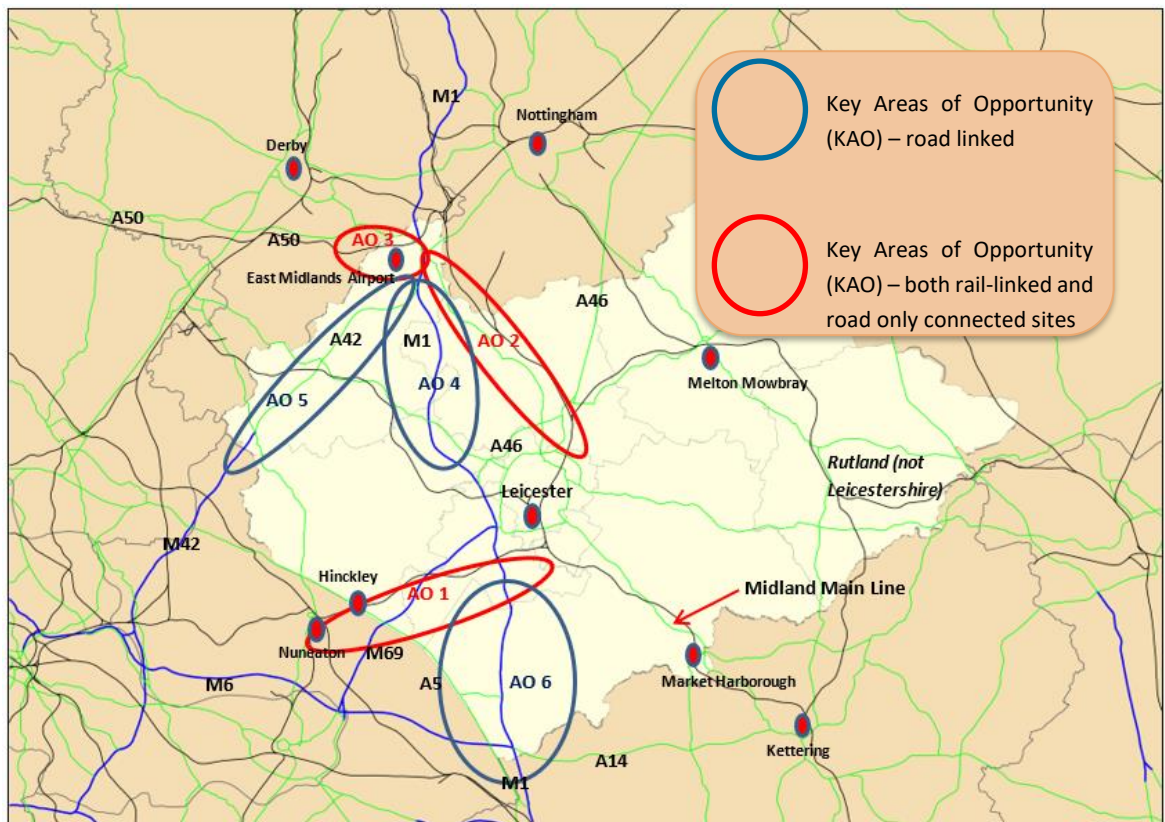
recognising that for many occupiers road access remains paramount. An optimum position at 2041 would be that 60% of new warehouses are provided at rail served sites however planning for an average of 43% builds is a graduated rate of achieving this.

17.12 **Locations for growth:** 6 'Areas of Opportunity' are identified as below and illustrated on the map following:

- Areas of Opportunity – SRFIs and road-only connected strategic logistics sites:
 - Area 1 – between Leicester and Hinckley, broadly following the M69 and Leicester-Nuneaton train line transport corridors and part of M1;
 - Area 2 – between Syston and Ratcliffe-on-Soar, broadly following the A6, M1 and Midland Main Line transport corridors, and incorporating Loughborough; and
 - Area 3 – between Ratcliffe-on-Soar and Castle Donnington/border with Derbyshire, broadly following the A50, M1, the Midland Main Line and the freight only line connecting the Midland Main Line (at Trent Junctions) to the Derby-Birmingham train line.
- Areas of Opportunity – road only connected strategic logistics sites:
 - Area 4 – to the north west of Leicester, broadly following the M1 and A511 transport corridors, incorporating Coalville and Shepshed;
 - Area 5 - the A42 transport corridor, incorporating Ashby-de-la-Zouch; and
 - Area 6 – M1 corridor south of Leicester.

17.13 These areas capture the key strategic road network and include the majority of the existing distribution parks. Areas 1, 2 and 6 are less well served particularly nearer to Leicester (i.e. Blaby and Charnwood).

Figure 20: Key Areas of Opportunity



NB: Boundaries of key areas are not definitive and are shown for indicative purposes only

- 17.14 Where possible existing stock, particularly at established distribution parks, should be reused and recycled subject to the constraints of the replacement demand issues noted above. Sequentially it is recommended that existing sites are sufficiently exhausted followed by extensions of these sites, satellite sites near existing sites, then brownfield and finally new greenfield sites. The 6 Areas of opportunity are recommended to meet any additional shortfall in requirements.
- 17.15 **Labour requirements:** Assessment of existing large distribution park labour markets demonstrates a draw across statistical boundaries along artery routes, with Leicester and Leicestershire providing the expected bulk of the workforce. A 30 minutes' drive is typical for warehousing staff. Competition for labour is tight in the study area and labour availability is a metric operators use in assessing unit locations. The current evidence is that 95 sqm per employee is useful as a job density for larger warehouses. 'Horizon scanning' suggests that this may change in the future due to automation and

this report tests an decrease of 50% in density over the forecast period. It also considers differing skill requirements, suggesting a shift away from the current 50% of warehouse floor staff to around 30%. This is paralleled by a rise in office and technical skills able to manage and service robotics and support back office e-commerce functions.

- 17.16 Based on a series of assumptions it is estimated that warehousing jobs creation could be up to 9,871 full time equivalents by 2041 (under the High Replacement, Sensitivity Test Traffic Growth scenario), comprising 2,464 from net growth in traffic movements; 2,754 through the development of the margin for flexibility (assumed 50% used); and around 6,395 jobs through the re-use of replacement demand stock (assuming 50% of that replaced retains some form of employment). Based on known commuting patterns (most recent Census 2011) across the study area, it is estimated that the majority of the workforce for future development will be derived from Leicester and Leicestershire. However this is based on district wide patterns and is subject to change based on the final locations of planned supply. Analysis of a selected number of existing distribution parks indicates that those based near district boundaries tend to draw labour from beyond the study area.
- 17.17 Once more certainty is known regarding future supply and the location of new sites (considering 50% of future need is already being planned for) further research on commuting and labour market effects on housing need may be warranted. This could be combined with further research into employment trends particularly in relation to replacement demand elements.
- 17.18 **HGV Parking:** The National Survey Report estimates that there is currently capacity for 2,167 HGVs at on-site parking facilities. Overnight demand is just over 3,000 HGVs per night equating a shortfall in the capacity of around 865 HGVs. The area around Magna Park is noted as being a 'parking shortage hotspot'. **It is recommended that the issue of future HGV parking provision in Leicestershire be acknowledged in relevant growth plans and transport strategies for Leicester and Leicestershire, and a consideration in respect of future development via policy in Local Plan.**
- 17.19 **Planning policy and distribution:** Authorities should support last-mile delivery utilisations of sustainable methods of transport such as bikes or electric vehicles – this is particularly applicable to Leicester City as an urban area. Congestion of the freight industry in 2019 cost between £3-6 billion per annum. Planning policy needs to reflect the issues that HGVs face and update policy accordingly.

Appendices

APPENDIX A: E Commerce Logistics Models

Diagram 1: E-commerce – Logistics Model 1

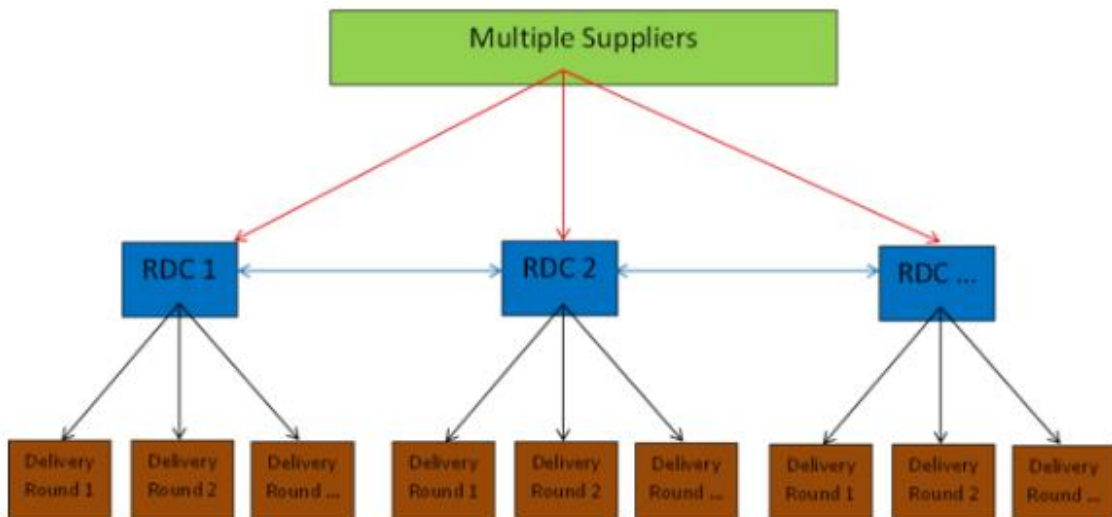


Diagram 2: E-commerce – Logistics Model 2

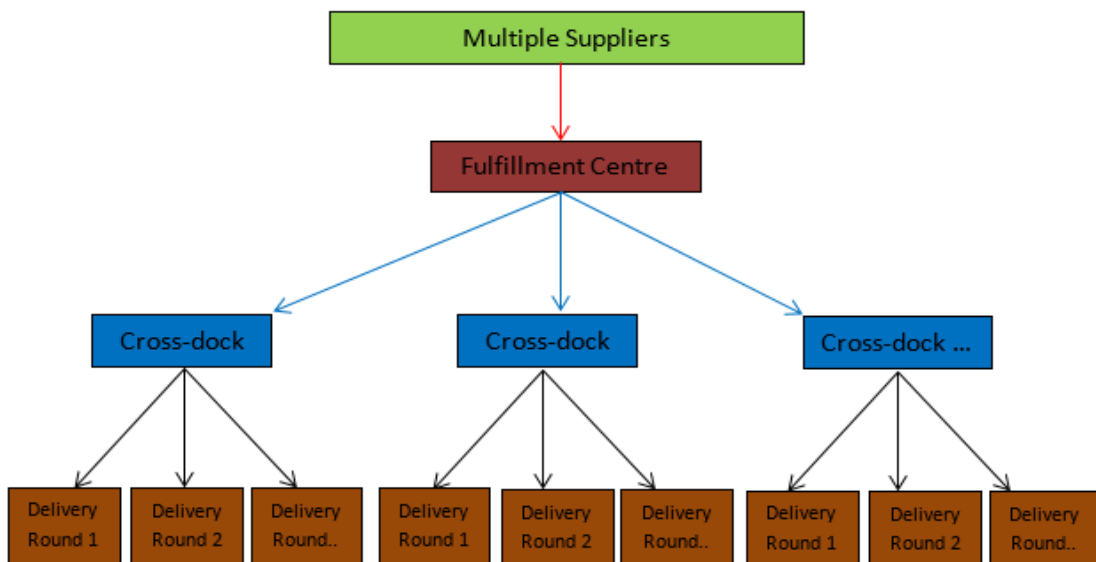
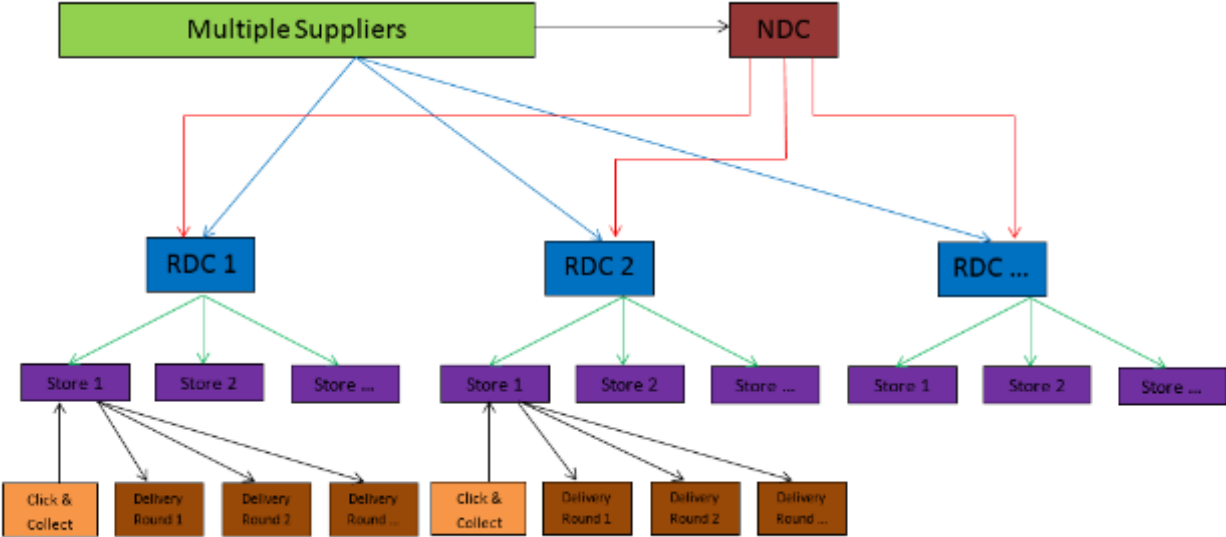


Diagram 3: E-commerce – Logistics Model 3



APPENDIX B: Large Scale Warehouse Floor Space by Billing Area – East Midlands (VOA 2019)

East Midlands			
	Floor Space	Number	Average Unit
Billing Authority	000s sq m	Units	Size (sq m)
Daventry	1,091	33	33,071
Northampton	956	38	25,147
Harborough	770	32	24,049
North West Leicestershire	707	27	26,178
Corby	578	25	23,118
East Northamptonshire	553	20	27,668
Bolsover	399	7	57,054
Kettering	335	11	30,419
Bassetlaw	334	11	30,364
Wellingborough	310	12	25,851
Hinckley & Bosworth	284	9	31,596
South Derbyshire	212	13	16,282
Newark & Sherwood	207	3	68,871
Nottingham	203	11	18,477
Derby	202	8	25,207
Blaby	193	13	14,841
City Of Leicester	176	9	19,559
Amber Valley	175	12	14,588
Ashfield	156	12	12,996
South Northamptonshire	155	7	22,175
South Kesteven	140	7	20,025
Boston	139	9	15,462
Erewash	132	8	16,492
Chesterfield	116	4	28,886

Warehousing and Logistics in Leicester and Leicestershire: Managing growth and change, April 2021 (amended March 2022)
 Leicester and Leicestershire Authorities, Final Report

High Peak	94	4	23,381
Charnwood	92	6	15,291
South Holland	91	7	13,034
North East Derbyshire	86	5	17,191
Rushcliffe	80	4	19,897
Melton	73	3	24,436
North Kesteven	51	4	12,808
Rutland	46	3	15,479
Gedling	46	3	15,276
East Lindsey	21	2	10,418
Oadby & Wigston	19	1	18,913
West Lindsey	18	1	17,887
Mansfield	13	1	12,851
Lincoln	10	1	10,220
TOTAL	9,262	386	23,995

Large Scale Warehouse Floor Space by Billing Area – West Midlands (VOA 2019)

West Midlands			
	Floor Space	Number	Average Unit
Billing Authority	000s sq m	Units	Size (sq m)
Birmingham	737	48	15,362
Bromsgrove	53	4	13,239
Cannock Chase	244	9	27,159
Coventry	506	25	20,227
Dudley	89	7	12,775
East Staffordshire	622	25	24,888
Herefordshire	154	8	19,252
Lichfield	264	12	21,976
Newcastle Under Lyme	280	9	31,099
North Warwickshire	834	34	24,519
Nuneaton & Bedworth	163	8	20,427
Redditch	80	5	16,059
Rugby	456	23	19,842
Sandwell	448	32	13,990
Shropshire	177	9	19,715
Solihull	103	7	14,677
South Staffordshire	109	4	27,239
Stafford	257	14	18,381
Staffordshire Moorlands	35	3	11,514
Stoke On Trent	638	23	27,760
Stratford On Avon	71	5	14,192
Tamworth	180	9	20,009
Telford And Wrekin	133	6	22,172

Warehousing and Logistics in Leicester and Leicestershire: Managing growth and change, April 2021 (amended March 2022)
 Leicester and Leicestershire Authorities, Final Report

Walsall	160	11	14,569
Warwick	175	10	17,478
Wolverhampton	195	9	21,685
Worcester	91	6	15,174
Wychavon	203	12	16,953
Wyre Forest	45	4	11,339
TOTAL	7,505	381	19,697

APPENDIX C: Study Area Supply April 2020

Local Authority	Address	Road Rail	Size (sqft)	Size (sqm)	Status	Planning	Pre Let	Planning application	Delivery P
Blaby	Hinckley National Rail Freight Interchange - J2 M69	Rail			Pending			DCO Application scheduled for Q4 2021	5-15yrs
Blaby	Unit 1 Land To The West Of St Johns (B4114) Enderby	Road	470,000	43,664	Pending	Allocated Site	N	19/0164/OUT	2-5yrs
Blaby	Unit 2 Land To The West Of St Johns (B4114) Enderby	Road	224,749	20,880	Pending	Allocated Site	N	19/0164/OUT	2-5yrs
Blaby	Unit 3 Land To The West Of St Johns (B4114) Enderby	Road	151,750	14,098	Pending	Allocated Site	N	19/0164/OUT	2-5yrs
Blaby	Unit 5 Land To The West Of St Johns (B4114) Enderby	Road	215,250	19,997	Pending	Allocated Site	N	19/0164/OUT	2-5yrs
Charnwood	Rothley Lodge, Loughborough Road, Rothley, LE7 7NL	Road	121,998	11,334	Under con	Planning Permissions Granted	N	P/17/2061/2	0-2yrs
Harborough	Land at Glebe Farm, Coventry Rd, Lutterworth - opposite Magna Park	Road	2,999,996	278,709		Grade A	N	15/00865/OUT and 19/01273/REM	0-10yrs
Harborough	Land at Mere Lane, Bittesby - Magna Park	Road	3,439,669	319,556	Permission	Outline Planning applications	N	15/01531/OUT	0-10yrs
Hinckley & Bosworth	Land East of Hinckley Island Hotel Watling Street Unit A	Road	318,213	29,563	Under con	Hybrid Planning Application	Y - DPD	17/01043/HYB	0-2yrs
Hinckley & Bosworth	Land East of Hinckley Island Hotel Watling Street Unit C	Road	450,000	41,806	Under con	Hybrid Planning Application	N/A - marketed B1/B2	17/01043/HYB	0-2yrs
Hinckley & Bosworth	Nailstone Colliery - Unit A	Road	358,000	33,259	Under con	Reserved Matters	Y- ALDI	20/00224/FUL and 14/00951/REM	0-2yrs
Hinckley & Bosworth	Nailstone Colliery - Unit B	Road	370,225	34,395	Under con	Reserved Matters	Y- ALDI	20/00224/FUL and 14/00951/REM	0-2yrs
Hinckley & Bosworth	Nailstone Colliery - Unit C	Road	274,000	25,455	Under con	Reserved Matters	Y- ALDI	20/00224/FUL and 14/00951/REM	0-2yrs
Hinckley & Bosworth	Unit 1 Mountpark Phase II	Road	668,460	62,102	Under con	Planning Permissions Granted	N	19/00338/FUL (border with NWL)	0-2yrs
Leicester	Leicester Distribution Park, Sunningdale Road, Leicester,	Road	100,000	9,290	Permission	Allocation/Permission	N	20142237	0-2yrs
North West Leicestershire	A42/JLR	Road	645,834	350,000	Permission granted		Y - JLR	18/01443/FULM and 19/02294/REM	0-2yrs
North West Leicestershire	Big Box 10 - East Midlands Gateway Ashby Road	Rail	640,000	59,458	Permission	Allocation/Permission	N	TR050002	2-5yrs
North West Leicestershire	Big Box 11 - East Midlands Gateway Ashby Road	Rail	800,000	74,322	Permission	Allocation/Permission	N	TR050002	2-5yrs
North West Leicestershire	Big Box 6 - East Midlands Gateway Ashby Road	Rail	245,000	22,761	Permission	Allocation/Permission	N	TR050002	2-5yrs
North West Leicestershire	Big Box 7 - East Midlands Gateway Ashby Road	Rail	265,000	24,619	Permission	Allocation/Permission	N		2-5yrs
North West Leicestershire	Big Box 8 - East Midlands Gateway Ashby Road	Rail	240,000	22,297	Permission	Allocation/Permission	N	TR050002	2-5yrs
North West Leicestershire	Big Box 9 - East Midlands Gateway Ashby Road	Rail	345,000	32,052	Permission	Allocation/Permission	N	TR050002	2-5yrs
North West Leicestershire	Cott Beverages, Citrus Grove, Kegworth	Road	212,813	19,771	Permission	Allocation/Permission	Y - Cott B	19/01803/VCI, 15/00651/FULM	0-2yrs
North West Leicestershire	EMDC plot 3	Rail	570,000	52,955	Permission	Allocation/Permission	N		2-5yrs
North West Leicestershire	Former Lounge Coal Disposal Point 14, Measham Road, A	Road	736,487	68,422	Permission	Application in place but new w	N	07/01372/FUL and allocation Ec1d	2-5yrs
North West Leicestershire	Sawley Crossroads	Road	645,834	60,000	Permission granted		Y - ALDI	15/00015/FULM	0-2yrs
North West Leicestershire	Unit 2 Land at Victoria Lane, Ellistown (Mountpark Phase I)	Road	535,580	49,757	Permission	Allocation/Permission	N	18/00402/REMM & 16/00019/OUTM	0-2yrs

Warehousing and Logistics in Leicester and Leicestershire: Managing growth and change, April 2021 (amended March 2022)

Leicester and Leicestershire Authorities, Final Report

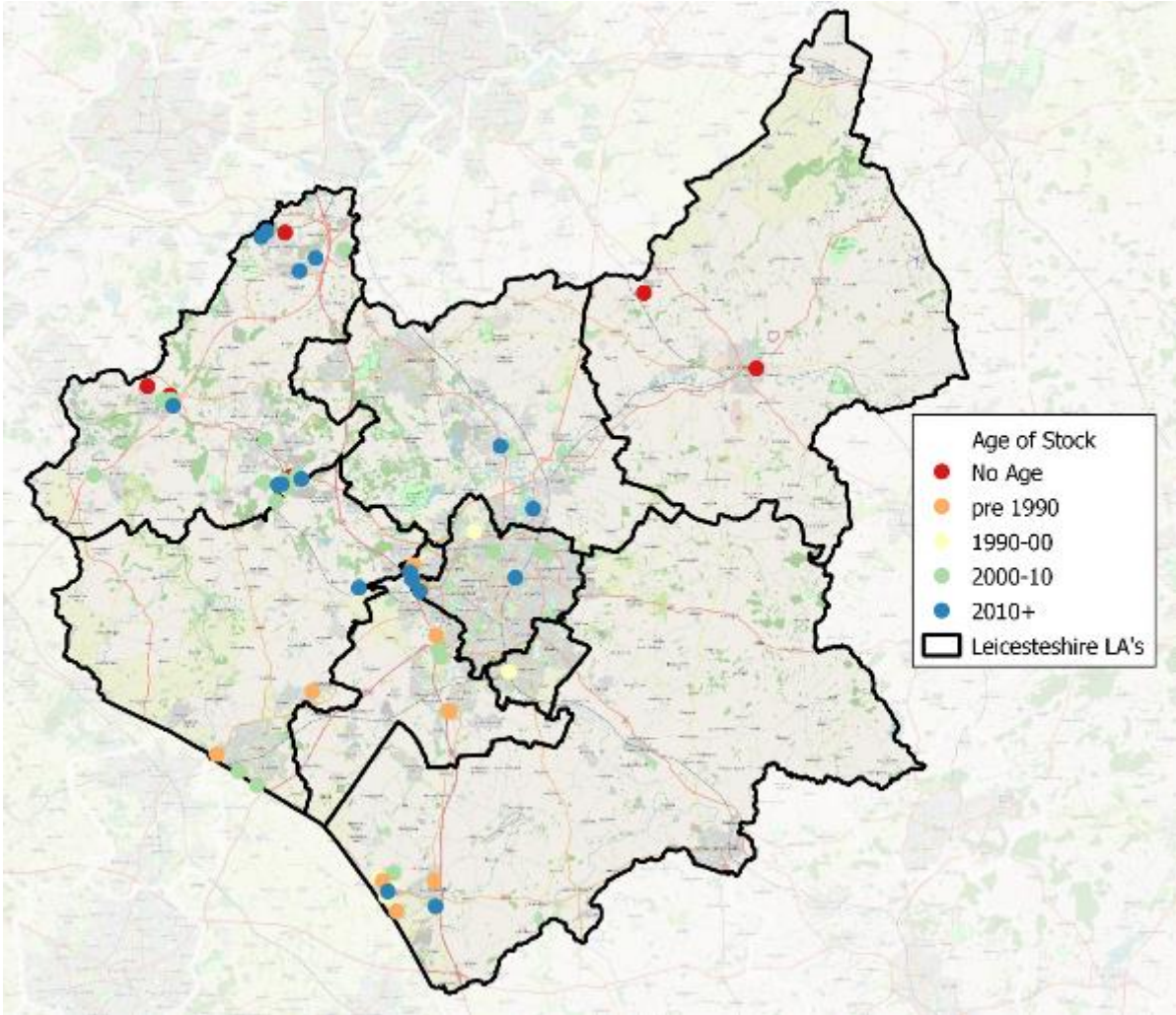
APPENDIX D: Wider Area Supply April 2020

Property Name	Property Address	Submarket Name	City	Building Status	Planning App	NIA sqft	NIA sqm	Size Band	Timescales ABC (A<5, B5-10, C10+)	
									Land Area (AC)	
North of Birchington Road	Bela Land,(Morrison's Land) Halley	Corby Ind	Corby	Allocated Site	Allocated Site	n/a	246,112	n/a		61.5279 B/C
Manton Park	Land at Cockereil Road	Corby Ind	Corby	Allocated Site	Allocated Site	n/a	65,630	n/a		16.40744 A/B
Pharma Factory site	Oakley Hay/Southern Gateway	Corby Ind	Corby	Allocated Site	Allocated Site	n/a	41,513	n/a		10.3782 B/C
Land South of Blue Skie	Saxon Way East	Corby Ind	Corby	Allocated Site	Allocated Site	n/a	15,814	n/a		3.9536 B
lot B1 Centrix business park	Bakeaway	Corby Ind	Corby	Allocated Site	Allocated Site	n/a	83,026	n/a		20.7564 A
Unit 2 Midlands Logistics Park	Geddington Road	Corby Ind	Corby	Committed	12/00259/OUT/	241,000	22,390	200,000 - 300,000 sq.ft.		235.5 A
Gefco Ltd	Geddington Road	Corby Ind	Corby	Pending	19/00050/DPA	880,746	81,824	500,000+ sq.ft.		6.8 A
Rockingham Speedway	Mitchell Road	Corby Ind	Corby	Pending	18/00771/COU	1,310,000	121,703	500,000+ sq.ft.		26.5 A
Barn Close - Gefco -	Geddington Road	Corby Ind	Corby	Under Construction	17/00598/DPA	168,166	15,623	500,000+ sq.ft.		36 A/B
Whitley Business Park	Cheylesmore	Coventry Ind	Coventry	Allocated Site	Policy JE2 Local Plan		120,000	n/a		30 A/B
Baginton Fields	Cheylesmore	Coventry Ind	Coventry	Allocated Site	Policy JE2 Local Plan		100,000	n/a		25 A/B
Eastern Green	Bablake	Coventry Ind	Coventry	Allocated Site	Policy JE2 Local Plan		60,000	n/a		15 A/B
Whitmore Park	Holbrook	Coventry Ind	Coventry	Allocated Site	Policy JE2 Local Plan		32,000	n/a		8 A/B
Durbar avenue	Foleshill	Coventry Ind	Coventry	Allocated Site	Policy JE2 Local Plan		6,000	n/a		1.5 A
Land to South East Junction 10	Longford	Coventry Ind	Coventry	Allocated Site	Policy JE2 Local Plan		6,000	n/a		1.5 A
Coventry and Warwickshire Gateway	Land North, West and South of Coventry Airport	Coventry Ind	Coventry	Proposed Outline Given	OUT/2012/1791	343,740	31,935	n/a		260 A
Cummins/Prologis	Land off Nasmyth Road, Drayton Fields, Daventry	Daventry Ind	Daventry	Under Construction	DA/2019/0366		51,411		13.4ha	A
DIRFT III DCO,	Watling Street, Crick, Northamptonshire	Daventry Ind	Daventry	Comitted		7,394,419	686,965			345 A/B
Unit 02 Old Cransley Iron Works	Northampton Road, Broughton	Kettering Ind	Kettering	2019/2020	KET/2015/0911	156,659	14,554	100,000 - 200,000 sq.ft.		3.638533803 A
Zone A Plot 2, North Kettering Business Park	Glendon Road	Kettering Ind	Kettering	2021 or 2022	KET/2018/0739	338,043	31,405	300,000 - 400,000 sq.ft.		7.851322941 A
Unit 03B Old Cransley Iron Works	Northampton Road, Broughton	Kettering Ind	Kettering	2023 or 2024	KET/2013/0827	270,004	25,084	200,000 - 300,000 sq.ft.		2.7 A
Kettering South (land at) (Off A509 north of Isham A509		Kettering Ind	Kettering	Not Known- likely prior 203	KET/2018/0965	2,310,000	214,606	500,000+ sq.ft.		136 B
Plot 300, Kettering Gateway	Kettering Rd	Kettering Ind	Kettering	Not Known- likely prior 203	KET/2018/0774	150,000	13,935	100,000 - 200,000 sq.ft.		70 B
Plot 4a, Sergio Park	A6/A14 Junction 10, Burton Latimer Road	Kettering Ind	Kettering	Not Known- likely prior 203	KET/2018/0774	202,703	18,832	200,000 - 300,000 sq.ft.		4.707935785 A
Plot 4, Kettering Gateway	Kettering Rd	Kettering Ind	Kettering	Not Known- likely prior 203	KET/2018/0774	692,620	64,347	500,000+ sq.ft.		16.08664146 B
	Land South of Fradley Park	Lichfield Ind	Lichfield	Allocated Site	LDC Local Plan A1	n/a	72,800	n/a		18.2 A/B
	Land East of A38	Lichfield Ind	Lichfield	Allocated Site	LDC Local Plan A1	n/a	20,400	n/a		5.1 B/C
Land At Easthill Farm Wood End Lane	Fradley Lichfield Staffordshire	Lichfield Ind	Lichfield	Comitted	16/00586/REMM	856,064	79,531	500,000+ sq.ft.		24.34 A
Land At Easthill Farm Wood End Lane	Fradley Lichfield Staffordshire	Lichfield Ind	Lichfield	Comitted	16/00585/REMM	859,422	79,843	500,000+ sq.ft.		24.34 A
Land North East Of Wood End Lane	Fradley Lichfield Staffordshire	Lichfield Ind	Lichfield	Comitted	17/00276/FULM	209,002	19,417	200,000 - 300,000 sq.ft.		5.26 A
Land Off Nanscawen Road	Fradley Lichfield Staffordshire	Lichfield Ind	Lichfield	Comitted	17/00059/FULM	354,068	32,894	300,000 - 400,000 sq.ft.		8.26 A
Land South Off Nanscawen Road	Fradley Park Lichfield Staffordshire	Lichfield Ind	Lichfield	Pending	19/01628/OUTM	369,999	34,374	300,000 - 400,000 sq.ft.		8.26 A
Plot D104	Fradley 432, Fradley Park, Halifax Avenue	Lichfield Ind	Lichfield	Under Construction Due 20:	18/01594/FULM	431,700	40,106	400,000 - 500,000 sq.ft.		22 A (2)
Unit C Liberty Park	Burton Old Road Lichfield Staffordshire	Lichfield Ind	Lichfield	Under Construction Due 20:	18/00648/FULM	115,000	10,684	100,000 - 200,000 sq.ft.		2.670964985 A (2)
Land to South East Junction 10	Trinty Road, Dordon	North Warwickshire Ind	Tamworth	Proposed	PAP/2014/0648 A	861,112	80,000	500,000 sq.ft. +		10.27 A
Unit 1	Land At J16 M1 Weedon Road Upper Heyford	Northampton Core Ind	Northampton	Proposed	N/2018/0128	257,250	23,899			14.3 A/B

Warehousing and Logistics in Leicester and Leicestershire: Managing growth and change, April 2021 (amended March 2022)
 Leicester and Leicestershire Authorities, Final Report

Property Name	Property Address	Submarket Name	City	Building Status	Planning App	NIA sqft	NIA sqm	Size Band	Land Area (AC)	Timescales ABC (A<5,B5-10,C10+)
Unit 2	Land At J16 M1 Weedon Road Upper Heyford	Northampton Core Ind	Northampton	Proposed	N/2018/0128	456,000	42,364		22.4	A/B
Unit 3	Land At J16 M1 Weedon Road Upper Heyford	Northampton Core Ind	Northampton	Proposed	N/2018/0128	338,000	31,401		17.7	A/B
Unit 5	Land At J16 M1 Weedon Road Upper Heyford	Northampton Core Ind	Northampton	Proposed	N/2018/0128	308,000	28,614		5.4	A/B
Unit 6	Land At J16 M1 Weedon Road Upper Heyford	Northampton Core Ind	Northampton	Proposed	N/2018/0128	199,000	18,488		18.1	A/B
Northampton Gateway Rail Freight Interchange	Junction 15 of the M1 motorway	Northamptonshire South Ind	Northampton	Committed, Planning Approve	Committed	5,037,505	468,000		210	A/B
	AL1 - Land at Bell Plantation, Towcester [35 ha]	Northamptonshire South Ind	Northampton	Emerging Local Plan Allocations			0			A/B
	AL2 - Land at Woolgrowers Field, Towcester [4.5 ha]	Northamptonshire South Ind	Northampton	Emerging Local Plan Allocations			0			A/B
	AL3 - Land at Tiffield Lane, Towcester [21 ha]	Northamptonshire South Ind	Northampton	Emerging Local Plan Allocations			0			A/B
	AL4 - Employment Land, Shacks Barn, Whittlebury [10 ha]	Northamptonshire South Ind	Northampton	Emerging Local Plan Allocations			0			A/B
	AL5 - Land at former Furto Pit, Old Stratford / Cosgrove [1	Northamptonshire South Ind	Northampton	Emerging Local Plan Allocations			0			A/B
	Silverstone Park (WNJCS - Policy E5)	Northamptonshire South Ind	Northampton	Under Construction	S/2019/0443/EIA		59,000		23.6	A (2)
	Land North of Tunweston Road and East of Northampton	Northamptonshire South Ind	Northampton	Under Construction	S/2017/0057/COND		15,000		6	A (2)
Zone H, Plot 1	Pineham - Rothersthorpe Road / Style Way Kislisbury	Northamptonshire South Ind	Northampton	Under Construction	S/2014/1603/EIA	489,617	45,487		11.37173794	A (2)
Zone H Plot 2	Pineham - Rothersthorpe Road / Style Way Kislisbury	Northamptonshire South Ind	Northampton	Under Construction	S/2014/1603/EIA	579,845	53,869		10.78	A (2)
Unit 9	Land West Of M40 Overthorpe Road Warkworth Banbury	Northamptonshire South Ind	Northampton	Under Construction	S/2019/1135/MAF	126,000	11,706		3.79	A (2)
Unit 10	Land West Of M40 Overthorpe Road Warkworth Banbury	Northamptonshire South Ind	Northampton	Under Construction	S/2019/1135/MAF	172,000	15,979		4.09	A (2)
	Northampton Junction 16 Strategic Employment Site (WN	Northamptonshire South Ind	Northampton	Under Construction	S/2016/0400/EIA		590,000		147.5	A / B
	Faultlands	Nuneaton And Bedworth Ind	Nuneaton	Allocated Site	Local Plan Allocation EMP1		105,720	n/a	26.43	B
	Pickard Way	Nuneaton And Bedworth Ind	Nuneaton	Allocated Site	Local Plan Allocation EMP2		73,040	n/a	18.26	B
	Prologis extension	Nuneaton And Bedworth Ind	Nuneaton	Allocated Site	Local Plan Allocation EMP3		21,160	n/a	5.29	B
	Coventry Road	Nuneaton And Bedworth Ind	Nuneaton	Allocated Site	Local Plan Allocation EMP4		38,360	n/a	9.59	B
	Wilsons Lane	Nuneaton And Bedworth Ind	Nuneaton	Allocated Site	Local Plan Allocation EMP6		8,240	n/a	2.06	B
	Bowling Green Lane	Nuneaton And Bedworth Ind	Nuneaton	Allocated Site	Local Plan Allocation EMP7		105,080	n/a	26.27	B
	Land between Bayton Rd & Blackhorse Rd	Nuneaton And Bedworth Ind	Nuneaton	Committed (planning expiri		31558	197,938	100,000 - 200,000 sq.ft.	4.597264932	A
122 Coventry Road	St Georges Way	Nuneaton And Bedworth Ind	Nuneaton	Under Construction		31062	232,005	200,000 - 300,000 sq.ft.	5.388505328	A
	Prologis Park, Oxford Road, Ryton on Dunsmore	Rugby Ind	Rugby	Committed	R17/2019	482,233	44,801		13.74	A
Unit B	Land South Of Solihull Parkway North Of Blackfirs Lane	Solihull Ind	Birmingham	Completed	PL/2016/02001/PP	209,880	19,499		4.874627226	A (2)
JLR	Land Near Solihull Football Club Damson Parkway	Solihull Ind	Birmingham	Under Construction	PL/2016/03131/PP	988,127	91,800		22	A (2)
Drakelow Park	Buton on Trent	South Derbyshire Ind	Derby	Committed	9/2009/0341	545,084	50,640	500,000+ sq.ft.	12.660012217	B
Top Hat One, Unit 3000	Park Avenue, Dove Valley Park, Foston	South Derbyshire Ind	Derby	Committed	9/2010/0871	235,730	21,900	200,000 - 300,000 sq.ft	5.475005342	A
PGDI III Ltd	Dove Valley Park, Park Avenue, Foston Derby	South Derbyshire Ind	Derby	Committed	DMPA/2019/1205	540,477	50,212	500,000+ sq.ft.	12.36	A
Land N of Dove Valley	Dove Valley Park, Park Avenue, Foston Derby	South Derbyshire Ind	Derby	Committed	9/2017/0816	630,291	58,556	500,000+ sq.ft.	14.64	A
Axis 50	Formerly known as Burnaston Cross, Land SK2929 1430, E	South Derbyshire Ind	Derby	Pending	DMPA/2019/0948	1,076,391	100,000	500,000+ sq.ft.	25.00002323	NA
	South West Rugby	Rugby	Rugby	Allocated Site		tbc	140,000		35	B/C
	Rugby Radio Station	Rugby	Rugby	Allocated Site		tbc	64,000		16	B
	Britvic Soft Drinks Ltd, Aventine Way, Brownsover, Rugby.	Rugby	Rugby	Under Construction	R15/0984 & R17/1	105,755	9,825		2.456242626	A (2)
	St Georges Way	Nuneaton And Bedworth Ind	Nuneaton	Constructed		36078	230,384	200,000 - 300,000 sq.ft.	4.14 ha	A

APPENDIX E: Map of Strategic Warehousing Locations by age



APPENDIX F: Development Size and Floor Space: Selected Developments

Scheme	Floor Space (000s sqm)	With Landscaping		Without Landscaping	
		Land Area (ha)	Plot Ratio	Land Area (ha)	Plot Ratio
SRFIs					
DIRFT III	731	345	21%	184	40%
East Midlands Gateway	555	336	17%	177	31%
Northampton Gateway	468	219	21%	145	32%
SIFE	190	79	24%	56	34%
West Midlands Interchange	743	297	25%	190	39%
Non Rail-served - total with landscaping					
Land at Glebe Farm, Magna Park, Known as Magna Park South	279	88	32%	54	52%
Land at Mere Lane, Magna Park North	420	239	18%	135	33%
Nailstone Colliery	122	29	42%	29	42%
B4114 West of St Johns, Enderby	107	33	32%	23	46%
Hinckley Island Unit B	46	11	44%	11	44%
Unit 1 Mountpark II, Bardon Hill	57	16	36%	14	41%

General Disclaimer

This report has been prepared by GL Hearn Limited (GL Hearn) in favour of [Harborough District Council] (“the Client”) and is for the sole use and benefit of the Client in accordance with the agreement between the Client and GL Hearn dated [April 2020] under which GL Hearn’s services were performed. GL Hearn accepts no liability to any other party in respect of the contents of this report. This report is confidential and may not be disclosed by the Client or relied on by any other party without the express prior written consent of GL Hearn.

Whilst care has been taken in the construction of this report, the conclusions and recommendations which it contains are based upon information provided by third parties (“Third Party Information”). GL Hearn has for the purposes of this report relied upon and assumed that the Third Party Information is accurate and complete and has not independently verified such information for the purposes of this report. GL Hearn makes no representation, warranty or undertaking (express or implied) in the context of the Third Party Information and no responsibility is taken or accepted by GL Hearn for the adequacy, completeness or accuracy of the report in the context of the Third Party Information on which it is based.

Freedom of Information

GL Hearn understands and acknowledges the Authority’s legal obligations and responsibilities under the Freedom of Information Act 2000 (the “Act”) and fully appreciates that the Authority may be required under the terms of the Act to disclose any information which it holds. GL Hearn maintains that the report contains commercially sensitive information that could be prejudicial to the commercial interests of the parties. On this basis GL Hearn believes that the report should attract exemption from disclosure, at least in the first instance, under Sections 41 and/or 43 of the Act. GL Hearn accepts that the damage which it would suffer in the event of disclosure of certain of the confidential information would, to some extent, reduce with the passage of time and therefore proposes that any disclosure (pursuant to the Act) of the confidential information contained in the report should be restricted until after the expiry of 24 months from the date of the report.