

HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE

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Appendix 1

Warehousing and Logistics in Leicester and Leicestershire: Managing growth and change Leicester and Leicestershire Authorities (amended 2022)

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

Leicester and Leicestershire Authorities

Final Report

April 2021 (amended March 2022)

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Public

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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.

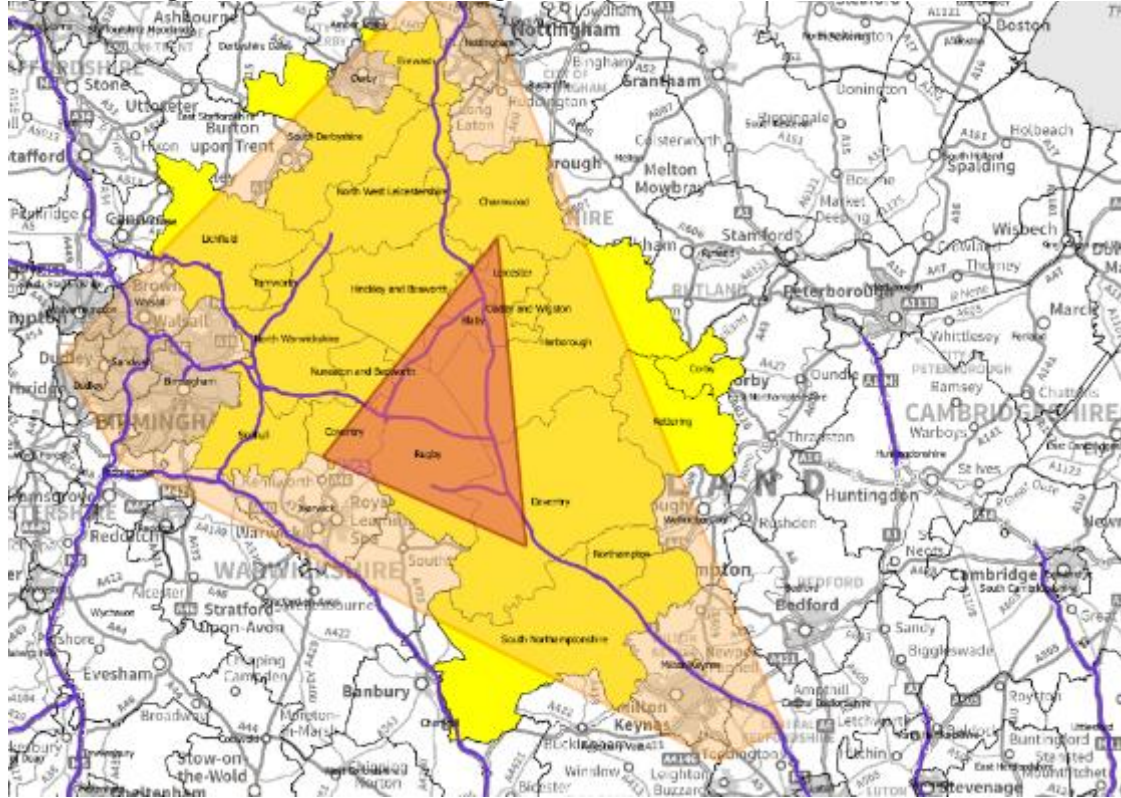
Study Area

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

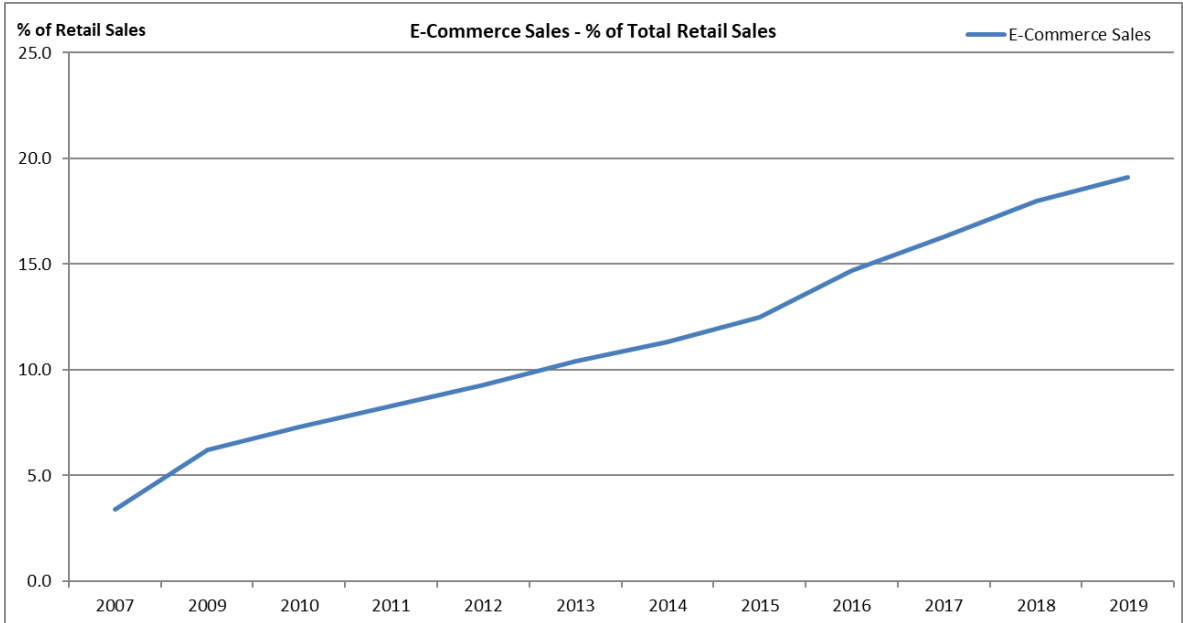
- 2.40 The *National Planning Statement (NPS) for National Networks* was published by the Department for Transport (DfT) in December 2014. It includes the Government's current policies concerning the development of Strategic Rail Freight Interchanges (SRFIs), providing planning guidance for the promoters 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.

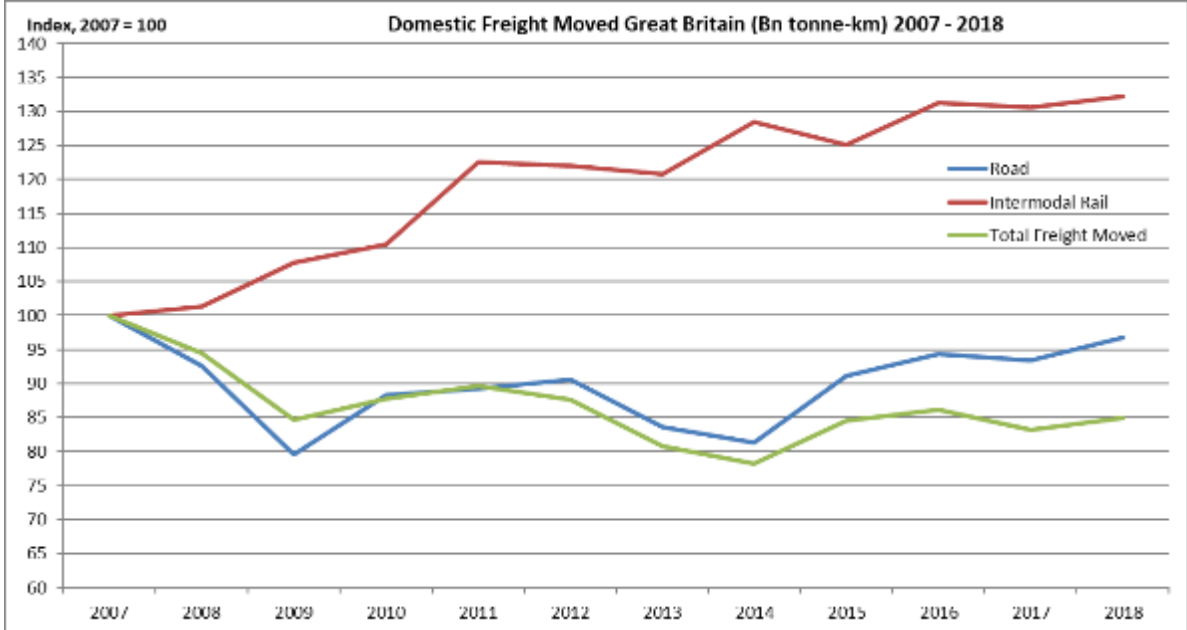
2.66 This has implications for Leicestershire. Its central location to the country at large means it will almost certainly be a sought-after location for large scale CFCs. The large urban centres of Leicester, Nottingham and Derby also implies demand for smaller scale cross-dock type facilities. Further, 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

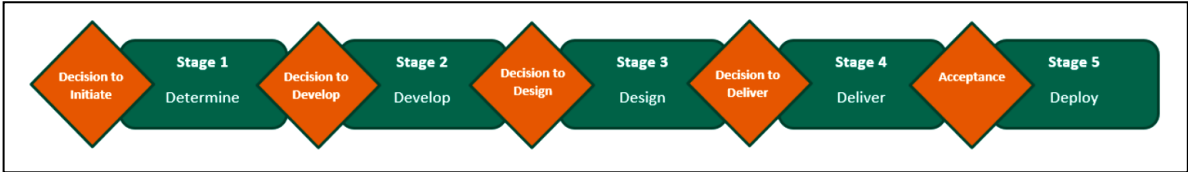
Scheme and Description	Current Position
<p><i>Felixstowe to Nuneaton via Ely and Peterborough capacity enhancement.</i> Works at various locations, including Syston-Leicester-Wigston, to generate additional freight capacity between Felixstowe and Nuneaton. Effectively Phase 2 of the route upgrade (Phase 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

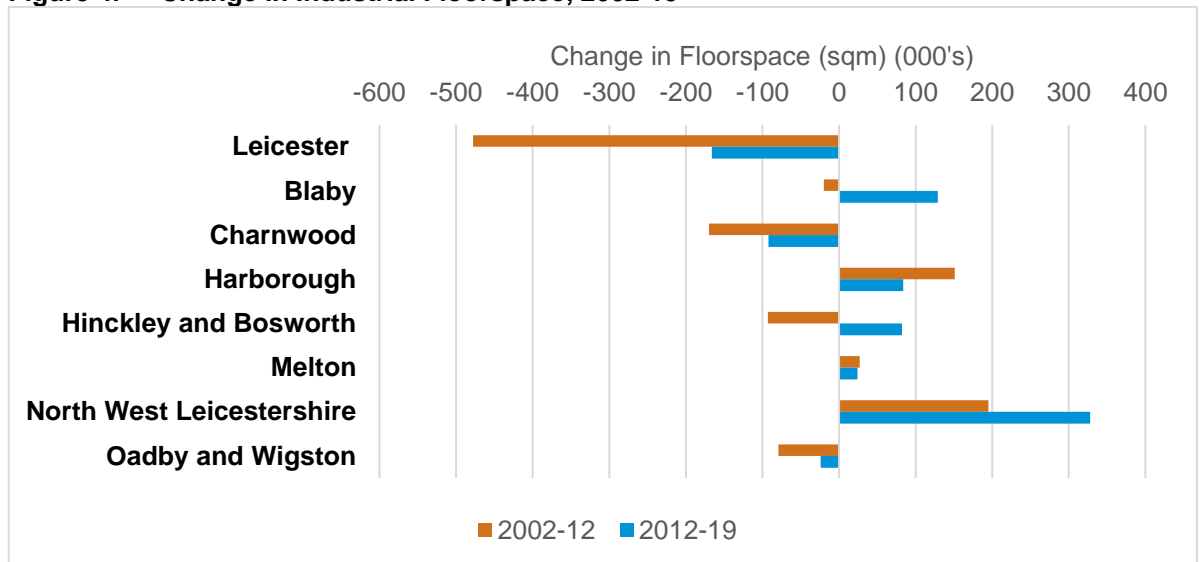
	'19 Industrial Floorspace ('000 sq.m)	% County Total	Change 02'-12'	Change 12'-19'
Leicester City	2,439	26%	-16%	-6%

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



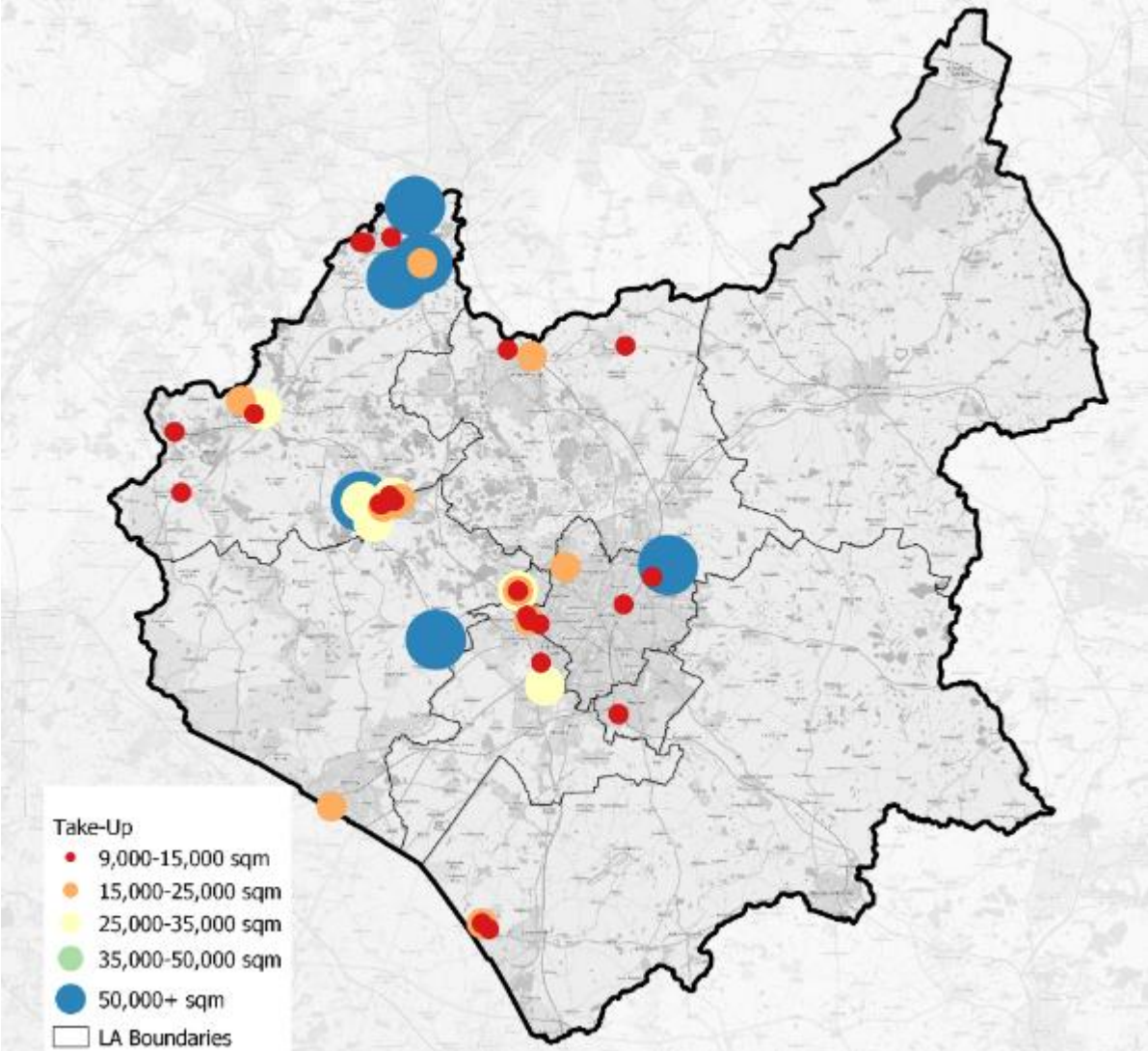
Source: VOA Business Floorspace Statistics

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).

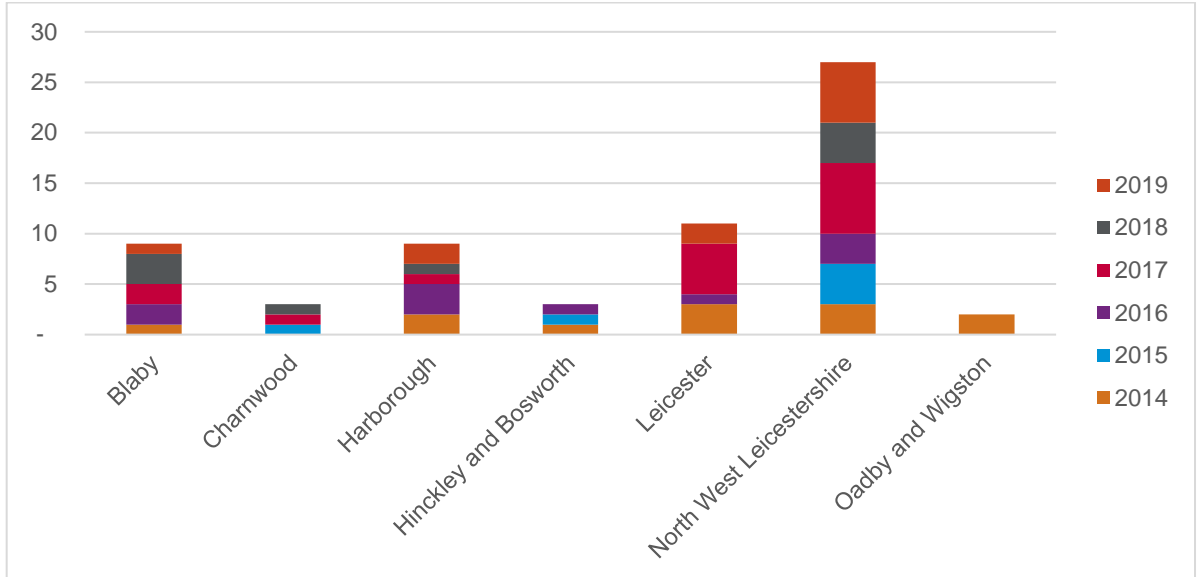
Figure 5: Strategic Industrial transactions in Leicester and Leicestershire since 2014



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.

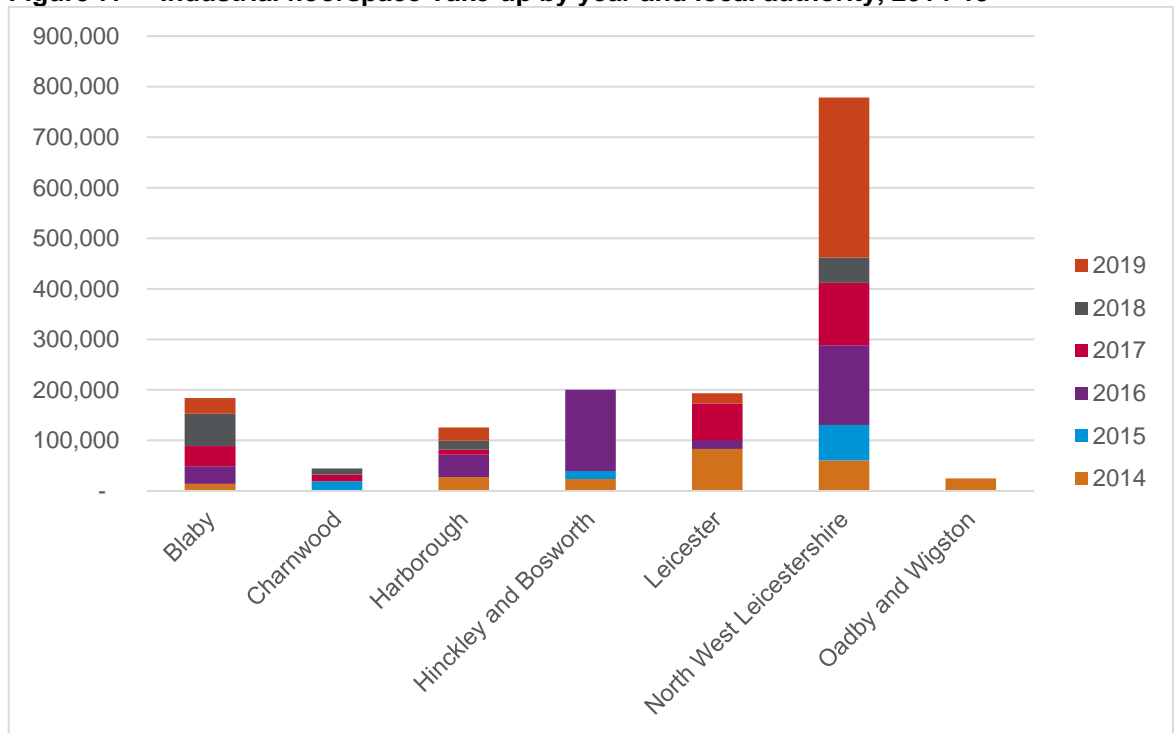
Figure 6: Industrial deals in Leicester and Leicestershire by year and local authority, 2014-
19



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.

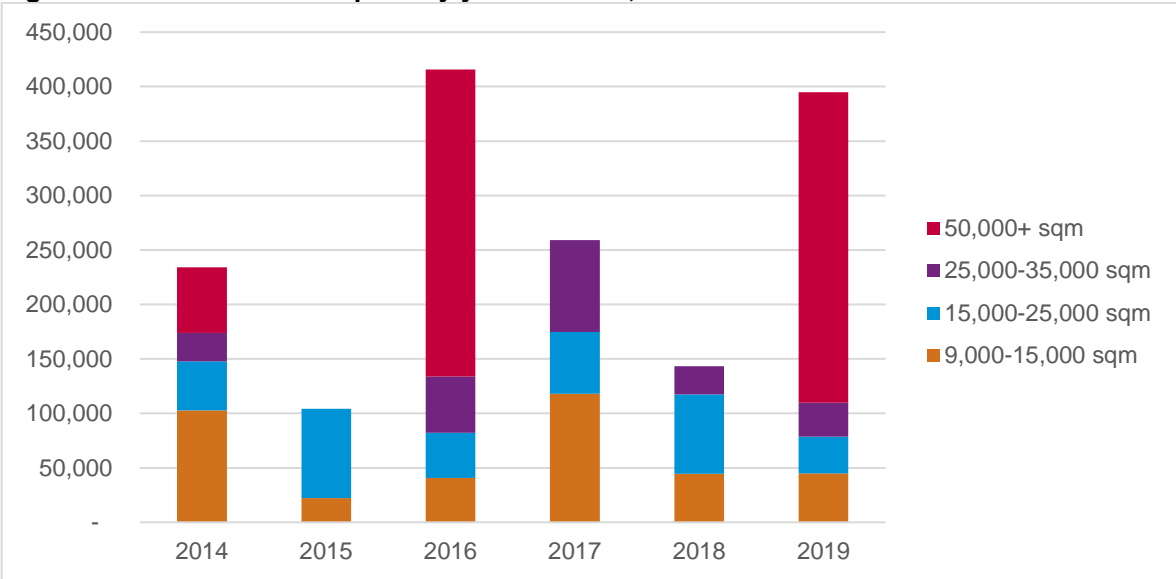
Figure 7: Industrial floorspace Take-up by year and local authority, 2014-19



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)

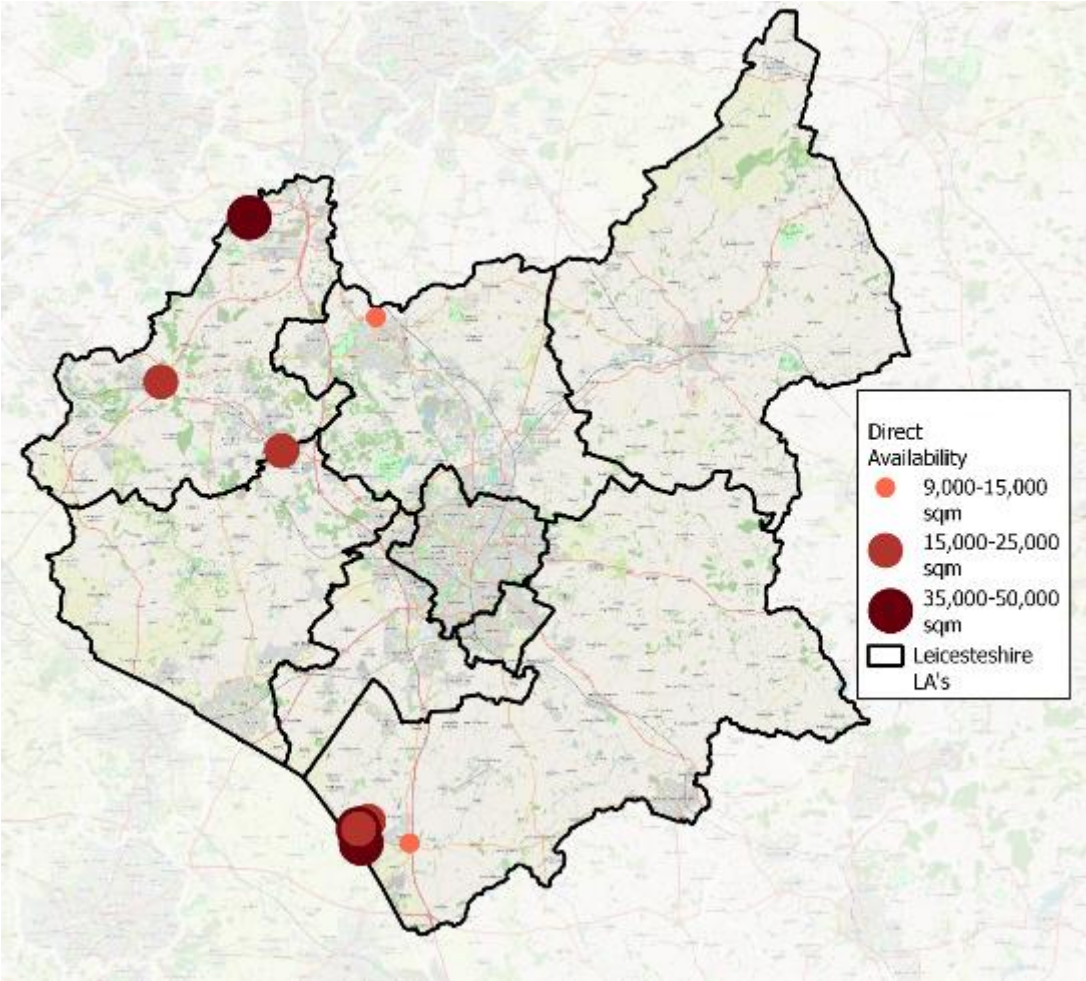
4.38 This rental growth has been driven primarily by demand from retailers and delivery specialists. The majority of property development in recent years has been pre-let, which has contributed to a lack of available supply and subsequently rising rental values.

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.

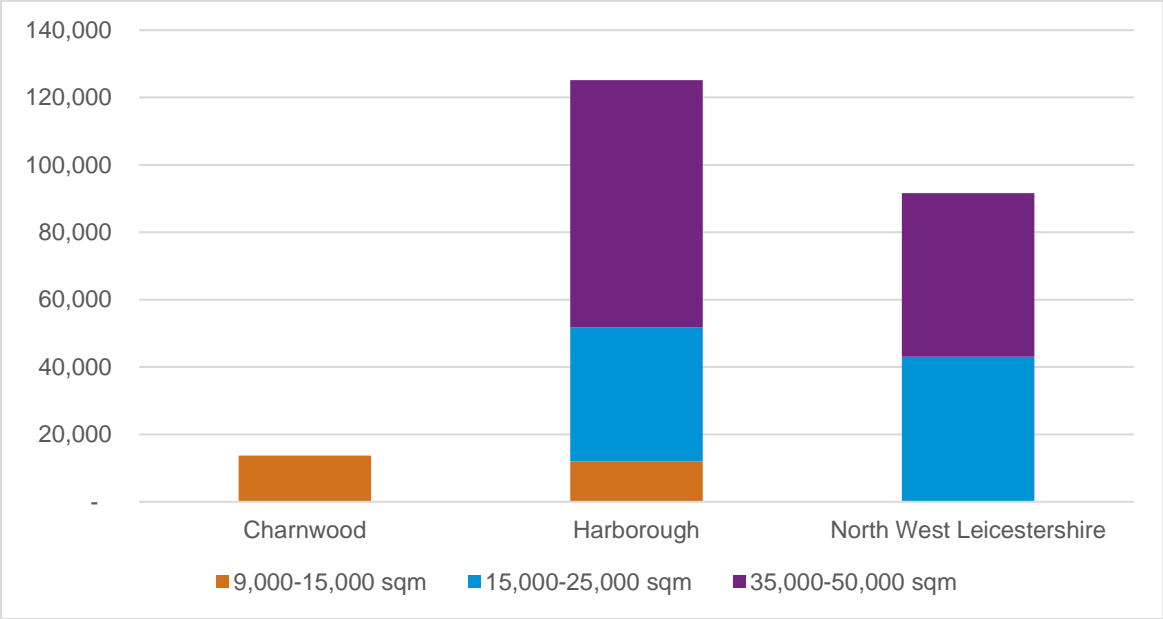
Figure 9: Industrial availability in Leicester & Leicestershire



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.

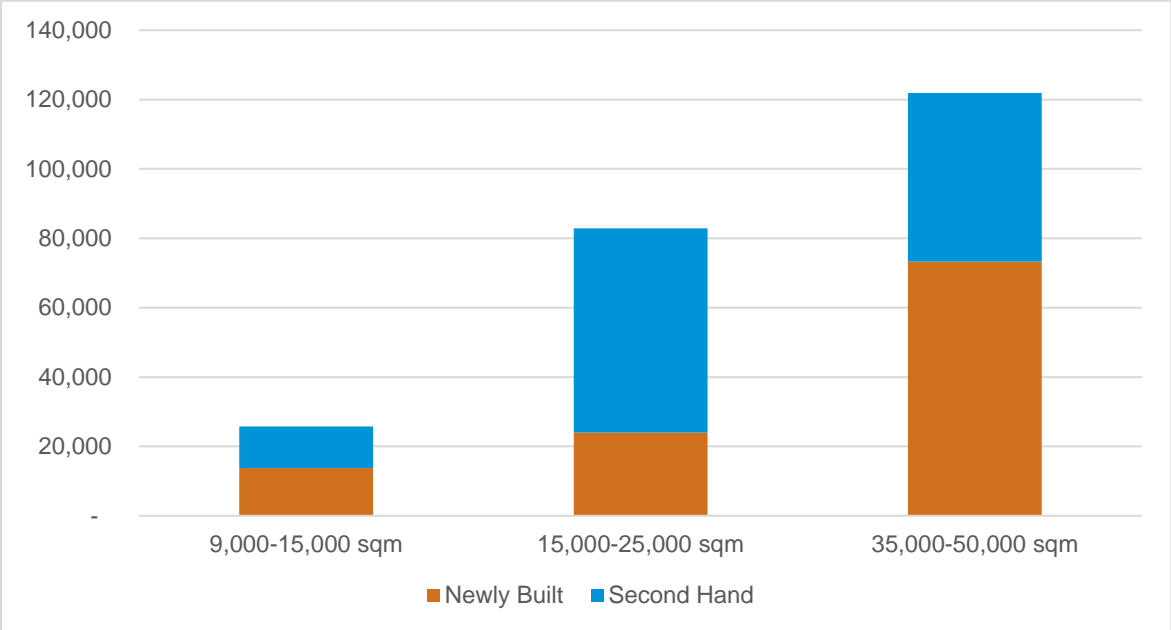
Figure 10: Direct availability across Leicester and Leicestershire by local authority



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.

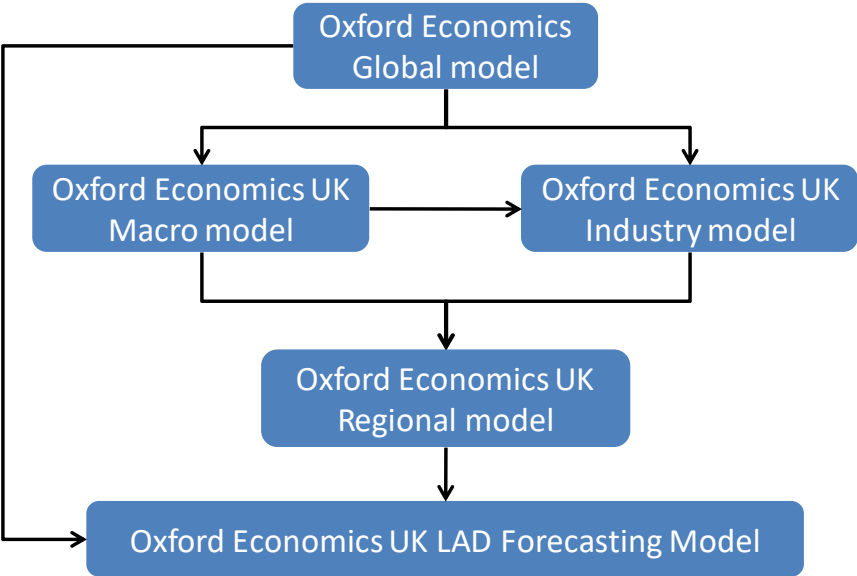
7.2 This section considers two models to forecasting future floorspace needs for warehousing, econometric forecasts for labour demand and past completions trends.

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



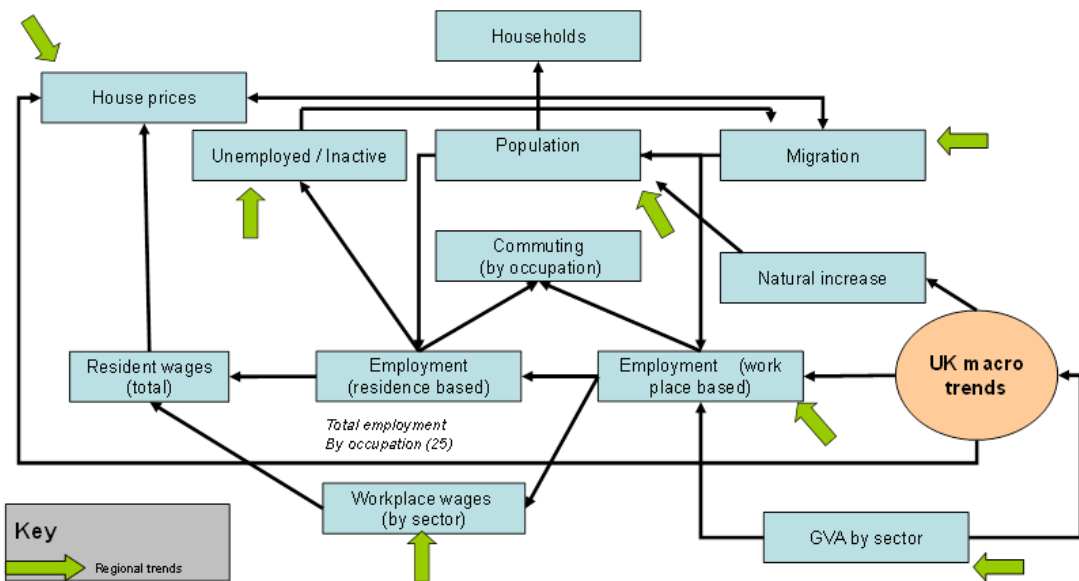
Source: Oxford Economics, 2020

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%

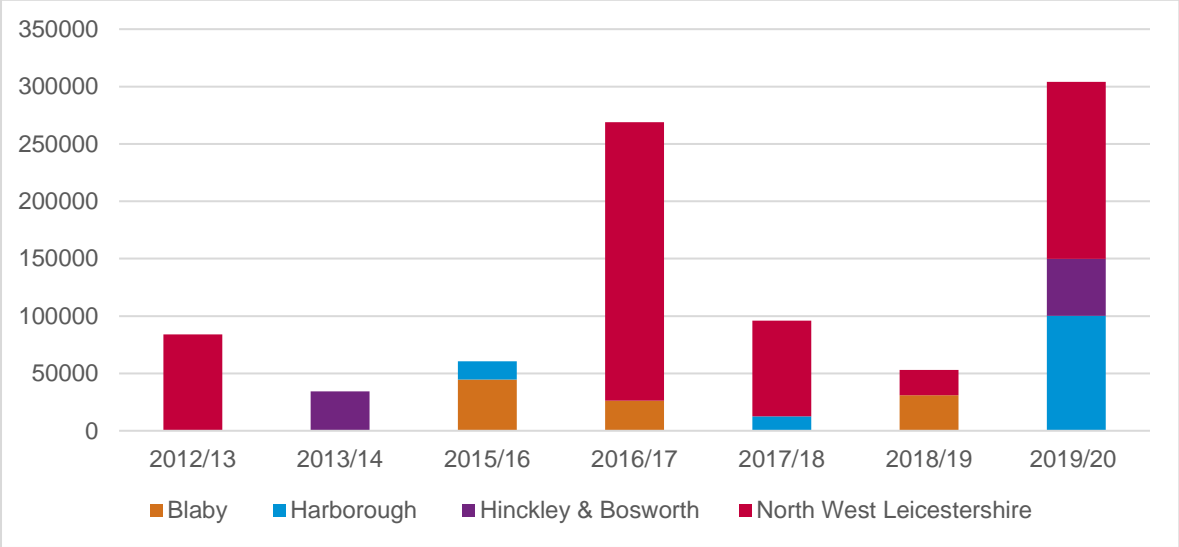
Source: GLH Analysis of Oxford Economics Data

- 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%
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 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.

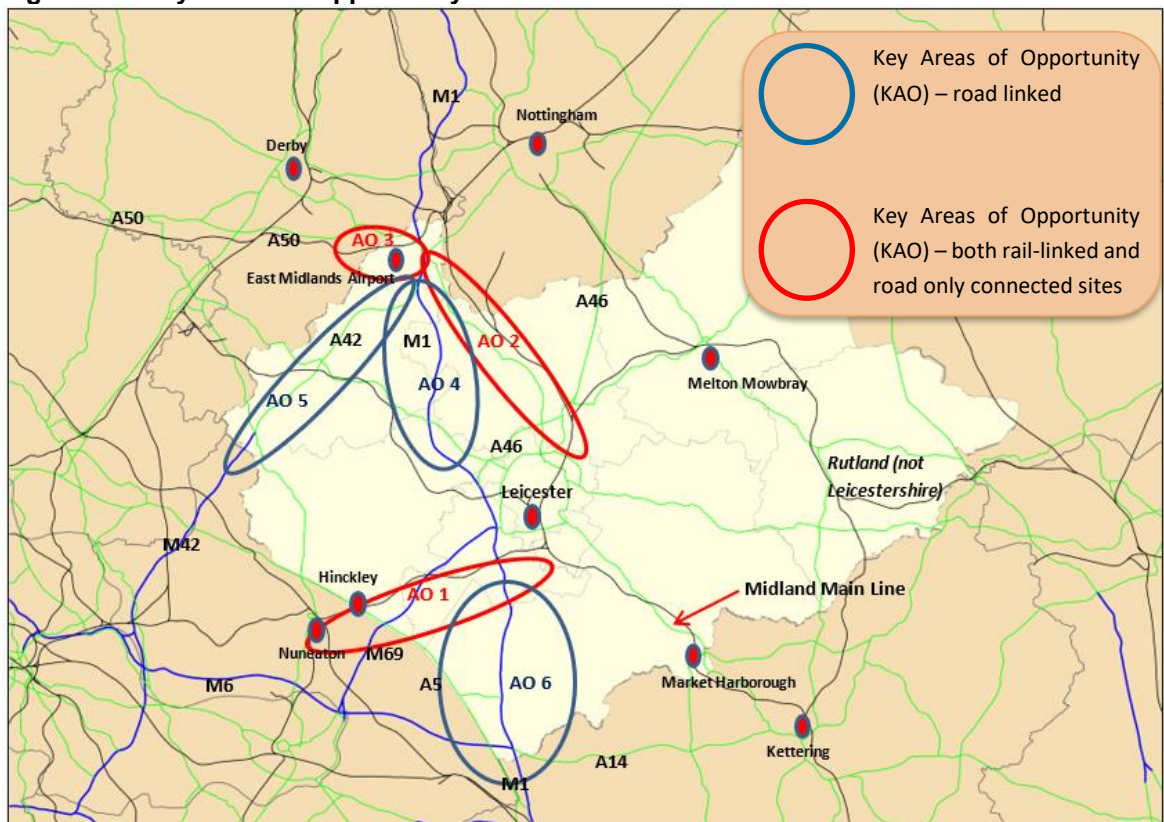
11 FUTURE DEVELOPMENT – AREAS OF OPPORTUNITY

- 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

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<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

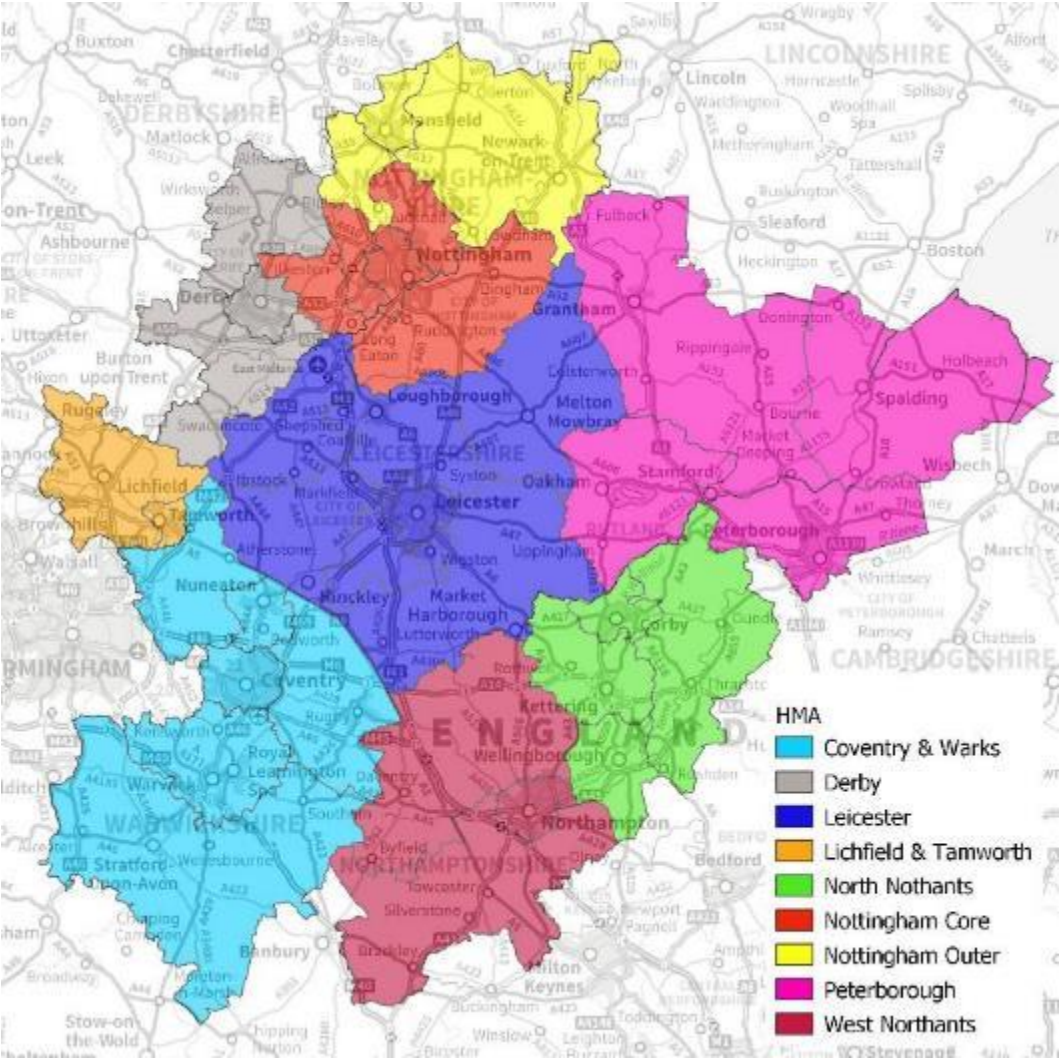
7.8.9. Sales, operatives, elementary	46%	3,599	4,541	2,519	3,178
Total	100%	7,823	9,871	7,823	9,871

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.

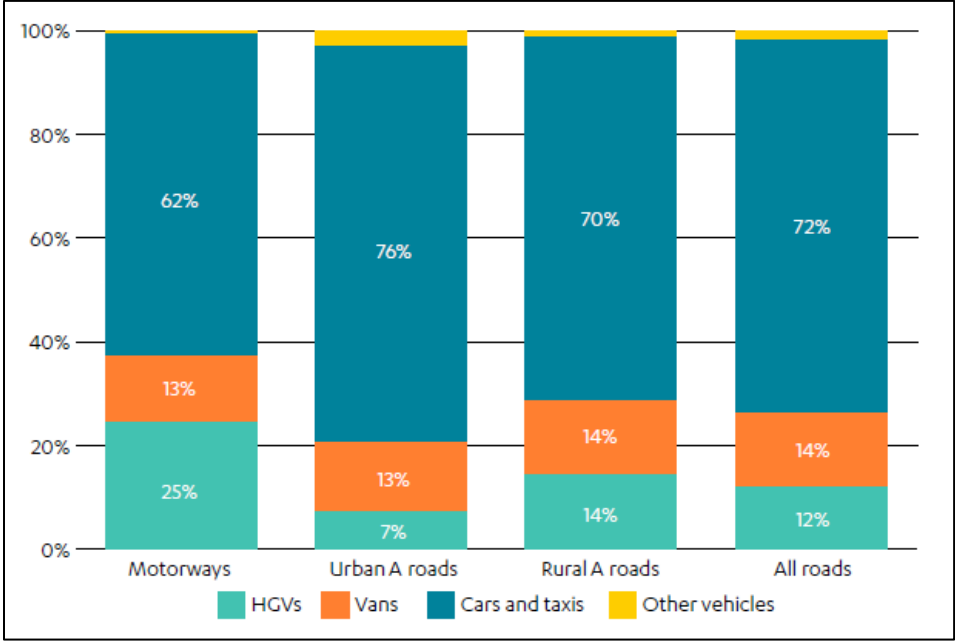
16.14 It is thus recommended that the authorities support and encourage through local plans final mile delivery utilisation of sustainable methods of transportation such as bikes and electric vehicles. This will encourage reduced congestion and better compatibility with other uses such as housing. These 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,

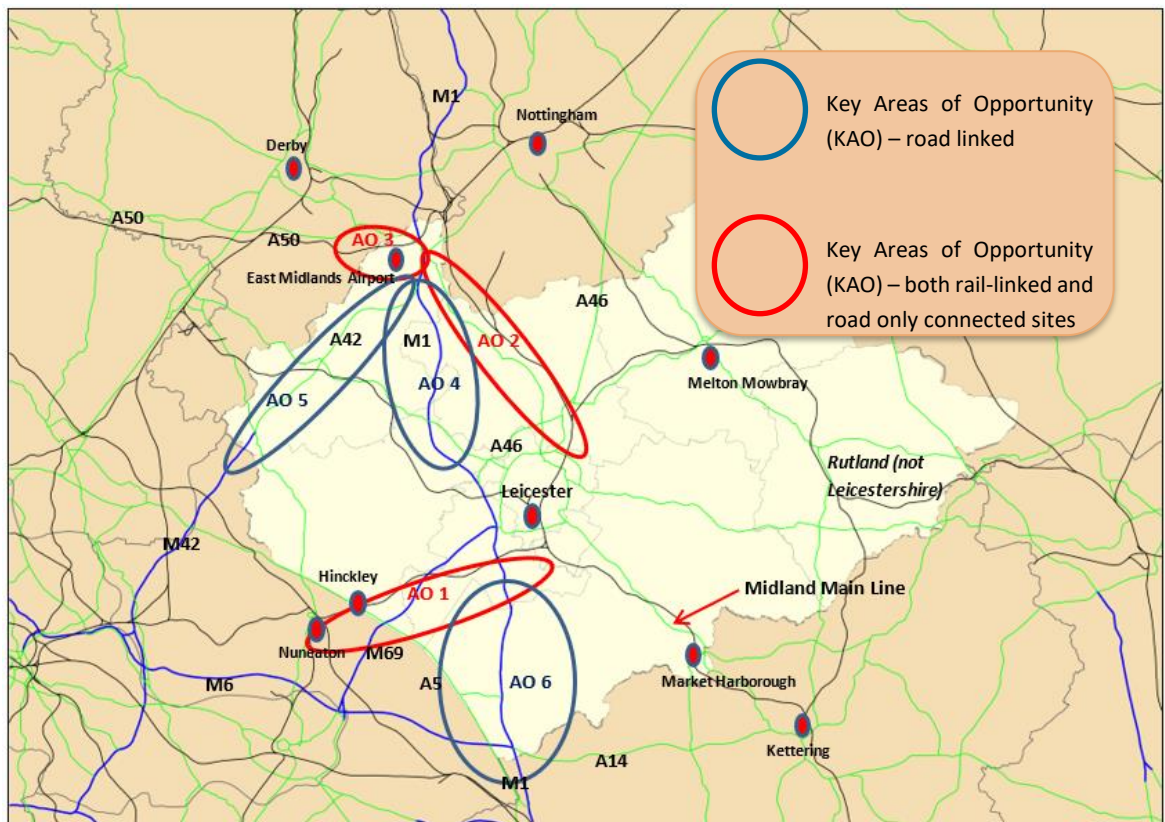
recognising that for many occupiers road access remains paramount. An optimum position at 2041 would be that 60% of new warehouses are provided at rail served sites however planning for an average of 43% builds is a graduated rate of achieving this.

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

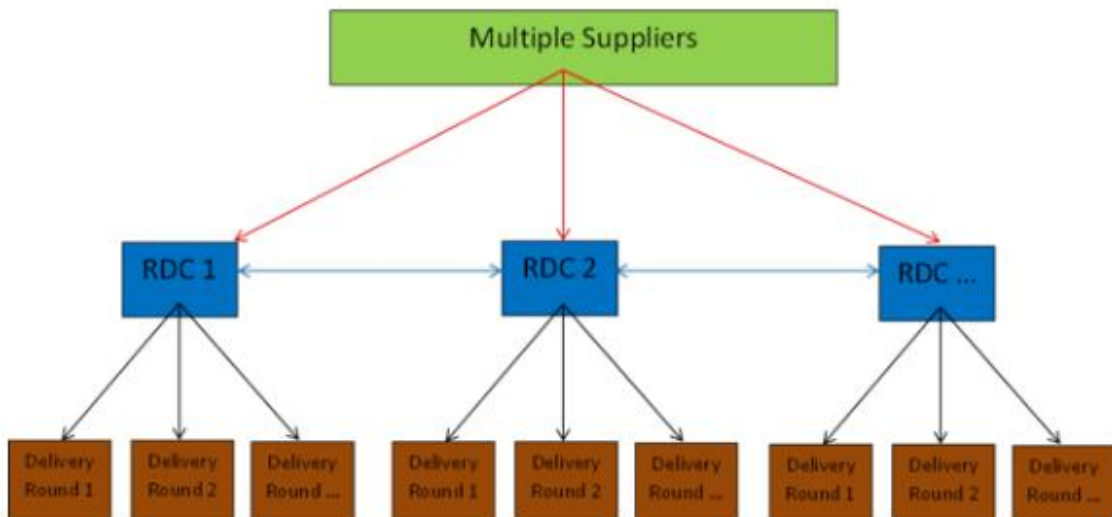


Diagram 2: E-commerce – Logistics Model 2

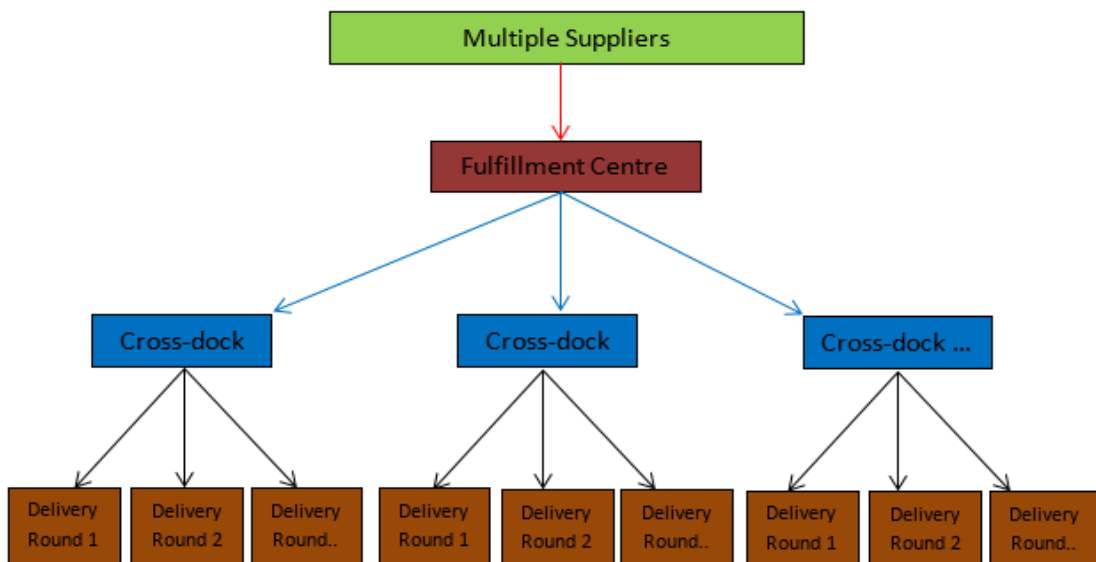
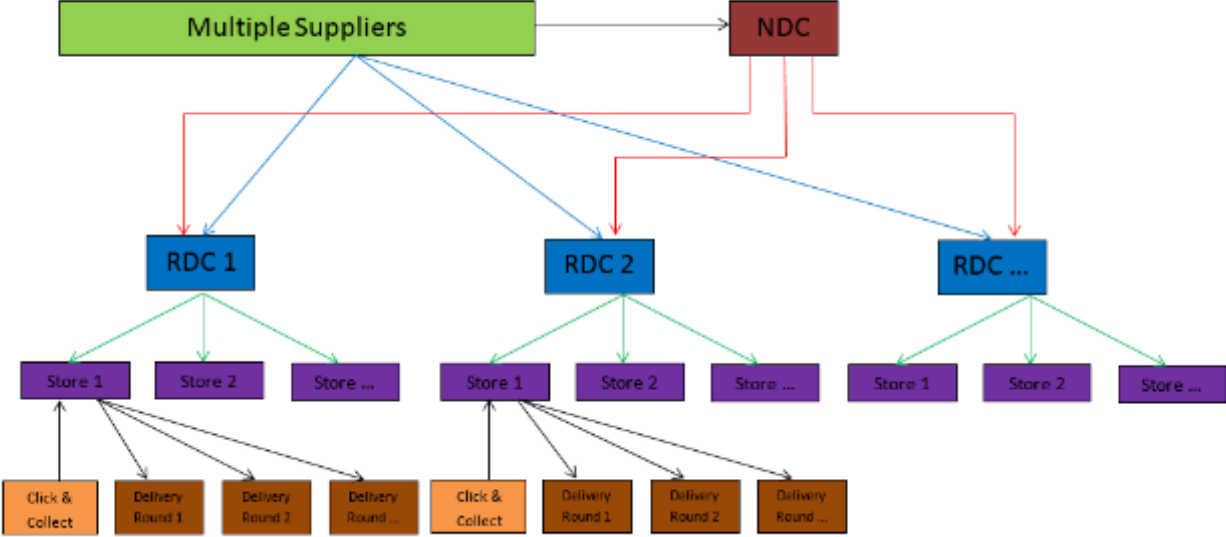


Diagram 3: E-commerce – Logistics Model 3



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

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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

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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

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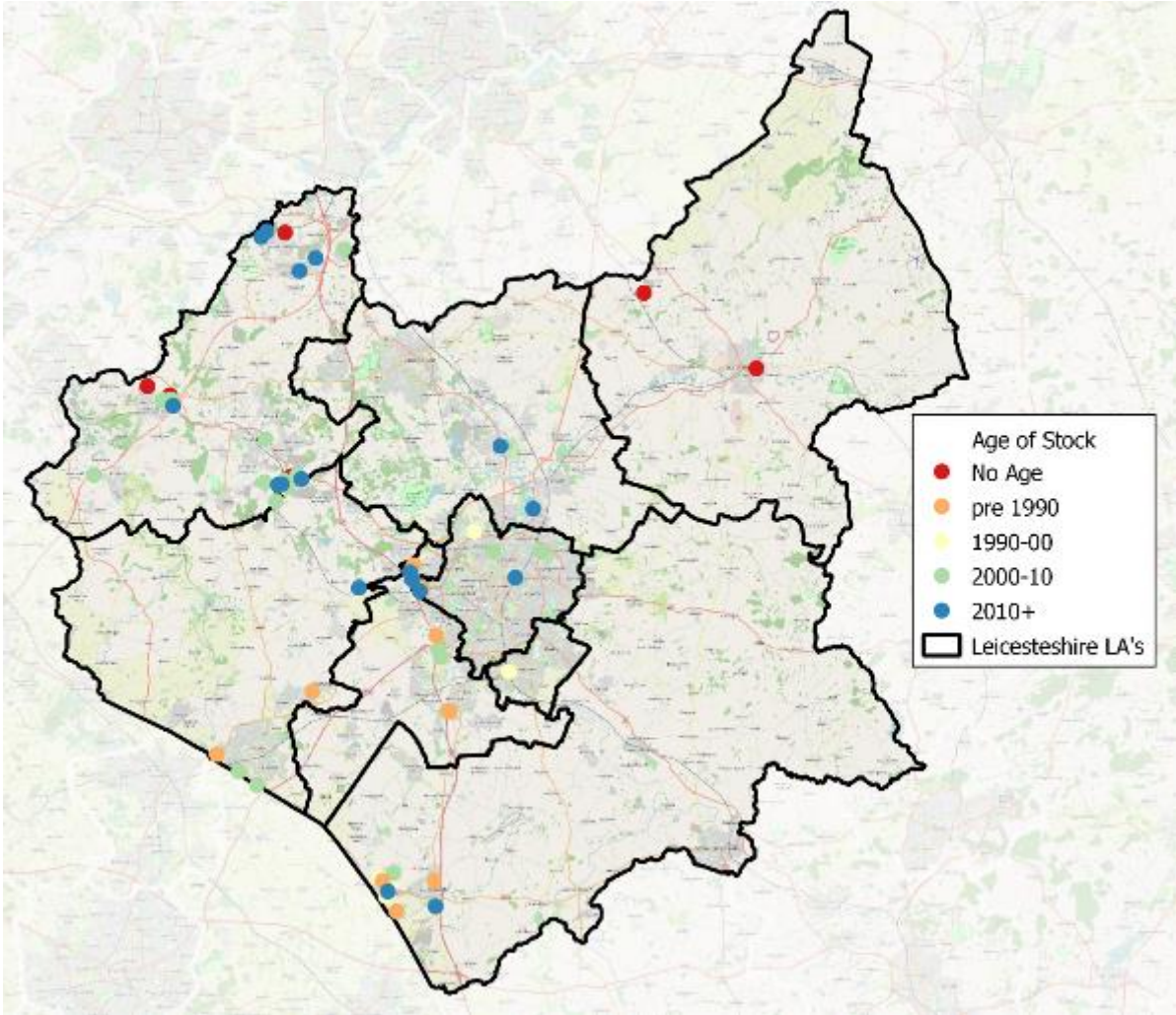
APPENDIX D: Wider Area Supply April 2020

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 Al	n/a	72,800	n/a		18.2 A/B
	Land East of A38	Lichfield Ind	Lichfield	Allocated Site	LDC Local Plan Al	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

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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 Kislingbury	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 Kislingbury	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.

Appendix 2

West Midlands Strategic Employment Sites Study (2021)

**AVISON
YOUNG**

 **ARCADIS** | Design & Consultancy
for natural and
built assets

West Midlands Strategic Employment Sites Study – Final Report

May 2021

Foreword

For some time it has been considered that there is a lack of strategic employment land available within the West Midlands, and similarly that there has been little conclusive assessment of what attributes strategic land should possess. There has been no region wide assessment of the subject matter since the 2015 West Midlands Strategic Employment Sites Study undertaken by PBA and JLL. Since this date the establishment of the WMCA in particular has added a number of technical studies as to the economic benefit of sectoral growth, and the need to ensure a resilient supply of land through the planning process (including The Land Commission, The Regional Industrial Strategy and the Strategic Economic Plan).

This particular commission has sought to provide a high level overview on the availability or scarcity of strategic employment land across the region, as opposed to within particular local authority areas, as well as considering an appropriate definition of the same. The client body has included a wide spread of public sector authorities and LEPs and input has additionally been sought from within the private sector. The brief for the study has focussed purely on supply whilst, of course, “shortage” can only be considered in the context of the balance between supply and need.

The commission also seeks to look forward on a “planning off” and “what if” basis to seek to assess what the capacity for adding additional strategic land into the region’s portfolio could be, and whether the constraints to achieving this (should it be concluded that the demand levels indicate a radical approach being required to introduce additional levels of supply) may require a joined up, region-wide approach to location and site identification.

The work, report and conclusions provide a first step towards painting a picture, and the level of work that will be required to build up a robust assessment of (in particular) need should not be underestimated. The conclusions reached and recommendations however are clear.

The Coronavirus Pandemic

2020 was dominated by the coronavirus pandemic, lockdown and the consequent impacts on the economy. 2021 started with a further national lockdown, but with optimism relating to the rollout of vaccination programmes and confirmation of the ‘roadmap’ to the end of restrictions by the Summer. It remains to be seen whether the full easing of restrictions will happen in June, and the extent to which consumer habits will be changed in the long term will be unclear for some time. The long term consequences for employment development remain, therefore, uncertain.

There is evidence, however, that the initial consequences included a positive impact on the demand for large warehouses and factories across the UK. Covid-19 led to an explosion in e-commerce with the proportion of online sales increasing substantially compared with 2019. Retailers have also been rapidly expanding their online platforms to adjust to this shift in activity. Consequently, supermarkets have been acquisitive.

The Big Box logistics market has been remarkably strong as many of the changes since lockdown, and particularly the shift to online shopping, favoured the sector. This was despite a slow start to 2020 as occupiers awaited the result of the general election and then as decision-making was impacted by Covid-19. Take-up of large Grade A warehouses (9,290+ sqm) across the UK was up 55% during the first half of 2020 compared to 2019. And whilst the greatest demand for logistics space has been in the Big Box market, there

is still strong demand for mid-box and last mile logistics. The e-commerce sector for regional hubs, last-mile logistics operators and parcel delivery companies have placed increasing importance on smaller regional hubs as part of supply chains.

The impact of Covid-19 has also highlighted the need for more contingency stock holding to increase resilience which is expected to be further pronounced by Brexit as occupiers look to meet customer expectations for just in time deliveries. There may also be some reshoring of manufacturing to improve resilience in global supply chains. There is an increased appetite for larger buildings and greater eaves heights to accommodate economies of scale and automation.

Much of the resultant activity has occurred along the M1 corridor with the East Midlands, London and the South East and Yorkshire continuing to dominate take-up. The East Midlands has continued to lead take-up of Big Box units across the UK. The pattern of demand in the West Midlands in 2020 was similar to that in 2019 and, whilst there was very little activity during the first half of 2020, transactions subsequently improved.

The situation will continue to evolve. Whilst the evidence has shown some positive consequences for demand, the logistics market will not be immune to the downturn. Only limited space has come back to the market so far, but this is likely to increase as consumer spending declines. And the pandemic has had a greater adverse impact on manufacturing than other sectors, and particularly the automotive sector.

The occupation and use of offices has been questioned very strongly as a consequence of Covid-19 and the resultant mass working from home experiment. This has brought into question, by some, the long term need for offices into the future but similarly a robust response from others stressing the need for human interaction to be at the very heart of ensuring businesses operate not only efficiently but innovatively and grow the skills of a workforce – all of which can be catered for in many instances only within an office environment. Hence there does remain a question mark over the strength of the office markets (regional v capital; city v out of town; high quality v usable) and the function of offices into the future, and whilst it is likely that overall demand for offices will be diminished to some extent it is not possible at present to predict how impactful that might be in respect of the demand for new office development on strategic employment sites across the West Midlands. However as new office development within this sector has been significantly impacted by viability factors for much of the past 20 years we do not see any Covid related impacts that are likely to alter the direction of travel concluded within this report.

For these reasons, this Study does not speculate about the potential short and longer term consequences for demand. Indeed, there are no references to Covid-19 in the main report. We think it reasonable, however, to adopt a general position that demand is likely to remain at least as strong as has been observed in recent years, so that the pandemic at least reinforces the conclusions that are reached in the body of this report. The situation must, however, be kept under review as the situation develops.

May 2021

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Appendices

- 1 - Broad Site Location Plans

Executive Summary

This Study was commissioned to provide an update to the West Midlands Strategic Employment Sites Study (2015). It provides a commentary on take-up rates in the industrial and office markets in the Study area over the period 2015-2018, and an audit of existing allocated and committed sites in the Study Area (defined on Figure 1.1) which meet the definition of 'Strategic Employment Land' that is adopted for the purposes of this Study.

It also considers the conclusions that were reached by the 2015 Study in relation to those locations in the Study Area that have the potential to provide a supply of additional strategic employment sites in the future. The Study does not seek to predict future need but, as the remit evolved, there has been a high level assessment as to the extent to which certain locations / sites might be able to contribute to identified shortfalls in supply. As such, it provides a first step contribution to the evidence base that will inform future Local Plan reviews across the sub region.

The publication of this Study has been delayed by a combination of factors, including the consideration of comments on scope and methodology that have been made on an informal basis by both public and private sectors. Consideration has been given to updating the report at this point. However, the data collected covers the period 2015-2018, and with reference also to Q1-Q3 2019. Moreover, 2020 was unrepresentative and, for the reasons given in the Foreword, the Study does not speculate about the potential consequences of the pandemic for demand. For these reasons, the Study reports on the position as at the end of 2019 and relies on the data collected according to the original study brief. **Consequently 'present tense' references to data collected throughout the report are not related to the date of its publication, but to the time that the data was collected.**

The Study has been informed by engagement with landowners, developers and promoters, with the 24 Local Authorities within the Study Area, and with three Local Enterprise Partnerships, as well as the West Midlands Combined Authority and Staffordshire County Council. The key messages arising from stakeholders are summarised below.

Private Sector: there is general agreement/perception that the availability and choice of existing and new space under construction is at a very low level and that, if this is restricting new development activity, there needs to be a collective political will to address the limited supply of Strategic Employment Sites going forward to assist in remedying this. In this context, stakeholders viewed the preparation of the Study as having potential to (i) provide an important contribution to the evidence base that will inform Local Plan reviews across the Study Area; and (ii) set the agenda for the commissioning of further work needed to advance the debate, which it was felt by most commentators should include an econometric demand forecast to enable the shortfall to be quantified, particularly by reference to occupational needs, and a study of modern business requirements.

Private sector stakeholders generally:

- supported the definition of 'Strategic Employment Land' adopted for the Study;
- believed local plans should distinguish between sites that may accommodate strategic and local needs;
- welcomed the 'policy off' approach to the consideration of appropriate locations for Strategic Employment Sites given the likelihood that a substantial number could be within the green belt;
- strongly advocated input from statutory consultees, notably from Highways England;
- favoured the presentation of outputs at a 'broad location' level (rather than at a site specific level which might be seen as pre-determining the assessment of the merits of sites through Local Plan processes); and
- thought a new spatial framework is needed to advocate a policy mechanism to support the identification and maintenance of a supply and pipeline of strategic employment land.

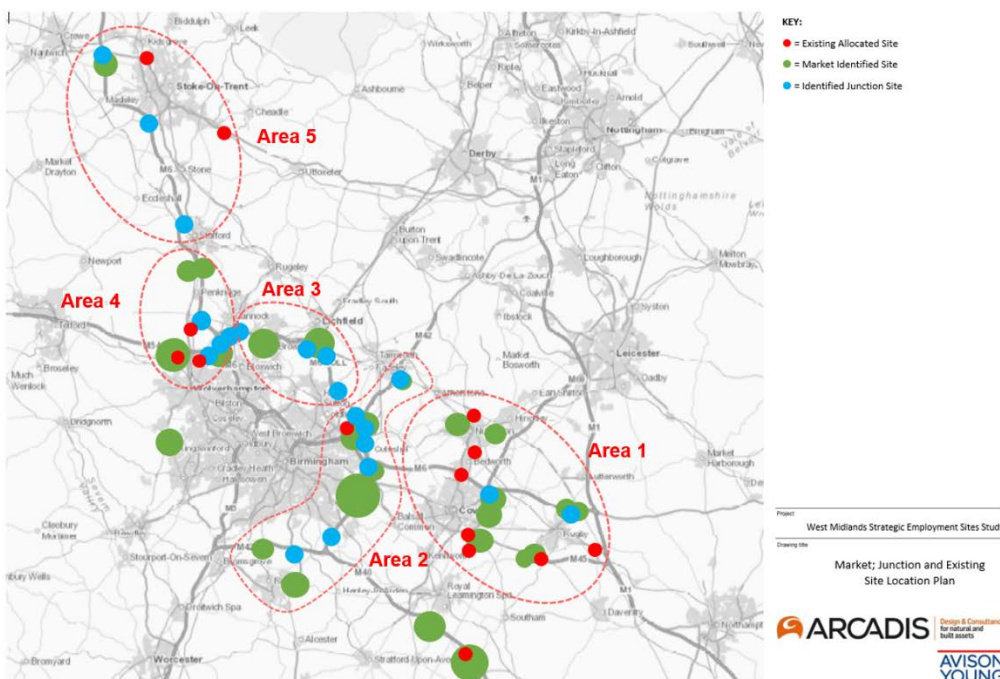
Public Sector: several of the more ‘urban’ local authorities thought that there are no sites within their boundaries that could support a Strategic Employment Site, although others saw the potential in their areas and recognised the significant economic and social benefits which this would bring.

Public sector stakeholders also:

- thought that existing and/or new green belt reviews should be used to evaluate the potential to remove land from the green belt to meet needs in the most appropriate locations;
- expressed some concern in relation to an over-dependence on delivering B8 Storage and Distribution sites, and the risk of limited job creation from such development;
- identified existing or potential locations which would be the focus for regionally important growth sectors which do not require sites as large as 25ha;
- identified high quality transport infrastructure (whether existing, planned or proposed) as being central to the successful delivery of Strategic Employment Sites, with good access to a motorway junction, or to the trunk road network, being seen as critical to the successful delivery of such sites;
- considered that HS2 and related infrastructure improvements are potential catalysts for further employment land release and delivery; and.
- expressed concern that the Study might identify sites that have not been identified previously within emerging development plans, and/or that it may prejudice the outcome of Local Plan reviews.

The Study reaches the following conclusions.

Broad Locations: Based on our analysis of the quantum of supply, market intelligence around areas witnessing considerable demand, and those areas achieving highest land prices, the prime market facing locations for Strategic Employment Sites are to the east of Birmingham in an area from J2 of the M42 in the south, north to J10 of the M42, south west to J14 of the M40 and east to J1 of the M6. We have identified five key clusters of sites and consider that the focus for identifying strategic employment sites should be in the four ‘Key Locations’ shown below.



Existing Supply (Allocated, Committed and Built): A comprehensive audit of adopted and emerging evidence base documents for the 24 local authorities situated within the Study area initially identified a total of 664 sites which met the minimum site size criterion of 25+ ha. Further analysis confirmed that most of these have largely been developed so that a refined list included only 12 sites with a remaining capacity of 25+ ha. Since then the proposed Development Consent Order (DCO) for the 'West Midlands Interchange' (WMI) at M6 J12 has been granted and has been added to the list of allocated and committed sites.

The potential capacity of the 13 allocated and committed sites is circa 2.96 million sqm. This conclusion is, however, to be approached with a degree of caution having regard to the length of time that some sites have been identified and allocated, without being brought forward. Moreover, the capacity of sites is expressed on the basis of their gross site area, rather than on the basis of a net area, as per the agreed terms of reference of this Study. It is not the purpose of this Study, however, to reach conclusions on whether sites should remain as allocations (that is a matter for the plan-making authorities involved), or to reach conclusions on the net developable area of the allocated sites. Nonetheless, the estimated capacity should for the purpose of this Study be treated as a maximum.

Our analysis indicates an average take up of new, Grade A floorspace in the West Midlands area (as defined for the purpose of the analysis) of approximately 0.4 million sqm p.a. It should be noted that this was over the period 2015-2018 inclusive. We have also commented on take up during 2019 (Q1-Q3), noting similar rates to those from 2015-2018. Moreover, our conclusions of supply are based on the data collected in 2018/19. At that time the WMI was not a commitment, but was being promoted, so that its potential contribution to supply had been captured in any event.

Based on evidence of past trends in relation to take-up, and assuming that no additional strategic employment sites are brought forward to replace those that remain, the resultant supply of allocated and committed employment land would appear to represent a maximum of 7.41 years supply.

On the basis of the 'past trends' approach that we have adopted it is clear, as it was in 2015, that there is a limited supply of available, allocated and/or committed sites across the Study Area that meet the definition of 'strategic employment sites', and an urgent need for additional sites to be brought forward to provide a deliverable pipeline, noting the very substantial lead-in times for promoting and bringing forward such sites.

Potential Supply (Industry Promoted Sites): As part of the engagement process, stakeholders were invited to submit details of their land interests. The consultant team received details of 31 sites of 25+ ha that stakeholders were promoting, or were considering promoting, for employment development. These sites included the WMI which is now included in the Allocated and Committed category. Having regard to this change, these sites represent a combined area of circa 2,370 ha. This equates to circa 9.48 million sqm of potential floorspace and, based on average take up of circa 0.4 million sqm p.a, a further 23.7 years of potential capacity/supply.

This would require, of course, that all these sites would ultimately be confirmed as allocations in the relevant development plan(s), which will not be the case. Moreover, it has no temporal dimension, and makes no allowance for the time that it may take to secure such allocations, and to then bring those forward through the planning application process, and to deliver any necessary supporting infrastructure. For these reasons, it is not sensible to conclude that all the identified sites will contribute to supply in the short to medium term and this element of potential supply should be treated with an appropriate degree of caution. It is worth emphasising also that whilst the table reports a 'years supply' figure for each Key Location, those figures are based on the assumed demand across the whole of the West Midlands geography, rather than for each Key Location.

Existing and Potential Supply in Key Locations (Source: Avison Young 2019)

	Area 1	Area 2	Area 3	Area 4	Area 5	Years supply	Outside 5 clusters
Allocated Sites	71 ha	264 ha	-	323 ha	83 ha		100 ha
Years supply	0.71	2.64	-	3.23	0.83	7.41	1
Industry Promoted Sites	905 ha	448 ha	152 ha	494 ha	70 ha		301 ha
Years supply	9.05	4.48	1.52	4.94	0.7	20.69	3
TOTAL	976 ha	712 ha	152 ha	817 ha	153 ha		401 ha
Years Supply	9.76	7.12	1.52	8.17	1.53	28.1	

Potential Additional Supply (Motorway Junctions): It is our view that Strategic Employment Sites are best delivered in locations that are accessible to the strategic highway network, with sites located close to motorway junctions being prioritised by developers and occupiers. With this in mind the Study includes a high level review of land adjacent to all motorway junctions within the Study area to test whether there may be sites of 25+ ha that could accommodate strategic employment needs. The search identifies substantial amounts of land that could support employment development, if promoted for those purposes, and subject to the consideration of technical, environmental and other matters. We have not, however, made any allowance in our conclusions on potential supply from such sites.

Summary of Supply/Capacity: It is our view that, at a minimum, recent levels of demand are likely to be sustained from a market perspective. This could, however, increase over and above current levels given the attraction of the area as a location for investment. We have recommended that consideration be given to the specifics over quantum of demand being assessed via an econometric demand forecast.

If only allocated sites were assumed to contribute to supply, there would be a maximum of 7.41 years supply at observed levels of demand and much less if demand were to materially exceed trend-based levels. Moreover, this includes the WMI DCO, which is targeted at rail freight related development, and which itself comprises 2.47 years supply. If only allocated sites, plus all of the industry promoted sites in Key Locations, were assumed to contribute to supply there would be a maximum of 28.1 years supply at recent levels of demand, and 14.05 years if demand was double the recent trend-based levels. We have, however, concluded that it is not realistic to assume that all of the industry promoted sites will in time be confirmed as allocations.

This high-level analysis underlines:-

- the urgent need to identify a pipeline of new Strategic Employment Sites to meet needs beyond the 7.41 years (or less) of supply that exists in allocations and committed sites; and
- the need to consider testing, through econometric forecasting, the level of demand that the sub-region should be seeking to meet and that, whatever that level may be, existing supply must be supplemented in the short term.

Next Steps: Our recommendations on additional work that will add to the findings of this Study, and contribute to provision of a robust evidence base to inform local plan making are set out below.

- calculating shortfall:** the shortfall in the availability and future supply of strategic employment sites cannot be robustly quantified without an assessment of market dynamics and projected sector growth patterns through an

econometric demand forecast, which would add materially to the findings of this Study and would inform the strategy for delivering a sufficient supply of strategic employment land. A related area of follow-on analysis should include a critical review by plan-making authorities of the capacity and deliverability of the remaining allocated sites.

- b) a study of modern business requirements:** there is a need to provide sufficient supply to meet the pace of change in manufacturing and logistics and it is recommended that further work should be undertaken to provide a greater understanding of the market dynamics driving this demand and of the potential scale of growth and the needs of modern logistics and 'Just in Time' delivery for manufacturing plants.
- c) greenbelt review:** given that the Key Locations for meeting strategic employment needs are substantially affected by green belt, one next step would be for due consideration to be given to treating the need for strategic employment land across the sub-region and Study Area (as quantified by a future econometric demand assessment) as circumstances that can support the release of land from the green belt.
- d) assessment of sites:** consideration should be given to developing a more detailed, refined and weighted set of assessment criteria to inform any individual or relative merits assessments of sites/locations that may be considered as part of any further work arising from the broader recommendations of this Study.
- e) spatial framework:** consideration should be given to the delivery of a new spatial framework policy mechanism that ensures that local authority plan-making processes identify and ring-fence sufficient land to meet strategic employment land needs.
- f) consultation:** statutory consultees including Highways England should be engaged to provide their input on the deliverability of the identified site/locations, and a dialogue should be maintained with the stakeholders that have contributed to the Study.
- g) monitoring:** we recommend that a framework for monitoring the progress of sites through the sub-region's development plans be established, so that a clear view on the quantum and timing of potential pipeline supply can be maintained and adopted for comparison with demand forecasts, and to inform future strategy.

1. Introduction

- 1.1 This Study has been commissioned by Staffordshire County Council, on behalf of The Black Country Local Enterprise Partnership (BCLEP), Coventry & Warwickshire Local Enterprise Partnership (CWLEP), Greater Birmingham & Solihull Local Enterprise Partnership (GBSLEP) and Stoke-on-Trent & Staffordshire area.
- 1.2 In 2015 the West Midlands Strategic Employment Sites Study was produced by Peter Brett Associates (PBA) and Jones Lang Lasalle (JLL) on behalf of the West Midlands Local Authority Chief Executives. The 2015 Study identified a demand for strategic employment sites in the West Midlands, but a lack of available sites. It suggested that a second study *“may be commissioned to advise on how any shortfalls in provision might be addressed. For example, this might include setting out the methodology and potential geographies for more specific studies to identify among other things known opportunities, demand and broad locations and potentially investigate other related issues which may emerge such as relationships between strategic sites and housing assessments.”*
- 1.3 Since 2015 no further work has been pursued in relation to this second Study. There is a need to update the 2015 Study generally, alongside a review of how any shortfall of sites might be addressed.

The Study Brief and Approach

- 1.4 In light of the above, the aims of this Study, as set out in the study brief, are as follows:

“This next phase of work will firstly involve a refresh of the evidence base of the demand and supply of strategic employment sites in the area. This will include assessing whether the previous categorisation of such sites is still suitable in the current market building upon the review undertaken as part of the 2015 Study. Should a shortfall in the supply of such sites be identified the Study should also:

- *Make recommendations as to the scale and nature of sites required to address this shortfall;*
- *Identify an appropriate portfolio of potential locations where this demand could be met; and*
- *Make recommendations as to how such sites can be delivered.”*

- 1.5 To address these aims the study brief included initially the following three stages:

- **Stage 1 - Evidence Base Review:** a refresh of the evidence base and findings of the 2015 Study and advice as to whether there is a shortfall of Strategic Employment Sites and whether additional sites are required;
- **Stage 2 - Developing a Portfolio of Strategic Employment Sites/Locations:** identification of a schedule of potentially developable strategic employment sites / locations informed by a high level technical assessment of the potential sites / locations identified; and
- **Stage 3 - Delivery & Recommendations:** agreement of a list of locations considered deliverable based only on the high level assessment undertaken.

Aligning Objectives

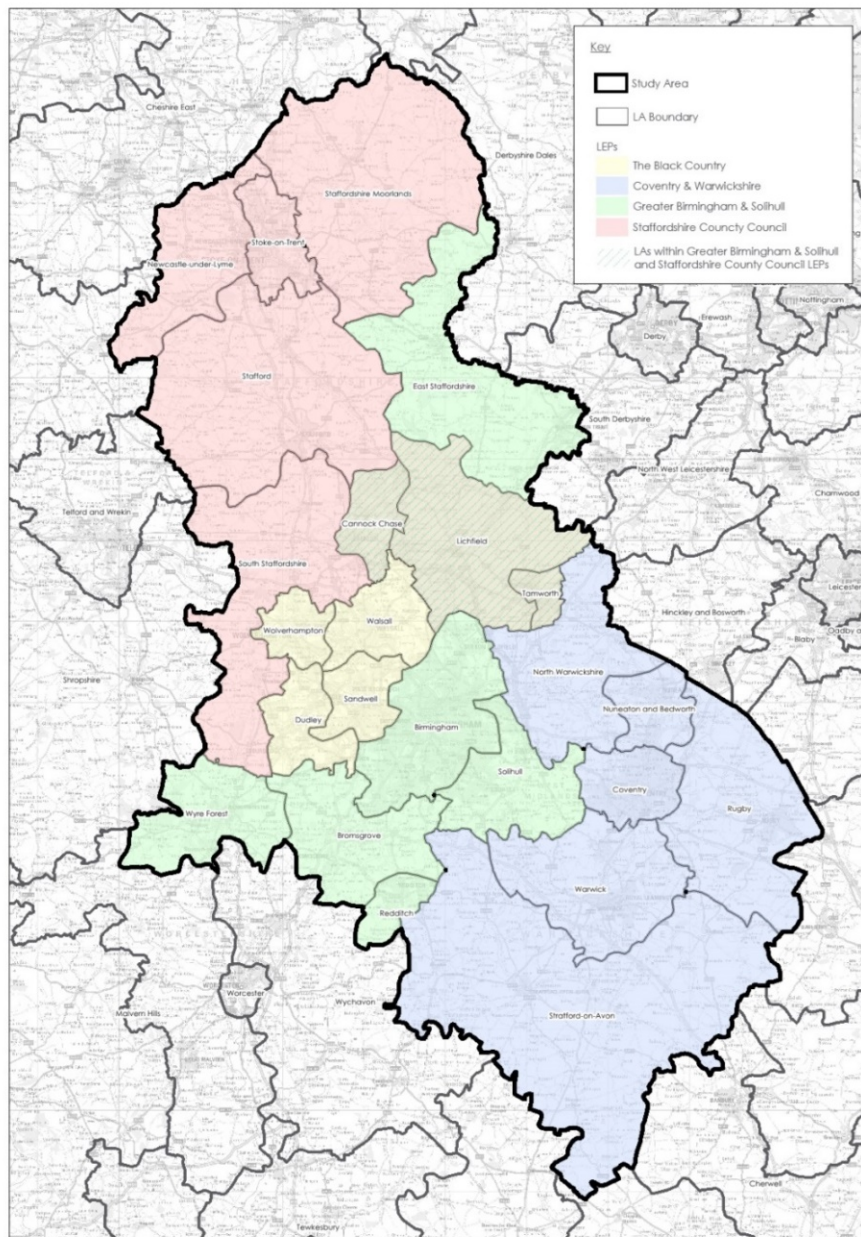
- 1.6 It was essential at the outset to agree the objectives of the Study so as to ensure that the Client group and consultant team were aligned on its scope and aims, and on the expected outputs. As such, the approach set out above was fully endorsed by the Client group. The agreed aims have been monitored, tested, and adjusted where necessary throughout the preparation of the Study.

- 1.7 For the avoidance of doubt, this Study does not comprise an Employment Land Review (ELR) for the 24 local authorities that are within the Study Area, because its focus is on strategic employment matters. The ELR's of each of the local authorities have, however, been key information sources, and have informed the Study within the agreed parameters.
- 1.8 There is a clear distinction, for the purpose of this Study, between, on the one hand, local level sites suited to meeting local needs and which are to be identified by individual local authorities in their ELRs (and which are not considered in this Study) and, on the other, strategic, regionally important sites that may accommodate significant investment opportunities and cater for demand in key growth sectors.
- 1.9 This Study identifies known Strategic Employment Sites, and considers broad locations for further consideration for such sites, within the agreed parameters. It does not purport to allocate sites, or to make recommendations on sites that might be allocated to meet strategic needs. It is not a statutory planning document, and its purpose is not to provide an alternative to, or in any way seek to prejudge or override, the detailed evaluation of the individual and/or relative merits of potential sites and locations through the operation of the 'plan-led' system.
- 1.10 In essence, the Study takes a strategic and high level planning-led approach to evaluating broad options for locating new Strategic Employment Sites within the Region. It considers the potential demand for such sites, provides an audit of existing and potential supply, and considers the extent to which there may be a need to identify additional supply. In so doing, it encourages all those with an interest in such matters (including local authorities, developers and landowners) to work together to develop a deliverable supply of strategic employment sites capable of accommodating large scale development requirements, above and beyond local need.

Study Area Geography

- 1.11 The Study area was set at the outset and is focussed upon and includes the twenty-four local authorities that fall within the Local Enterprise Partnership (LEP) areas of the Black Country, Coventry and Warwickshire and Greater Birmingham and Solihull, plus Staffordshire and Stoke-on-Trent (as per Figure 1.1 overleaf).
- 1.12 It is recognised that local authority partners outside the Study Area are progressing their own economic growth agendas, some of which are looking to make changes to their economic geography. As such, this Study has been cognisant of the existence of existing and emerging sites in the eighteen local authority areas that adjoining the Study area to ensure that a comprehensive picture is provided.
- 1.13 For the avoidance of doubt, whilst reference is made throughout this Study to adjacent local authority areas (i.e. Worcestershire, Shropshire and Telford) the assessment of potential locations and sites has focussed on the twenty-four local authorities shown on Figure 1.1.

Figure 1.1 – Study Area Geography



Brownfield v Greenfield

- 1.14 The corporate position of the Client group, aligned with sustainable development principles and the emphasis of policy in the National Planning Policy Framework (2019), is to take a 'brownfield first' approach to identifying strategic employment sites. Whilst this is acknowledged, the option of developing greenfield and/or green belt land must be considered as part of any proper assessment of how the region might best provide sufficient strategic employment sites, of an appropriate size, so as to accommodate demand from international, national, regional and local investors.
- 1.15 For this reason, the Study adopts a 'policy off' scenario that is not constrained by the alternative policy merits of brownfield and greenfield / green belt locations. The sensitivities surrounding a 'policy off' approach are understood, but it is considered that all options need to be evaluated, and important that locations that may prove most able to meet strategic needs are not ruled out at this stage.

Definition of 'Strategic'

- 1.16 One of the aims of this Study is to identify potential locations for Strategic Employment Sites that would be able to satisfy demand from inward and indigenous investors, and be able to meet the needs of modern occupiers. Key to this is agreeing what, for the purpose of this Study, constitutes a 'Strategic Employment Site'. This issue was considered in the 2015 Study, which reviewed the situation in relation to regional employment land at that time, and the criteria that were used in the West Midlands Regional Spatial Strategy to identify Regional Investment Sites and Regional Logistic Sites. It concluded with the following definition of strategic employment sites.

"Strategic employment sites are business development sites that can bring net additional activity and jobs to the region by:

- attracting nationally or internationally mobile business activity;
- *providing accommodation that would not otherwise come forward through the local planning system, principally because:*
 - *they are large sites, providing at least some 25 ha and often much more;*
 - *they may be in greenfield locations.*

- 1.17 This Study is intended to update and build from the 2015 Study and, as such, the above definition has been used as a starting point. The definition has been discussed with officers from the three LEPs, and Staffordshire County Council, and with officers from the West Midlands Combined Authority. The Consultant group's views have also informed the discussion on any need to refine the definition used in 2015. The consensus was that the 25 hectare (gross) minimum threshold should be retained as an appropriate scale for a general employment site that would be able to attract strategic business activity into the region. Discussions with local authority officers, and with agents identified also the strategic importance of providing sufficient sites to meet the needs of specific growth sectors within the region.

- 1.18 As such the following definition has been developed for this Study:

"Strategic employment sites over 25ha which could attract nationally or internationally mobile business activity; and Sites which meet the strategic needs of the region in relation to specific growth sectors (e.g. Life Sciences) which are economic priorities but do not require extensive land take and will therefore be under the above 25ha threshold. We will identify broad locations where strategic economic growth could occur for these growth sectors with no minimum threshold size. The specific sites will be identified locally through the plan making process and not through this Study".

Take-Up / Demand Assessment

- 1.19 For the purpose of estimating demand, the Study has considered the take-up of Grade A new / modern floorspace of 9,290 sqm (100,000 sqft) or greater in the West Midlands (the geography of which is defined at paragraph 4.2) over the period 2015-2018. For the avoidance of doubt, this does not mean that the Study infers that only sites of 25ha or more (i.e. sites that are defined as being of a 'Strategic' scale for the purpose of this Study) can accommodate 9,290 sqm of floorspace, or that demand for floorspace of more than 9,290 sqm can only be met on sites of 25 ha or greater. The Study does not conflate the two, but uses take-up of this scale as the basis of estimating demand.

2. Baseline Review

2.1 To inform this Study we have carried out a baseline review of current, relevant regional plans, strategy documents and studies. We have also had regard to the approach that has been adopted in other regions when considering the need to plan for the delivery of strategic employment sites. This section provides an overview of the key policy and strategy drivers that these plans, strategies and studies identify.

Literature Review - Strategies

WMCA Strategic Economic Plan (SEP) (2016)

2.2 The SEP focuses on enhancing the West Midlands' long and proud history of manufacturing excellence. It emphasises the leading role that universities play in economic development through innovative infrastructure which focuses on increased productivity and public service reform. The key areas of focus within the SEP are as follows.

- A focus on balanced growth: with an ambitious plan for skill levels to exceed the national average.
- Acceleration of the housing market: so that the region may attract a greater proportion of higher income households to drive a knowledge led economy.
- The establishment of a Productivity and Skills Commission.
- Public Service Reform: related to criminal justice and to improving employment, skills and mental health
- Core Focus: on advanced manufacturing, engineering, creative, digital and life science sectors.
- High quality connectivity: having regard to HS2, Birmingham Airport and the UK Central growth corridor.
- Growth of UK Central (Birmingham, Coventry and Wolverhampton) is the strategic priority with the surrounding areas of southern Staffordshire, north Worcestershire and Warwickshire providing important complementary strengths in terms business, housing and leisure offers.
- Cultural diversity and innovation.

2.3 Innovative thinking forefronts the key agenda for the SEP which is to create an environment where businesses can align with modern technological advances and, in turn, create exciting and attractive new ways of working. This is important as the region seeks to create sustainable working environments.

2.4 Recent market trends have highlighted that the output gap between the West Midlands and the rest of the UK will widen between now and 2030. This is attributable to the large number and proportion of low value companies operating in low growth sectors, and to low business birth and survival rates. Consideration needs to be given to shifting the focus to people and places and to creating environments where people wish to live and work.

2.5 There are eight areas for priority action, to 2030, focusing on people, place and business, as follows.

- New manufacturing economy
- Creative and digital
- Environmental technologies
- Medical and life sciences
- HS2 growth
- Skills for growth and employment for all
- Housing
- Exploiting the economic geography.

2.6 The strategy for delivering the vision set out in the SEP is based on the following matters.

- Creating conditions for growth including connectivity and skills.
- Exploiting the area’s world class innovation infrastructure.
- Improving business competitiveness.
- Public service reform.
- Improving the opportunities available to meet local aspirations.

2.7 Central to the strategy is the principle of balance. It is recognised that the West Midlands’ existing strengths further highlight issues relating to productivity, skills and employability for higher value jobs, and connectivity of jobs to people. Aligned with the Economy Plus model, the focus is shifting to economic forecasting, whereby the model has been used to review the individual SEPs of each of the LEPs which it predicts could deliver an additional 455,000 jobs by 2030. The retention, growth and further expansion of the job market within the West Midlands further supports this region’s ambitions to become an engine for growth.

2.8 The WMCA has an ambitious plan to close the output gap three years earlier and, in turn, deliver half a million jobs by 2030 generating an additional £7 billion GVA (gross value added). Three growth scenarios have been developed and tested and are highlighted below.

TREND SCENARIO	3 LEP SEP SCENARIO	WMCA SEP: ECONOMY PLUS SCENARIO
• An additional 168,000 jobs	• An additional 455,000 jobs	• Additional jobs growth of 49,000 over and above the individual SEPs scenario resulting in total jobs growth of 504,000
• GVA increases from £19,423 to £26,422, per head but the output gap with national average widens	• GVA per head increases to £32,256 - 101% of the national average and therefore, surpassing the national average in 2029	• The increased jobs and productivity results in an eradication of the output gap and GVA per head surpassing the national average by 2026
• Population increases by 369,000 to 4.37m	• Population increases by 510,000 people.	• The population increases by an additional 32,000 people

2.9 The Economy Plus model shows that the geographic scale provided by the West Midlands Combined Authority, and the three LEPs, will enable further and faster progress in developing innovation, increasing productivity and securing public service reform. Collaboration between the three LEPs will capitalise the scale and diversity of the West Midlands geography, and strengthen the area’s ability to pilot new ways of working, maximise resources, balance the scale and place shaping potential of regeneration opportunities, and improve inter-regional connectivity.

2.10 A Performance Management Framework monitors the success and robustness of the WMCA vision. A variety of indicators have been selected to measure achievement which will subsequently feed into a programme of interventions and set the SEP priorities. Six of the eight areas for priority action listed in para 2.5 above (excluding ‘housing’ and ‘exploiting the economic geography’) are referred to as ‘priority action points’. For each of these priority action points, the WMCA has set out a series of forecast impacts up to 2030 with ambitions and targets.

SEP Sector Review (2016)

- 2.11 The WMCA has identified ten sectors within the SEP Sector Review which are considered to be fundamental to increasing the GVA of the region. Seven are referred to as 'transformational' sectors with the remaining three referred to as 'enabling' sectors, as follows.

Transformational Sectors

- Advanced Manufacturing;
- Business, professional and financial services;
- Construction (building technologies);
- Digital and creative;
- Life sciences and social care;
- Logistics and transport technologies; and
- Low carbon and environmental technologies.

Enabling sectors

- Cultural economy including sport;
- Public sector including education; and
- Retail.

- 2.12 The transformation sectors are expected to generate an overall increase of 349,000 jobs over the period 2013 to 2030 (rising from circa 1.1 million in 2013 to 1.5 million in 2030) which equates to an increase of around 31%. The highest levels of employment growth are to be expected in Business Professional & Financial Services (47.6%). Forecast rises Low Carbon and Environmental Technologies are modest at 3.4%.

- 2.13 Similarly, across the enabling sector, employment is expected to grow from 782,000 in 2013 to 937,000 in 2030, a rise of almost a fifth. The highest percentage growth is expected across the cultural economy, which includes sport. However, absolute growth is forecast to be highest across the retail sector at 82,500.

- 2.14 The figures highlighted above support the WMCA's vision to focus upon the Transformational Sectors as the key drivers for growth.

The Midlands Engine: Vision for Growth (2017)

- 2.15 The Midlands Engine consists of a partnership of local and Combined Authorities, LEPs, universities and businesses working together in new and transformative ways to invigorate the Midlands economy. It complements the work of the local authorities, the Combined Authorities, LEPs, universities, businesses and others to generate added-value at scale across the Midlands. It is their ambition to accelerate productivity growth across the Midlands by 2030. To help enable this, an Investment Fund is available with a value of £250 million to 2030.

- 2.16 The Vision for Growth is based around five key objectives, as follows.

- Connect the Midlands: maximise new technologies and become UK's transport innovation testbed.
- Invest in strategic infrastructure with sustainable and advanced technology and using HS2 as a catalyst for growth.
- Grow international trade and investment: expand Midlands trade and investment programme.
- Increase innovation and enterprise: create new Midlands management and leadership institutes.

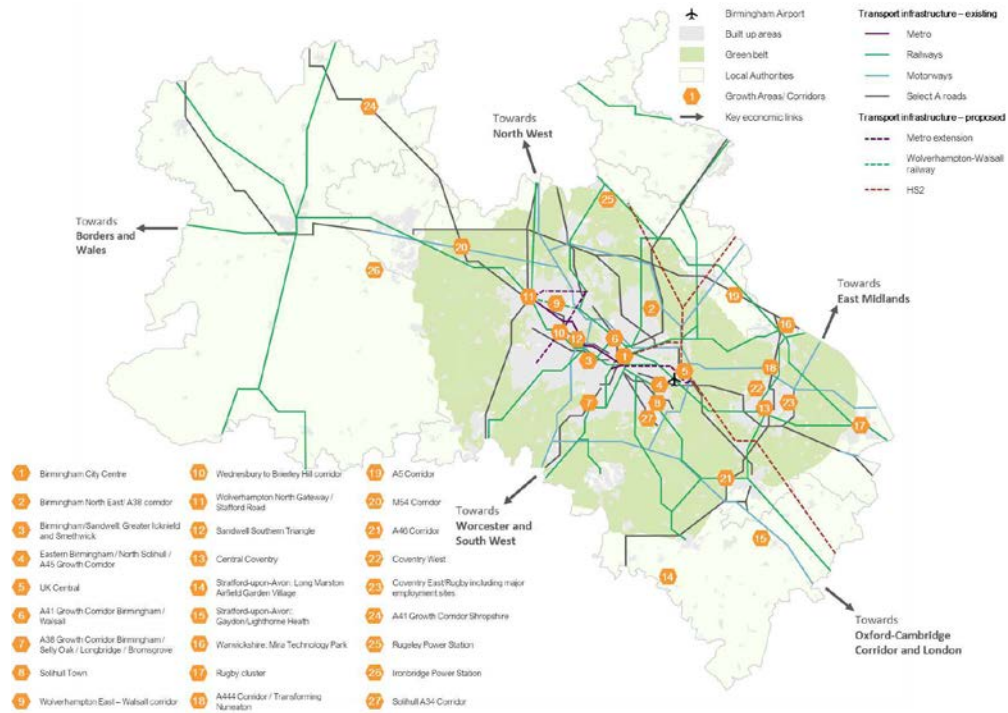
- Shape great places: to live, work and learn in, and to visit, and support strategic sectoral locations.
- 2.17 To achieve the vision, the Midlands Engine needs to continue to define a long-term strategic plan and by working collaboratively to develop a self-sustaining and resilient partnership model.
- 2.18 To help close the GVA gap by 2030, the Midlands Engine will look to accelerate productivity and boost competitiveness. This will be supported and maximised by the following activities and opportunities.
- £20m investment into Midlands Skills Programme to rebalance the skills shortage across the Midlands whereby 31% are educated to a degree level.
 - Investment into strategic infrastructure and into increasing innovation and enterprise.
 - Investment of £5bn into Midlands transport infrastructure to reduce commuting time and maximise the use of new technologies.
 - Deliver the Midlands Connect transport strategy by 2040, creating over 300,000 jobs.
 - Maximise the benefit of transport corridors, such as A46 cross region to connect SW and NE Midlands.
 - £40m funding for Midlands Rail to achieve HS2 compatibility.
 - Smart connectivity and maximising use of airports.

The West Midlands Spatial investment and Delivery Plan (SIDP)

- 2.19 This sits at the heart of the inclusive growth agenda for the West Midlands, bringing together strategies to develop industry, economy, the skills base and social infrastructure, as well as the transport network. Job creation and industrial growth must be at the heart of a sustainable growth strategy if this is to be achieved.
- 2.20 The SIDP is a delivery focused plan and seeks to raise the bar on design quality and headline principles for development. The document responds directly to the work of the Land Commission and devolution and housing deals. The overriding purpose of the SIDP is to identify key activities that will help unblock and speed up the delivery of new homes and new employment opportunities in the West Midlands region, supported by the Investment Prospectus which was launched in March 2018.
- 2.21 The SIDP will also support the Housing Deal commitment to deliver 215,000 homes by 2031 by reinforcing the emphasis of a range of strategic documents so as to underpin balanced growth. These are the:-
- Midlands Engine;
 - West Midlands Strategic Economic Plan;
 - West Midlands Industrial Strategy;
 - Regional Skills Plan; and
 - Movement for Growth.
- 2.22 If the SIDP is successful in delivering increased housing in the right places, this will have a direct and beneficial impact on productivity growth and prosperity for the region and the whole of the UK. The SIDP adopts the same definition of Strategic Employment Sites as the 2015 Study so as to provide a consistent approach to their identification as business development sites that can bring net additional activity and jobs to the region, by attracting nationally or internationally mobile economic activity, and providing accommodation that would not otherwise come forward through the local planning system (principally because they are large sites (25 ha +) and they may be in greenfield locations).
- 2.23 The key objectives of SIDP are to:-

- a) define a fit for purpose geography for the SIDP, including all constituent and non-constituent members of the Combined Authority, all authorities within the three principal areas, and all authorities within the two principal Housing Market Areas (i.e. the Greater B'ham & Black County HMA and the Coventry and Warwickshire HMA);
- b) support and inform strategic planning, established through the Duty to Co-operate, to secure the delivery of major sites, growth areas and growth corridors that are already identified;
- c) support the delivery of enough new homes of the right type and in the right places;
- d) deliver the pipeline of priority housing sites;
- e) deliver a competitive portfolio of employment sites which seeks to align housing and employment growth including:-
 - Peddimore, Birmingham
 - Regional investment sites in Aston and Longbridge
 - UK Central opportunities comprising up to 775,000 sqm of commercial space
 - the J10 cluster in Walsall which forms part of the Black Country EZ and DY5 EZ in Dudley
 - Staffordshire High Growth Zone including the proposed extension to i54;
 - Friargate, Whitley Business Park and Whitley South and Ansty Park in Coventry, Warwick and Rugby
 - MIRA Technology Park
 - M54 Corridor and Cosford
 - a range of growth opportunities in town and city centres.
- f) maximise the potential of our city and town centres;
- g) improve connectivity;
- h) build on the region's environmental strengths;
- i) tackle infrastructure constraints; and
- j) support people to realise their full potential.

- 2.24 The SIDP does not seek to allocate new development sites, but recognises key areas where change is likely, and where investment is needed.
- 2.25 It is acknowledged that Birmingham City Centre is the economic hub of the region, albeit Coventry and Warwickshire have recently achieved considerable economic growth. Birmingham City Council has identified in its Development Plan the potential for the City Centre to accommodate 700,000 sqm of new office floorspace and 160,000 sqm of new comparison retail floorspace, in the period to 2031.
- 2.26 Birmingham has allocated a 71 ha employment site at Peddimore. Coventry is bringing forward Friargate around the Railway Station with at least 176,000 sqm of new office floorspace which, together with complementary retail and leisure facilities, will generate up to 15,000 new jobs. In Wolverhampton City Centre, land around the Canalside and the new Station City Interchange has the potential to support 93,000 sqm of new commercial space.
- 2.27 The focus has shifted to the delivery of Growth Corridors to land interventions and assembly. Growth corridors and areas are based on sites identified in existing local plans and, in some cases, emerging proposals that are not yet committed in plans as shown on the extract from the SIDP (July 2018) overleaf.



2.28 To unlock barriers to growth there is a recognition that negative factors such as unskilled labour, fragmented ownership and funding opportunities need to be addressed. Various approaches have been outlined in the SIDP including the benefits of collaborative working with Homes England, accelerating build out, maximising land use availability through streamlining land assembly, a ‘brownfield first’ approach, and through emphasising the need for design quality.

The West Midlands Local Industrial Strategy (2019)

2.29 The Local Industrial Strategy (LIS) was published in May 2019 and highlights the significant growth in productivity within the region over recent years, with productivity increasing, during 2018, at twice the rate of the UK average. The LIS sets out the steps the region will make to:-

- drive growth by strengthening the foundations of productivity; contributing towards the Grand Challenges, and by taking advantage of market driven opportunities in mobility, data-driven health and life sciences, modern services, creative content, techniques and technologies;
- ensure all communities can contribute to and benefit from economic prosperity whilst protecting and enhancing the environment; investing further in social infrastructure; measuring progress; and
- designing actions using a balanced set of inclusive indicators.

2.30 The LIS highlights the unprecedented change in transport technology expected over the coming decades, and the opportunities that this presents for the West Midlands. It sets out a number of ways in which the region can continue to drive progress in this area, including by partnering with local specialist manufacturers and R&D centres to create new markets, and developing an innovative and integrated transport network.

2.31 The LIS sets out actions targeted at addressing the barriers to economic growth identified by the Study. In relation to infrastructure, the LIS refers to the findings of West Midlands Land Commission’s work, which highlights the acute shortage of large scale, strategic sites that can have the greatest net additional impacts on growth and jobs. Furthermore, there is a similar challenge for incubation space, as well as grow on space to support agile and mobile economic activity across the whole region, although this need is felt most severely in Coventry and Warwickshire.

2.32 To help address some of these issues the LIS aims to create a holistic approach for investment and delivery, which goes beyond 'site-by-site' development and embeds whole-system thinking. As such, partners in the West Midlands are exploring four priority inclusive growth corridors; namely:-

- Wolverhampton to Walsall;
- Sandwell to Dudley;
- Perry Barr and the A34; and
- Greater Icknield to Smethwick.

The Black Country Strategic Economic Plan (SEP) (2017)

2.33 The 2017 refresh of the Black Country SEP sets out how the Black Country aims to speed up the delivery of its vision for the area. The SEP is based on six priority propositions which are intended to both enable economic growth, and demonstrate the Black Country's commitment to transformational change. The aim is to provide a prioritised and focused framework for investment by the private and public sector. These priorities include the promotion of high value manufacturing and business competitiveness. The overall aim is to increase the number of jobs in the area by 127,860 (from a baseline of 441,900), to increase the housing stock by a minimum of 42,480 new homes, and to nearly double the business birth rate.

2.34 The SEP builds on the Black Country's position at the heart of The Midlands Engine to focus on several areas, including by:-

- promoting the Black Country as a world class centre for advanced manufacturing and engineering;
- building on the fact that the output gap between the Black Country and the national average has stabilised and to build momentum to tackle current low productivity;
- exploiting the economic potential of digital technologies and secure digital inclusion; and
- improving the quality of the key employment locations.

2.35 The SEP sets out a priority development pipeline for the Black Country. This includes a pipeline of housing land and high-quality employment land which would deliver almost half of the Black Country's employment land requirements. The focus to date has been on bringing forward a suite of sites of different sizes which are 'oven ready' for development. The challenge is to both increase the momentum in terms of site delivery and to do more to address the poor quality of many employment locations to boost indigenous business assets. To achieve these aims and to help bring forward the employment land needed, several actions are identified including a priority proposition to deliver a high value manufacturing offer.

The Staffordshire & Stoke on Trent Strategic Economic Plan (SEP) (2018)

2.36 This SEP is a refresh of an earlier Plan and sets out a framework of priorities which reflects the current pipeline of commitments in the area. The SEP is mindful of how industrial growth can benefit areas of the country, such as Stoke-on-Trent & Staffordshire, which have clear potential but which risk getting overlooked in the city-devolution drive that government is pushing forward. As such improving productivity is a key area of focus for the LEP.

2.37 Stoke-on-Trent and Staffordshire have established two Enterprise Zones which have enabled them to provide a blend of geographical and sectoral offers. These include the Ceramic Valley Enterprise Zone, comprising six sites totalling 140 hectares of land along the A500 corridor. This EZ aims to become a world class centre for advanced manufacturing and applied materials excellence. The Ceramic Valley Enterprise Zone includes several high-profile sites, including Chatterley Valley East and West, Highgate/Ravensdale, Etruria Valley, Tunstall Arrow and Cliffe Vale.

2.38 In addition, i54 is now well established and is occupied by the new JLR Engine facility, which has already expanded, as well as several other advanced manufacturing and professional businesses.

The Coventry and Warwickshire Strategic Economic Plan (CWSEP) (2016)

2.39 The CWSEP sets out how the CWLEP, along with its public, private and third sector partners, will grow the economy of the area over the short, medium and longer term. The CWSEP includes a review of the 2014 SEP which informs the 2016 strategy.

2.40 The CWSEP notes that, despite Coventry & Warwickshire's GVA growing more rapidly than the national average between 2010-2014 (3.75% compared to 3%), the area still had an output gap of some £460.2m in 2014, which rises to £2.328bn if considering only local employee jobs (given that GVA per worker in Coventry & Warwickshire is just 90% of the national average). This was identified as a key strategic issue that needed to be addressed. As such the strategy notes that the local economy needs to grow at 3.3% per annum (assuming a UK GVA Growth Rate of 3%) if this output gap is to be removed by 2030. The main sectors that are expected to contribute to this GVA growth include the Automotive, Construction, ICT, Architecture/Civil Engineering and Logistics sectors

2.41 Considering this the CWSEP identifies five key themes that now form its strategy and which are:-

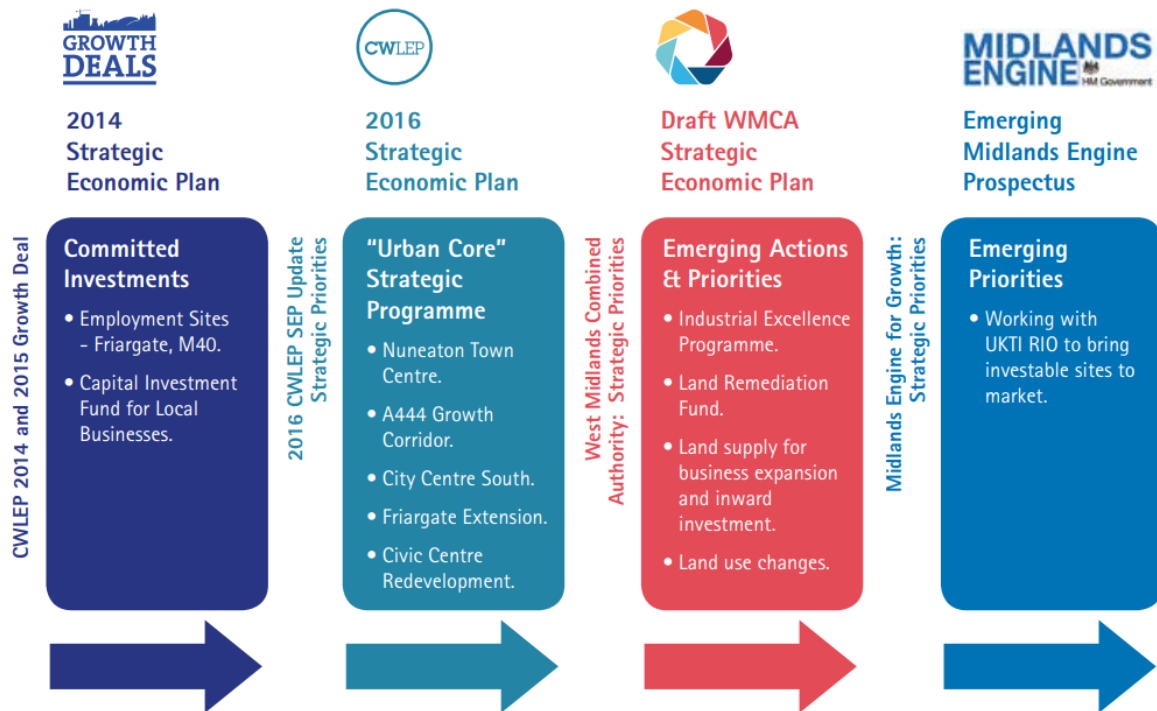
- unlocking growth potential;
- advanced manufacturing and engineering sector development;
- growing SMEs;
- growing talent; and
- culture and tourism.

2.42 The Strategy notes that it is key to build on Coventry and Warwickshire's central location, employment sites, distinctive businesses, innovation and cultural assets and highly talented workforce. The aim is that by 2025 Coventry & Warwickshire will be a *'high performing economy with our innovative businesses competing internationally, growing and providing better paid employment opportunities for all of our residents across both our rural and urban areas'*.

2.43 In relation to the first theme, the CWSEP notes that, although the area has witnessed growth in the demand for employment land, particularly in Advanced Manufacturing and Logistics, there is a need to address the low stock and immediate pipeline of employment land, particularly in Coventry and Nuneaton & Bedworth where job densities are low. There is a particular need for additional strategic sites that are capable of accommodating the largest storage and distribution requirements, and for sites suitable for development as R&D centres, in order for the CWLEP to achieve its targets for the growth of the local automotive cluster.

2.44 Transport infrastructure and urban centre improvements, as well as significant expansions of superfast broadband infrastructure, will play a crucial role in bringing major sites forward for development and in attracting business investment.

2.45 The CWSEP goes on to highlight specific investment programmes to bring forward key employment sites for development (e.g. further employment land around J12 M40, Gaydon). Additionally, the need to improve links to UK Central, Birmingham Airport and High Speed 2 (HS2) is noted. Such works will improve key junctions, connecting the major employment sites of the University of Warwick, Whitley and Ansty to major national and international gateways. The figure below provides an overview of the programmes and initiatives funded through the Local Growth Deal.



The Greater Birmingham and Solihull Strategic Economic Plan (GBSSEP) (2016-2030)

- 2.46 The GBSSEP sets out a vision and strategy for delivering smarter, more sustainable and more inclusive growth for the benefit of the area, the wider West Midlands city region and the UK as a whole. It also identifies the contribution that the GBSLEP will make to the delivery of the growth targets set by the WMCA.
- 2.47 The mission of the GBSLEP is to *'create jobs and grow the economy – and, in doing so, to raise the quality of life for all of those that live and work here'*. Increasing private sector investment, including overseas investment is key to this, as is the delivery of major growth and regeneration opportunities. In view of this, the strategy includes the following headline targets and objectives.
- Create 250,000 jobs by 2030 and be the leading Core City LEP for private sector job creation.
 - Grow our economy by £29bn (GVA) by 2030 and be the leading Core City LEP for output per head.
 - Increase the % of the working age population qualified to NVQ3+ to the national average by 2025.
 - Increase our labour productivity (GVA per capita) to the national average by 2030.
 - Decrease our unemployment rate to the national average by 2020 and have the lowest unemployment amongst the LEP Core Cities by 2030.
 - Be recognised as the leading Core City LEP for Quality of Life by 2030.
- 2.48 The Strategy notes the challenges that exist in relation to long-term housing and employment land capacity, but highlights that there are considerable commercial and residential opportunities to unlock across Greater Birmingham. In terms of potential strategic employment site opportunities, these include UK Central in Solihull, Redditch Eastern Gateway and Rugeley Power Station. The Strategy notes that some of these sites have outline planning permission and are investible, 'shovel-ready' opportunities that are primed to deliver jobs and growth. The challenge is to secure appropriate investment, and to ensure that in developing these sites, they meet the LEP's broader vision and that the focus is on delivering quality outcomes, rather than the easiest and fastest solutions.

2.49 To achieve this aim, the GBSLEP will:-

- continue to identify and deliver major growth and regeneration opportunities across Greater Birmingham, working with the Stoke-on-Trent & Staffordshire and Worcestershire LEPs;
- support the development of masterplans for key sites to drive up the quality of design, environmental standards and accessibility;
- secure investment in priority sites and the infrastructure required to unlock them to support our ambition to create new jobs and homes; and
- market and promote our portfolio of sites, working with our neighbouring LEPs, the WMCA and the Midlands Engine.

Constellation Partnership HS2 Growth Strategy

2.50 The Partnership is an alliance of Cheshire East, Cheshire West & Chester, Newcastle-Under Lyme, Stafford, Staffordshire, Staffordshire Moorlands and Stoke-on-Trent Councils, Cheshire & Warrington LEP, and Stoke-on-Trent & Staffordshire LEP. These bodies have joined together to produce a growth strategy based around the investment and growth opportunities presented by HS2. Key to this is the proposed HS2 rail hub at Crewe, and the fast HS2 service to Stoke-on-Trent and Stafford, with improved accessibility to London, Manchester and Birmingham.

2.51 It is forecast that the Constellation area will see employment growth of at least 120,000 jobs by 2040, and increasing further beyond this date as the full benefits of HS2 investment are realised. There is expected to be a significant uplift in economic growth in a range of sectors including science and technology, creative and digital, logistics and distribution and automotive and aerospace.

2.52 The two relevant HS2 transport hubs are at Stafford and Stoke-on-Trent, both of which are shown in the Partnership's emerging spatial development strategy as being centres of growth. Around Stoke-on-Trent there are several core growth areas focused along public transport nodes. The Strategy identifies the creation of an integrated transport network as being crucial to bringing forward these core growth areas.

Literature Review - Studies

Greater Birmingham HMA Strategic Growth Study (2018)

2.53 The HMA Strategic Growth Study, produced by GL Hearn, relates to the local authority areas within the Greater Birmingham and Solihull LEP and Black Country LEP areas, together with South Staffordshire. It also relates to North Warwickshire and Stratford-on-Avon Districts, which fall within an area of overlap between the Birmingham and Coventry/Warwickshire HMA. The aim of the Study was to assist with the identification of, and then meeting, housing need within the HMA area.

2.54 In terms of need the Study identifies that a minimum provision of 208,000 dwellings to 2031, and 258,500 by 2036 will be required across the HMA. Further to this, the Study identifies a minimum shortfall of 28,150 dwellings across the HMA to 2031.

2.55 To address this need the Study identifies a number of Areas of Search for strategic development. It recommends that these areas be taken forward for further consideration, via the Local Plan process, as having the potential to contribute to the identified housing need shortfall. Amongst these Areas of Search are the following three employment-led areas, all of which are within the Green Belt:

Broad Location	Potential Effect of Strategic Function of the Green Belt	Potential Effect on Local Function of the Green Belt	Potential Constraints
North of Wolverhampton, in the vicinity of i54 South Staffordshire (M54, J2)	Complex urban edge/transport corridor with various instances of strategic containment	Local separation between Codsall/Bilbrook and Wolverhampton	Limited space
In the vicinity of Coleshill and Minworth (M42, J9)	Complex urban edge/transport corridor with various instances of strategic containment	Local separation between Coleshill and Birmingham	Limited space. Flood risk issues. Route/effect of HS2.
In the vicinity of Birmingham Airport & the NEC (M42, J6)	Complex urban edge/transport corridor with various instances of strategic containment		Limited space. Route/effect of HS2/UK Central Hub proposals.

- 2.56 These locations were considered by the Study to be strategic employment areas supporting key employers, located with good motorway access and with the potential to support some housing provision as part of a mixed-use development and balanced growth. The analysis utilises the findings of the 2015 West Midlands Strategic Employment Sites Study, and is of relevance for this current Study.
- 2.57 The Study considers that the employment led development model would support delivery of a range of housing types and tenures, including the provision of affordable housing. The development model would also support the delivery of facilities, services and employment to support the needs of future residents.
- 2.58 Alongside the employment-led areas, the Study also considers several urban extensions and new settlements. To move these options on, further work will be required to assess their feasibility, the scale of development which could be accommodated within them, and the associated delivery timescales.
- 2.59 The Study concludes that additional land will need to be identified to meet residential needs to 2031. This may be located across a range of sites with larger strategic development options (such as those connected to strategic employment sites) making some contribution to meeting the housing needs shortfall to 2031.

The West Midlands Land Commission Study (2017)

- 2.60 The West Midlands Land Commission Study (WMLCS) was prepared by the West Midlands Land Commission (WMLC) for the West Midlands Combined Authority (WMCA). The WMLC was set up in 2016 to consider the West Midlands land supply, and what measures might be employed to ensure an improved supply of developable land from both a strategic and a regional perspective.
- 2.61 The WMLCS takes into account the housing and employment growth targets in the West Midlands Strategic Economic Plan and considers that meeting the targets presents a significant challenge that will require a step change in the number of sites that are brought forward for development, and in the pace at which they are developed.
- 2.62 The development of a single agreed spatial vision for the West Midlands is also recommended in the WMLCS. This would be in the form of a non-statutory Spatial Framework. The strategy would include *“A pipeline of strategic employment sites which could be available at an economically attractive cost within an appropriate timeframe”*,

alongside strategic housing sites and the delivery of future strategic (transport, telecommunications and utility) infrastructure requirements. It would set out how best to align the proposed investments in strategic infrastructure with the region's broader land, development and economic targets. The WMLCS recommends that the WMCA and local authorities should collaboratively consider how to use the full range of existing and emerging powers to bring forward such a Spatial Framework. This approach could help fill the policy void left by the revocation of regional planning policy. It would be interesting to understand the appetite for this from the Local Authorities, especially if such an approach could provide a mechanism to identify and hold/ring fence strategic employment sites to meet future need.

- 2.63 The WMLCS also recommends that a credible pipeline of strategic employment sites is a pre-requisite for the future growth of the West Midlands. This is a position that is both acknowledged and supported as a mechanism by which the region can quickly respond to large scale inward investment enquiries. The provision of a portfolio of available, market ready and fit for purpose strategic employment sites would enable this.
- 2.64 These would be *"sites in excess of 25 ha which aim to attract net additional economic activity and jobs from businesses which are new to the area and the supply chains that support them"*. This recommendation is consistent with the parameters of this Study and adds support to the view that the West Midlands needs to have a portfolio of fit for purpose employment land that, in addition to local requirements, is capable of meeting strategic employment needs.
- 2.65 As part of a Spatial Strategy, the Commission recommends the designation of a prioritised list of Action Zones where significant new employment and housing can be accommodated. Each zone would be supported by a Delivery Plan and a Financial Plan.
- 2.66 In terms of location, the WMLCS advocates further ambitious steps aimed at transforming brownfield land, including a radically expanded programme of regeneration and remediation, engaging both local and national organisations. However, the report sets out that even an effective, well-funded brownfield land remediation programme is unlikely to provide a sufficient supply of developable land to meet the SEP's ambitions and targets, whether for housing or employment land. A Strategic Review of the Green Belt across the WMCA area is therefore recommended to:
- identify broad areas of land that perform poorly against the five statutory Green Belt purposes and consider their declassification;
 - identify brownfield or greenfield sites that could become part of the Green Belt where this would create a more cohesive Green Belt; and
 - identify Green Belt sites that could support sustainable urban extensions; and identify Green Belt sites suitable for use as strategic investment locations.
- 2.67 Finally, the Commission considers that the current governance arrangements, and the distribution of responsibilities and accountabilities across the region, do not yet provide the clear collective governance that will be needed to deliver the land use and development ambitions and targets of the SEP.

National Context

- 2.68 Whilst it is noted that Regional Spatial Strategies (RSSs) were formally revoked in 2010, the 2015 Study reviewed Regional Strategies across England to see how they brought forward regional planning policies for strategic employment sites or similar.

- 2.69 It was identified that all but one of the former Regional Strategies made provision for strategic employment sites. However, none of the strategies provided a definition for strategic sites, or a rationale for designating them. The 2015 Study noted also that there was nothing in other Regional Strategies that shed doubt on the purpose and definition of strategic sites that was proposed to be used at that time. Furthermore, it was noted that other regions at that time took generally similar approaches to the West Midlands in relation to the features that strategic sites should offer.
- 2.70 No formal framework for regional planning has been put in place to replace the Regional Spatial Strategies since they were abolished in 2015. It has been left with local authorities and related groups to develop their own way forward for the delivery of strategic employment sites.
- 2.71 At present the LEP groups, elected Mayors and Combined Authorities (who have a central role in determining local economic priorities and undertaking activities to drive economic growth and job creation) are key to delivering regional strategic visions, and to leading regional and sub-regional strategy for sub-regions. In view of this we have reviewed a selection of Strategic Economic Plans and Council-led economic plans from across the Country to see how other regions may be planning for the delivery of strategic employment sites.

The North East

- 2.72 The North East LEP SEP (2017) (covering County Durham, Gateshead, Newcastle, North Tyneside, Northumberland, South Tyneside and Sunderland) identifies that, of the market challenges the region faces, a limited supply of quality industrial accommodation is a key issue. There is a particular shortage of units in excess of 10,000 sqft. The SEP also recognises that there is significant growth potential in international investment and local supply chains, and the availability of high-level engineering and capability from design to manufacturing. A number of existing and proposed advanced manufacturing sites are identified within the SEP. However, there are no specific policies defining a need to identify further strategic employment sites, or the requirements for such sites.
- 2.73 The Tees Valley LEP SEP highlights employment growth as a Strategic Priority and recognises the need for modern employment space to support inward investment to the area. The SEP goes on to identify the key employment sectors in the area and emerging opportunities. No specific requirements for strategic employment sites are included the SEP.

North West

- 2.74 The Cheshire & Warrington LEP SEP (2017) identifies the importance of creating a sub-region that can offer high quality, readily available sites in which industry and commerce can invest. A continued ability to attract inward investment, to the benefit of the whole of the North, is highlighted as a key requirement. The SEP goes on to identify key growth opportunities which are focussed on a small number of defined, spatial propositions. However, the SEP does not set out any specific requirements for future strategic sites in the sub-region.
- 2.75 The Greater Manchester LEP SEP includes the creation of a thriving and productive economy as a priority. Within this the SEP sets out an ambition to have the right employment sites and premises, in the right locations to support economic growth in all parts of Greater Manchester, though no further detail on how this is to be achieved on a strategic level is included.
- 2.76 Building on the GMLEP Strategy, the emerging Greater Manchester Spatial Framework (Revised Draft 2019) highlights the importance of providing industrial and warehousing accommodation, particularly the key sectors of advanced manufacturing and logistics. The Framework identifies that there is a significant shortfall of strategic

employment sites, and that the only realistic option for addressing it is to remove some land from the Green Belt. Policy BM-P 4 'Industry and Warehousing Development' goes on to state that at least 4,220,000 sqm of new industrial and warehousing floorspace will be provided in Greater Manchester over the period 2018-2037.

East Midlands

- 2.77 In the East Midlands, the Leicester and Leicestershire LEP, along with the individual local authorities within the area have produced a Housing & Economic Development Needs Assessment 2017 (HEDNA) which refers back to the Leicester and Leicestershire Strategic Distribution Study. That Study considered that commercially attractive strategic logistics sites must be large enough, and flexible in their configuration, so that they can provide a variety of plot sizes, and with the ability to accommodate very large warehouses up to 100,000 sqm in size. This means the provision of regular shaped plots ranging from 3ha (for a 10,000 sqm unit) to over 25ha (100,000sqm) on the basis that floorspace is around 40% of total plot footprint.
- 2.78 The LEP's SEP refers to the contribution that major sustainable urban extensions and strategic employment sites can make to the area. Reference is made to a number of sites which are considered to be 'strategic employment sites'. No specific definition is given for these sites, but those referred to within the SEP range between 21ha and 23ha.

South West

- 2.79 The South West LEP covers the counties of Somerset and Devon and the unitary authorities of Plymouth and Torbay. The SEP includes a Priority for Growth that seeks to maximise productivity and employment opportunities. Included in that is acknowledgement that there is a need for infrastructure and facilities to create more and better employment, including strategic employment sites to meet the growth ambitions of the region. No definition for a strategic employment site is set out. In terms of implementation, the SEP identifies that to facilitate the development of strategic employment sites, input will be required from the public and private sectors.
- 2.80 The G First LEP (Gloucester, Cheltenham, Tewkesbury Cotswold, Forest of Dean, and Stroud) recognises the critical role that employment land provision plays in delivering economic growth. The SEP refers back to the employment land requirements for the authorities within its area. The Gloucester, Cheltenham, Tewkesbury Joint Core Strategy goes on to set out a number of 'Strategic Allocations' including a number of mixed use sites, which include employment land provision of 2 hectares up to 45 hectares.

South East

- 2.81 The Hertfordshire LEP SEP recognises that there are supply side challenges relating to the provision of both housing and employment land. In particular there is evidence of a loss of employment land, largely due to the pressure to provide housing. However, no specific guidance is given on how new strategic employment sites can be delivered.
- 2.82 For the Coast to Capital LEP (incorporating Brighton, East Surrey, Croydon and West Sussex) the SEP says that the growth and success of emerging businesses in the area is often put at risk by a lack of premises for them to occupy. This lack of suitable facilities has particularly impacted on the growth in larger businesses in the area. A number of key existing and proposed development sites are proposed, though no requirements for these sites are set out.

Conclusion

- 2.83 Since the revocation of Regional Spatial Strategies, no clear or consistent approach to the delivery of strategic employment land has been adopted, or is evident, at a regional or sub-regional level across the country. We have not identified elsewhere any clear definition of the role or purpose of a strategic employment site, or the parameters for such a site. This was also the case in 2015 when the 2015 Study similarly concluded that no other region has provided a definition of strategic sites, or a rationale for their designation. On this basis, we have found nothing in regional or sub-regional strategies produced since 2015 that would shed any doubt on the definition of strategic sites that was adopted in the 2015 Study, or which is adopted, with revisions, in this Study.

3. Market Position - Offices

- 3.1 Avison Young has prepared an overview of the office property market in the West Midlands with a particular focus on the core markets in Birmingham, Solihull, Coventry and Warwickshire and the Black Country.
- 3.2 It is recognised that, in addition to these locations, there are significant (although much smaller) office markets in other locations such as Leamington Spa, Stoke-on-Trent, Stafford, Worcester and other smaller centres. These centres are not considered as they primarily meet and provide for local office requirements and are not currently perceived as locations for regionally significant investment from national or international occupiers.
- 3.3 This section provides detail on current economic conditions, the role/offer of different areas of the market, and an analysis of demand and supply factors. We draw upon our market knowledge for our analysis taken from our in-house databases and commercially available data sets. Clearly, the course that the economy will take going forward becomes increasingly dependent on the outcome of the Brexit negotiations. However, the regional office market to date has defied the pre-Brexit 'doom and gloom' with continued strong occupational demand across the region over the previous two years.
- 3.4 Underlying demand in key regional cities is predominately from occupiers focusing on national business and consolidation and is therefore relatively insulated, compared to London, from changes in any trade agreements. Although the occupational market has been less affected by Brexit to date, this has had a greater impact upon the development and investment markets, with a notable shift in sentiment as the uncertainty of 'no decision yet' remains. The impact of the current 'rework and delay' outcome taken alongside the election of Boris Johnson as Prime Minister is likely to continue to have an adverse effect on market confidence and decision making.

Birmingham City Centre

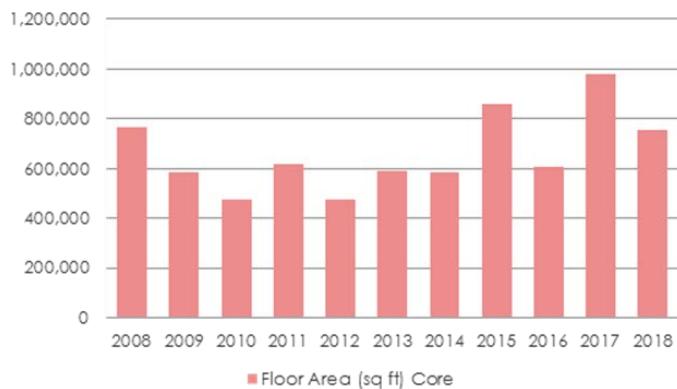
Summary of Current and Future Office Supply

- 3.5 The total office stock in Birmingham's office market was approximately 1.6 million sqm (17.7 million sqft) in 2018. At this point approximately 0.2 sqm (1.64 million sqft) was vacant, reflecting a vacancy rate of 9%, of which approximately 27,034 sqm (291,000sqft) is available Grade A (new and refurbished), circa 92,937 sqm (1 million sqft) Grade B and the balance Grade C, some of which is obsolete and incapable of being let.
- 3.6 Total office stock in the prime core extends to approximately 100,335 sqm (10.8 million sqft) with 269,419 sqm (2.9 million sqft) located within the outer central business district (CBD), which has traditionally been defined as the St Paul's Square and the Digbeth/Eastside (including Eastside Locks) areas of the city centre. The remaining 371,612 sqm (4 million sqft) is located within the Westside of the City.

Demand

- 3.7 As the UK's second city and the economic powerhouse of the West Midlands, Birmingham is a significant office location with the largest business and financial services (B&FS) representation outside London (24% compared to the UK's 22% national average). Office take-up for Central Birmingham in 2017 totalled 93,401 sqm (1.05 million sqft), the highest ever recorded. In 2018, office take-up totalled 70,074 sqm (754,000 sqft), which remains above the 10-year average.

- 3.8 The difference between these 2 years is predominately due to the lease of a 22,305 sqm (240,000 sqft) government hub at the Arena Central development scheme. However, both years demonstrate the continued strong demand for city centre offices.



Source: Avison Young, 2019 Birmingham City Centre: Office Demand

Key Trends

- The 5 year average now stands at 75,159 sqm (809,000 sqft). Historically this has always hovered around 65,032 sqm (700,000 sqft) and demonstrates a growing marketplace. To put the 2017 take-up in Birmingham City Centre into context, the annual average since the 2008 crash has been 67,076 sqm (722,000 sqft), while the 1999 – 2008 average was 57,414 sqm (618,000 sqft);
- The city attracted more inward investors than ever before – key occupiers including Beazley Insurance, HS2, RICS, HMRC, PWC, Allegis committed to Birmingham;
- Grade A leasing activity amounted to 55% (50% typical);
- HS2 occupier activity amounted to just over 9,290 sqm (100,000 sqft) (10%);
- The 5 largest deals accounted for 43% of the marketplace;
- Prime rents are £34 psf achieved in Quarter 2 2018 with WeWork committing to high quality 'back to frame' space at 55 Colmore Row; and
- Current standing stock of brand new grade A supply now only stands at about 22,389 sqm (241,000sqft) – compared to average grade A take up of c 37,532 sqm (404,000 sqft).

Inward Investment

- 3.9 Birmingham has historically appealed in the main to indigenous occupiers. However, over the past few years and in line with the City's increased recognition both internationally and nationally, international companies have started to show interest in relocating to the city.
- 3.10 With many occupiers turning their backs on 'off shoring' in favour of 'near shoring' and London experiencing rental growth in the nearer term, coupled with the occupiers' requirements for a reduction in operating costs and improvement in occupational resilience, this bodes well for Birmingham and other major regional cities. Examples include the following.
- 21,665 sqm (233,200 sqft) – Gov't Property Unit at 3 Arena Central relocating from London
 - 6,689 sqm (72,000 sqft) – Head Quarters for Commonwealth Games to 1 Brindleyplace
 - 4,329 sqm (46,600 sqft) – Irwin Mitchell relocating to The Colmore Building
 - 2,787 sqm (30,000 sqft) – RICS relocating from Coventry
 - 5,574 sqm (60,000 sqft) – PwC relocation from South East to merge with existing Birmingham operation

- 2,044 sqm (22,000 sqft) – General Dental Council relocating from London
- 19,695 sqm (212,000 sqft) – HSBC relocating from London
- 8,640 sqm (93,000 sqft) – We Work

Development Pipeline

- 3.11 Following a 5-year period of little or no development a new cycle of construction is underway. However, only 51,561 sqm (555,000 sqft) of speculative space (at 2 Chamberlain Square and at 3 Snowhill) was under construction and due for completion in 2019 as follows:
- 2 Chamberlain Square which comprises 15,515 sqm (167,000 sqft) net internal area (NIA).
 - 3 Snowhill which comprises 36,046 sqm (388,000 sqft) NIA of floorspace is being marketed.
- 3.12 The next most deliverable new build solutions where full planning permission has been granted comprise:-
- 1 Arena Central 13,006 sqm (140,000 sqft) NIA; and
 - 103 Colmore Row 21,182 sqm (228,000 sqft) NIA (construction is now underway).
- 3.13 In respect of significant Grade A refurbishment schemes, whilst in each case the start date is yet to be announced, speculative development is anticipated to come forward on the following sites:
- 10,405 sqm (112,000 sqft) at Platform 21, New St is underway. Guide rent £23.50 psf.
 - 9,290 sqm (100,000 sqft) at Ladywood House, New Street – Practical Completion estimated 2021. Guide rent mid £20s psf.
 - 12,356 sqm (133,000 sqft) at 19 Cornwall Street – Practical Completion estimated 2020. Guide rent estimated at £30 psf.
- 3.14 The supply of competing development sites is otherwise severely constrained and at an all-time low. Future development schemes of any merit include the following.
- New Garden Square, Edgbaston which is a 55,742 sqm (600,000 sqft) office led, mixed use development being brought forward by Calthorpe Estates and U&I. A funding partner will be required to enable development from 2020.
 - Axis Square which is a 92,936 sqm (1 million sqft) scheme situated immediate behind Arena Central, being brought forward by LCR but a CPO is needed. A funding partner will be required to bring forward development from 2021. Scheme viability is an issue given considerable site assembly costs.
 - Martineau Galleries where there is potential for a 139,405 sqm (1.5 million sqft) scheme opposite the HS2 station. The site is owned by Hammerson who are considering selling their interest. The scheme is unlikely to come forward until 2026 in light of site constraints and to coincide with the completion of HS2.
 - The House of Fraser site, where vacant possession is subject to the outcome of a CVA. Owned by Legal and General but no appetite for speculative development and likely to seek funding partner.

Grade A Availability – Summary

- 3.15 Having regard to the above, the supply of available Grade A office space may be summarised as follows.
- Existing new and refurbished supply – 27,035sqm (291,000 sqft)
 - Wholesale refurbishments completing in 2019/20 – 40,227 sqm (433,000sqft)

- Speculative development completing by 2023 – 98,942 sqm (1,065,000 sqft) (2 Chamberlain Square & 3 Snowhill).

3.16 A total of 1.789 million sqft of 'Grade A' space is either immediately available or completing by the end of 2022. The 5-year average post-recession 'Grade A' take up figure amounts to 37,533 sqm (404,000 sqft) pa. Assuming market conditions remain constant, this would therefore suggest that occupational demand and supply are likely to be in equilibrium over the next 4 years until 2022. If an extraordinary transaction (e.g. a large inward investor) occurred in the intervening period, a supply shortage would likely emerge sooner.

Greater Birmingham Out of Town Offices Market

3.17 The Greater Birmingham Out of Town Offices market predominately comprises of Solihull, focusing on Junction 4 to 6 of the M42 and the primary business parks surrounding Birmingham. Historically, demand in the Solihull and Birmingham Out of Town Office markets has been driven by firms in the ICT and Utilities sectors, occupying HQ style accommodation, attracted by lower cost, flexibility, and availability of car parking compared to the City Centre. More recently, these occupier sectors have been overtaken by organisations within the automotive transport sectors and IT/Gaming, albeit there is not one stand out sector. However, given the BREXIT uncertainty, the market has seen a re-balancing towards business services firms seeking good quality accommodation at a discount to the city centre.

3.18 Birmingham's Out of Town Office market witnessed a boom in the early 1990's when improvements in the area's transport infrastructure (including proximity to airports) coincided with the emergence of out of town business parks as popular office locations. The M42 corridor, particularly the area East and South East of Birmingham, proves particularly popular in this market given its advantage of ease of access to the national motorway network for organisations that are more reliant on car use.

3.19 Much of the development in the early stages was focused on Birmingham Business Park and subsequently Blythe Valley Park in the early 2000s. Since then completion levels of new builds have been relatively low, due to build cost inflation outstripping rental inflation, which can often make schemes unviable, although over the past five years there has been a trend of landlords speculatively refurbishing buildings following the expiry of 20/25 years. Further, there is evidence that occupiers increasingly prefer city and town centre locations due to the high level of surrounding amenity, access to employment talent pool, and a drive towards sustainability and reduction in the use of vehicles and increase in the use of public transport. This has resulted in many owners redeploying areas of their strategic land holdings for residential development, as opposed to offices.

Supply and Development Pipeline

3.20 The Solihull and Birmingham Out of Town Office markets have an estimated stock of 1.44 million sqm (15.5 million sqft). The out of town market witnessed a boom in the early 1990's, which coincided with infrastructure improvements in the area and an increasing popularity of business park locations. This was predominantly due to the ability to offer good quality office space with better car parking ratios at a discounted rental level to the city centre.

3.21 Development also surged in the late 1990's and early 2000's with the emergence of Blythe Valley Business Park and further expansion of Birmingham Business Park. However, more recently, development activity has reduced due to an increasing focus towards office development in the city centre, with out of town development focused towards the industrial sector.

- 3.22 Current availability (including projects under construction and due to complete within the 6-month period) currently stands at 61,223 sqm (659,000 sqft). This equates to a vacancy rate of 4.2%, compared to the historic low of 2000, when vacancy stood at 2.1%. The highest level of vacancy in this market was recorded at 8.3% in 2005. The below table, sourced from PMA, demonstrates the historic context of the Solihull and Out of Town availability trends.

Date	Availability (000s sqft)	Vacancy Rate
1980 - 1999 Peak		1982 – 3.8%
1980 - 1999 Trough		1989 – 0.2%
2000 - 2017 Peak		2005 – 8.3%
2000 - 2017 Trough		2000 – 2.1%
2012	1,083	7.1%
2013	1,153	7.5%
2014	1,000	6.5%
2015	809	5.3%
2016	625	4.1%
2017	695	4.5%
Mid-2018	659	4.2%
% change 2017 – Q2 – 2018	-5.3	

Source: EGI, Agents, Local Authorities, PMA

- 3.23 The Solihull and Out of Town Office market does have a limited development pipeline with 1.1 million sqm (12 million sqft) of office space in the development pipeline, of which 405,986 sqm (4.37 million sqft) benefits from existing planning permission.

Demand

- 3.24 The first six months of 2018 demonstrated a healthy market take up of 17,466 sqm (188,000 sqft), largely as a result of a number of larger transactions, including a pre-sale on a new 5,202 sqm (56,000 sqft) headquarters building to IM Properties. The full years take up totalled 34,154 sqm (367,500 sqft), which exceeded the 2017 take up of 28,345 sqm (305,000 sqft) consistent with that of 2016. In an historical context this can be compared to an annual average of 31,506 sqm (339,000 sqft), since the start of the economic turmoil in 2008.

Date	Take Up (000s sqft)
Average 1984 – 93	146
Average 1994 – 03	327
Average 2004 – 08	209
Average 2009 – 16	339
2013	249
2014	464
2015	528
2016	312
2017	305
6 month % change to Q3 2018	-9

Source: Avison Young, Agents, PMA

Coventry & Warwickshire

- 3.25 The Coventry & Warwickshire market is part of a wider regional market including Coventry, Leamington Spa and Warwick. Typically, Coventry has appealed to national occupiers seeking to provide back office functions, Leamington has a particularly active games software industry and Warwick has catered for HQ occupiers from the media, manufacturing and utilities sectors. As these markets have expanded and the business parks developed these occupiers have become more homogenised with all three locations now competing for the same occupiers.
- 3.26 Coventry and Warwickshire have a total estimated office stock of over 743,224 sqm (8 million sqft) largely dating to the 1950s and 1960s. The wider Coventry area benefits from several out of town office parks, including those at Warwick and Leamington Spa, located to the south. Contrary to trends elsewhere a number of these out of town office parks have been earmarked for future development to help facilitate further growth in research and development.
- 3.27 The Warwickshire area has proved a popular location for R&D and High-Tech Operations, two of the largest being IBM and Telent located at Opus 40 Business Park, Warwick.

Demand

- 3.28 In terms of annual trends in Coventry, take up in 2017 was estimated to be 19,138 sqm (206,000 sqft), on a par with 2016. To put the year 2017 take up level in Coventry in a historic context, the annual average since the 2008 crash has been 20,439 sqm (220,000 sqft), while the 1999-2008 average was 26,942 sqm (290,000 sqft).
- 3.29 Despite relatively healthy levels of take up in 2017, this was boosted by a couple of sizeable deals, rather than widespread demand across the size bands. Arvato let just over 2,415 sqm (26,000 sqft) at the Icen Centre at Warwick Technology Park whilst Arden University agreed to nearly 2,323 sqm (25,000 sqft) at 1M Middlemarch Business Park. The only other notable deal saw The Financial Ombudsman sub-let two floors at One Friargate, a new office development that completed in Q3 2017, and Wolseley UK leasing 33,000 sqft in September 2018 on Warwick Technology Park.
- 3.30 Most deals in Coventry are typically agreed in the out of town market, where better quality office space at generally modern business parks can be found. By comparison, the city centre has historically struggled to attract any kind of investment and currently consists of poor-quality stock confined by the boundary of its ring road. Developments like Friargate in the city centre will add much needed prime stock to the market. The scheme is aimed to respond to the demands of the city's growing professional services and IT sector requirements for prime flexible office space and the masterplan includes 4 Grade A office buildings with restaurants and retail on the ground floors. One Friargate was the first building to be constructed and is occupied by Coventry City Council and the Financial Ombudsman Service. Two Friargate will provide 12,639 sqm (136,000 sqft) and will be delivered either speculatively or through a pre-let by Q4 2021.
- 3.31 The relationship between out of town and city centre take-up is approximately 80%/20%, considerably different to the UK regional average at around 53%/47%.

Supply and Development Pipeline

- 3.32 The 2018 availability equated to a vacancy rate of 4.1%. This was the lowest recorded since 2000 which is predominantly due to limited speculative new build development and the challenge of build cost inflation outstripping that of rental growth. The highest level of vacancy was recorded at 11.8% in 2000.

- 3.33 Coventry has continued to see a decline in available space over the first half of 2018, in line with the trend witnessed since 2010. Despite take up being subdued, deals within the smaller size bands have eroded space, whilst very little secondary stock was returned to the market to counteract these deals.
- 3.34 Similarly, the region saw a decrease in available office space over 2017 and although take up was subdued, demand was still enough to erode more space than was made available. Again, this is predominantly due to limited supply and the impact of 'change of use' of office buildings which have been converted to residential/student accommodation. An example of this is 1,208 sqm (13,000 sqft) at The Oaks on Westwood Way which was removed from the office market for demolition to develop student accommodation, and Coventry University buying Parkside on the edge of Coventry City Council extending to 70,000 sqft.
- 3.35 2017 did however represent a peak year for completions across the Coventry market, but none of which will be available to let in the open-market. It is all the subject of pre-let or pre-sale agreement or direct development by existing occupiers, particularly Jaguar Land Rover at the new R&D Innovation Centre at Warwick.
- 3.36 Following a number of decades with little or no development, the city centre is now starting to see commercial modernisation led by the demolition of redundant 1960s office buildings largely within the Friargate Scheme, the completion of the Boulevard linking Coventry Railway Station to the city centre at grade and the completion of Coventry City Council's own building at One Friargate.
- 3.37 The market has seen limited levels of prime new speculative development since the turn of the millennium. Consequently, fluctuations in availability over this period have generally been driven by the release or take up of second-hand space by occupiers rather than new completions.
- 3.38 The region does have a relatively large development pipeline; there is currently 761,804 sqm (8.2 million sqft) of office space in Coventry's development pipeline, which equates to 94% of stock. Analysing the pipeline in more detail, there are 19 schemes over 9,290 sqm (100,000 sqft), and 15 of between 4,645 to 9,290 sqm (50-100,000 sqft). Whilst some of this will space will not ultimately be delivered for office use, development will help rebalance the supply and demand relationship. However, there is currently no office space under construction across the Coventry market.

Black Country

- 3.39 The Black Country is comprised of the four local authority areas of Dudley, Sandwell, Walsall and the City of Wolverhampton. The area is diverse, from the M5 corridor to the Waterfront at Merry Hill and the town centres of Halesowen, Dudley, West Bromwich and Walsall. These areas have seen a range of office developments completed between 1990 and 2008, however there has been virtually no new office space developed over the past decade. The focus has therefore been towards the refurbishment and re-letting of existing, previously occupied buildings.
- 3.40 Overall demand within the Black Country office market has historically been limited and predominantly led by public sector occupiers, which remains to be the case. However, variation between the four authority areas exists, with some areas appearing stronger than others. Supply within the Black Country has also historically remained stable due to limited development taking place in the market.
- 3.41 The office stock within the Black Country is widespread resulting in no central office hub, unlike competing markets. Due to the nature of the market, saturation of supply can be found in out of town locations, with the traditional centres seeing little office use or development. Therefore, due to the lack of central development, business parks & arterial route locations are more common. We identify below some key office locations within the Black Country;

- Wolverhampton Business Park;
- Providence Place, West Bromwich;
- The Waterfront, Brierley Hill; and
- Castlegate Business Park, Dudley.

3.42 It is estimated that the Black Country currently has 1.134 million sqm (12.203 million sqft) of office space, however, supply does vary as follows:

- Dudley provides 338,983 sqm (3.647 million sqft) of which 3,894 sqm (41,895 sqft) is Grade A;
- Sandwell provides 296,390 sqm (3.189 million sqft) of which 16,514 sqm (177,686 sqft) is Grade A;
- Walsall provides 169,146 sqm (1.82 million sqft) of which 2,014 sqm (21,669 sqft) is Grade A; and
- Wolverhampton provides 329,608 sqm (3.546 million sqft) of which 12,936 sqm (139,188 sqft) is Grade A.

3.43 The vacancy rate in Dudley currently sits at 4.4% for the year to date which is at its lowest it has ever been over the last decade. This compares to the 10 year average of 11.6% vacancy. However, there is no development pipeline for offices in the market with the last new stock being built in 2017.

3.44 The vacancy rate in Sandwell currently sits at 3% for the year to date which is also at its lowest it has ever been over the last decade. This compares to the 10 year average of 5% vacancy. There is currently no Grade A availability in Sandwell. In addition, there is no development pipeline for offices in the market, with the last new stock being built in 2016.

3.45 The vacancy rate in Walsall currently sits at 1.5% for the year to date which is similarly at its lowest for the last decade. This compares to the 10 year average of 6.1% vacancy. There is currently no Grade A availability in Walsall. In addition, there is no development pipeline for offices in the market, with the last new stock being built in 2015.

3.46 The vacancy rate in Wolverhampton currently sits at 6.6% for the year to date. This vacancy rate sits against the 10 year average of 6.3%. The lowest vacancy rate within the last decade was 4.0% in 2016 and the highest was 8.9% in 2010. There is currently 2,562 sqm (27,567 sqft) of Grade A availability in Wolverhampton. In addition, there is currently 10,223 sqm (110,000 sqft) within the development pipeline for offices to be built at Wolverhampton Business Park. The latest development completed in the market was 2 Exchange Court, a 2,230 sqm (24,000 sqft) building located on Wolverhampton Business Park. Further Grade A Office accommodation is being brought forward in the commercial hub around the new Wolverhampton City centre rail, metro and bus Interchange.

Conclusions

3.47 Since the 2015 Study the private sector market has increasingly seen the benefits that regional locations provide for premises due in part to lower occupancy and labour costs. We expect this broad trend to continue.

3.48 Further, judging by the reported ambitions of the co-working sector, 2019 will be the third year in succession of continued growth in take up attributable to serviced office providers, particularly in Birmingham City Centre.

3.49 However, the appetite for development, and the availability of strategic sites for development, varies significantly across the region. On the whole, market evidence still suggests that availability of existing built space continues to tighten, whilst many developers resist the opportunity to develop speculatively due to the associated economic and development risks. Therefore there remains a strong level of planned supply of sites readily available which can accommodate any resulting new development in areas outside of the traditional Birmingham City Centre office core.

4. Market Position – Industrial

- 4.1 Avison Young has prepared an overview of the industrial property market in the West Midlands to inform this Study. This section provides detail on economic conditions through 2018, and an analysis of demand and supply factors at both a national and regional scale. The source of all data and charts within the section is Avison Young, unless stated otherwise.
- 4.2 For the avoidance of doubt, where we refer to the 'West Midlands' in our commentary on take up and supply in this Section, we are referring to the area that is covered by the Metropolitan Boroughs that make up the West Midlands conurbation together with Worcestershire, Warwickshire, Staffordshire, Shropshire & Herefordshire. This differs from the geographical area covered by this Study in that it includes Shropshire, Herefordshire and Worcestershire. All references should be read in this context, both in this section and where our commentary feeds into other sections of this Study. Any reference to the 'East Midlands' includes also Derbyshire, Leicestershire, Nottinghamshire, Lincolnshire, Rutland and Northamptonshire, and any references to 'The Midlands' are to the 'West Midlands' and 'East Midlands' areas as defined in this paragraph.

Economy

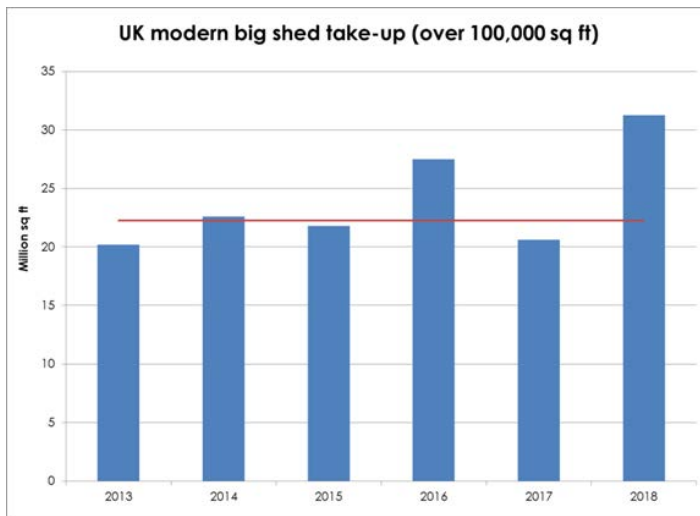
- 4.3 UK economic growth remains subdued as the drawn-out process to leave the EU has left the UK engulfed in a prolonged period of uncertainty, which continues to weigh on business decisions in both the manufacturing and services industries. The key business confidence survey (Markit/CIPS) has hovered around the crucial 50 no-change threshold over the past few months. However the UK labour market remains buoyant with the lowest levels of unemployment since 1974.
- 4.4 The outlook for UK economic growth continues to be dominated by political and Brexit-related matters. In the short-term this is likely to have a knock-on effect on the economy as the uncertainty remains. This comes at a time where global factors are less favourable, with escalating global trade tensions and a slowdown in the global economy potentially adding further stress to the UK economy. Output growth is anticipated to come in under trend at 1.2% for 2019, 1.3% in 2020 and an average of 1.7% per year in the 2021-2024 period.

National Overview

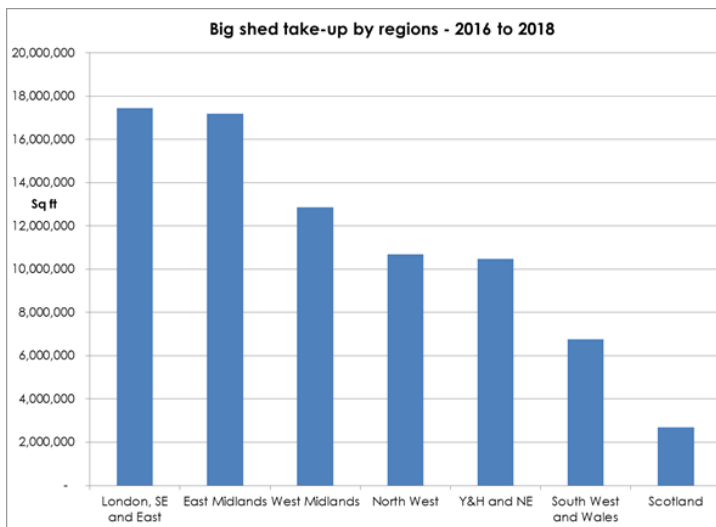
Demand

- 4.5 Overall occupier demand for the industrial market remained strong through 2018. This was driven by a wide range of potential occupiers from sectors including retail and wholesale, online retailing, third party logistics and high value manufacturing/engineering.
- 4.6 The Industrial and logistics sector continued through 2018 to benefit from the strong growth in e-commerce and the structural changes to the retail sector as the competition intensifies for the reduction in delivery times. The importance placed on 'last-mile' delivery will continue to support demand for logistics assets.
- 4.7 This demand is evident in take-up levels of the industrial and distribution market for the last few years. For the purposes of this report we have analysed take-up of Grade A new/modern warehouses over circa 9,290 sqm (100,000 sqft). The take up of Grade A new/modern warehouses of this scale in the UK since 2016 (and up to the end of 2018) amounted to a national average of circa 2.5 million sqm (26.5 million sqft) per annum, which was 21% above the long-term average.

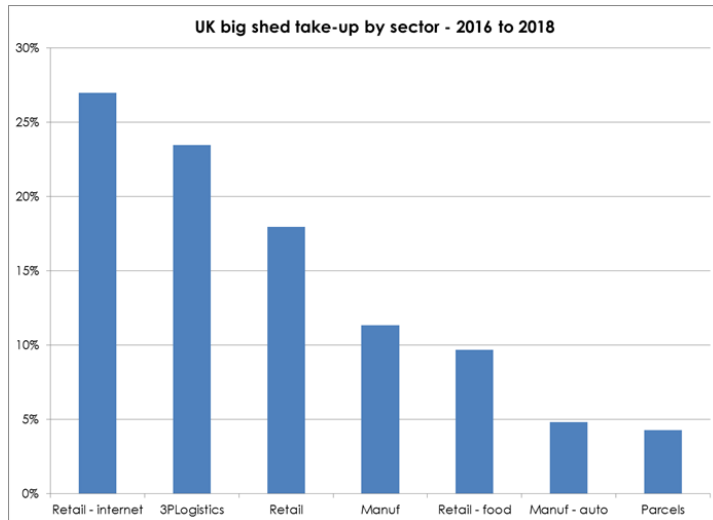
4.8 The average annual take-up of new floor space for the Midlands region was 50% greater in the period from 2014 to 2018. In addition, there was significantly greater activity in the mid-box sector (25,000-75,000 sqft). This sector is increasingly taking up development land at existing strategic employment sites.



4.9 At a regional level, the Midlands accounted for 38% of UK take-up (957,000 sqm or 10.3 million sqft pa) over this time (i.e. 2013-2018). This was broken down to 22% in the East Midlands (539,033 sqm or 5.8 million sqft) and 16% in the West Midlands (408,922 sqm or 4.4 million sqft). This compared to 22% in London, the South East and East; 17% in Yorkshire and the North East and Scotland, 14% in the North West and 9% in South West and Wales.

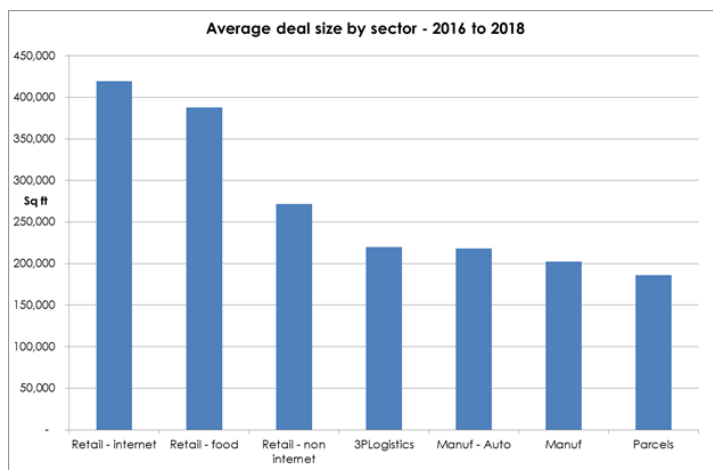


4.10 Over the three year period (2016-18) sectoral demand was dominated by the retail sector with non-internet retail (28%), ecommerce (27%) and third party logistics (23%) all contributing significant shares of activity. Although demand from manufacturing occupiers fell in 2018 it has accounted for 16% since 2016, of which almost a third was from the automotive subsector.



4.11 Take-up levels were boosted by some exceptional deals, including over 1.5 million sqm (16 million sqft) to Amazon in 29 deals, which amounted to 20% of all take-up. The largest was 204,461 sqm (2.2 million sqft) over four floors at London Distribution Park, Tilbury. The next most acquisitive occupier was Lidl who took 418,216 sqm (4.5 million sqft). Many of the larger deals were either pre-lets or land sales.

4.12 Many of the deals to logistics providers can be attributed to contracts outsourced from retailers with XPO, Eddie Stobart, Clipper Logistics and Wincanton being particularly active. Of the retailers, the discounters The Range and B&M were among the largest deals, and after Lidl, Aldi and Co-Op were the most active in the food sub-sector. Although the manufacturing sector was quiet in 2018 JLR and its supply chain are the stand out occupiers of the last few years. More recently 37,175 sqm (400,000 sqft) has been pre-let at Hams Hall for battery assembly which illustrates the change from diesel engines to battery technology.



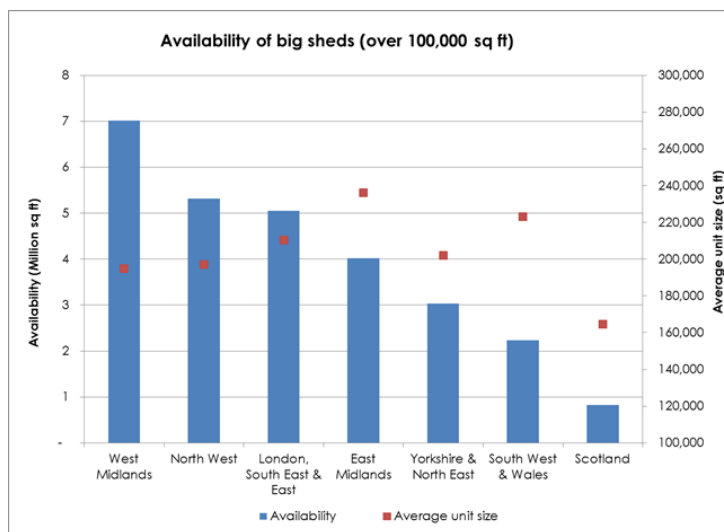
4.13 The RICS UK commercial property market survey (Q1 2019) confirmed that the performance in the industrial sector occupier and investment markets remains resilient. It said that:-

“Solid fundamentals continue to drive growth in the industrial sector....the sector continued to see a steady rise in tenant demand. Alongside this, vacant space across the industrial sector continued to edge down, although the decline in Q1 was the most modest since 2013....with regards to the outlook for rents, contributors are still anticipating further growth across both prime and secondary areas of the industrial market over the next 12

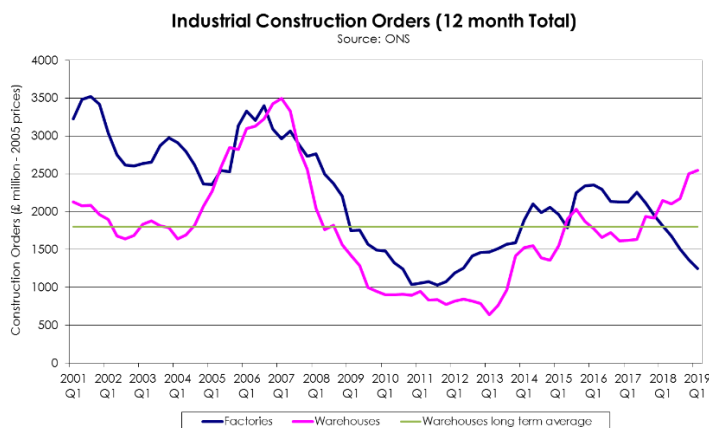
months...meanwhile, the investment enquiries indicator remained in positive territory across the industrial sector, albeit to a lesser extent than at any other point over the past two years”.

Supply

- 4.14 In terms of supply, availability of modern big sheds in the UK (as at the end of 2018) amounted to 2.54 million sqm (27.3 million sqft), approximately 15 months’ supply based on past take-up rates. This compared to 2.25 million sqm (24.3 million sqft) recorded at the end of 2017. Supply has been at around this level for the past three years but fell dramatically from 8.36 million sqm (90 million sqft) at the end of 2009.
- 4.15 Although the Midlands (West and East) had the highest level of availability of supply at over 1.02 million sqm (11 million sqft) the supply (when compared to take-up rates), was similar to the rest of the UK at just over a year. This is corroborated by the low vacancy rate in the region, which we discuss later.



- 4.16 The annual level of new construction orders (a proxy for development activity) across the warehouse sector remained well above the long-term average as can be seen in the chart below. With a large number of speculative completions in the pipeline as well as some modern second-hand sheds returning to the market, we expect supply levels to gradually increase. However, assuming continued occupier demand we anticipate supply will continue to remain relatively constrained subject to the outcome of Brexit negotiations.



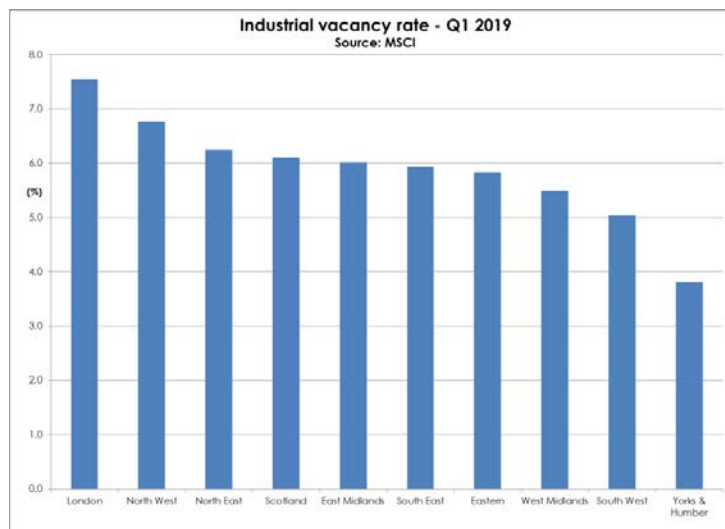
- 4.17 Speculative activity during this development cycle has been mainly concentrated in core locations. This is emphasised by the dominance of the Midlands. Speculative units tend to be proportionally smaller than the larger

bespoke design and build units, to reduce exposure to risk. The Midlands speculative supply has risen from just over 464,515 sqm (5 million sqft) in 2017 to just under 622,450 sqm (6.7 million sqft) in 2018.

- 4.18 Design and build occupiers have been increasingly looking at off prime locations where labour availability and rents provide lower cost solutions. There are greater pre-let opportunities and there is less competition for sites from speculative developers who have tended to concentrate on prime locations.
- 4.19 Demand for development sites is still very strong from both developers and many investors. Robust capital value and rental value growth continues to keep development viability healthy, in spite of the recent growth in building costs and uncertainties in the market. The larger Midlands speculative development sites include M6DC Cannock, Hinckley Park, Hinckley, Panattoni Park Nottingham and Northampton and Bericote Four Ashes, Wolverhampton, South Staffordshire.
- 4.20 Demand in the big shed market is being matched by design and build construction and speculative development. In comparison, the multi-let sector also has a broadening occupier base and growth in demand but is not being matched by an increasing level of supply although this picture is changing in 2019. There continues to be a lack of speculative development for multi-let industrial estates as the costs are relatively high and a lot of the sizes are less attractive to the larger investor. Development constraints, difficulties in funding developments without pre-lets and the loss of some estates to alternative and higher value uses is restricting supply. This means that existing major logistics and industrial parks generally attract high occupational take-up, driving rental growth performance and minimising voids.

Vacancy rates

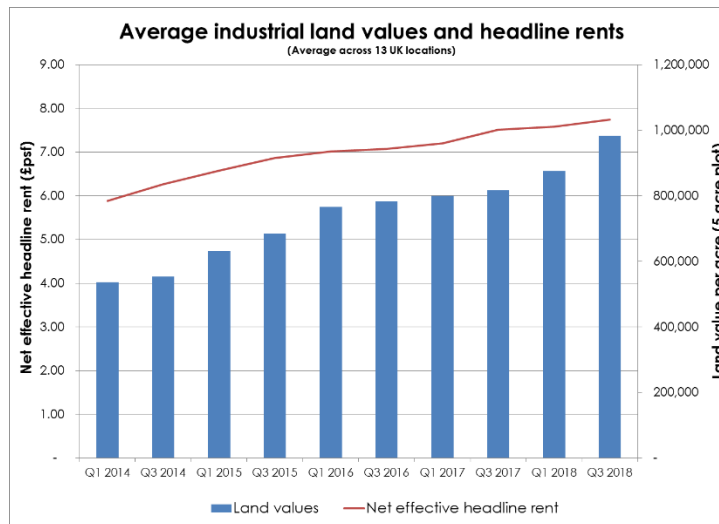
- 4.21 According to the investment property database MSCI (Morgan Stanley Capital International) the national vacancy rate for distribution property stood at 4.5% at Q3 2019 and has been below 5% for the last six years but fell from 11% in 2009. MSCI provides regional vacancy rates for all industrial property. All regions have relatively low vacancy rates, ranging from 4.6% to 7.6% as can be seen from the chart below. This is indicative of the strong demand in recent years combined with constrained supply and relatively limited levels of construction activity.



NB. the y axis is the % of available stock to total stock. These vacancy rates appear at a level where there is healthy demand but also a choice of supply for occupiers.

Land values

- 4.22 There has been exceptionally strong growth in industrial land values over the four years to Q4 2018. Over the 13 locations that we monitor, the average price rose from £537,000 an acre in Q1 2014 to £983,000 in Q3 2018 (83% increase based upon a typical land sale of 5 acres). The land constraints in the South East mean that increases in land values have been by far the strongest, particularly in London where values have soared. For example values in Park Royal have increased by 120% and in Enfield by 180%. Across the Midlands and North West values increased by over 50% whereas values in Bristol, Cardiff, and Glasgow remained stable.



Rental growth

- 4.23 The supply/demand dynamic for industrial space continues to put pressure on rental values. Average net effective prime rents for the 13 locations we monitor increased by 3.1% over the 12 months to December 2018 and by 31% over the past four years. The rent free period on a ten year term has fallen from an average of 12 months to 8 months over that time.
- 4.24 According to MSCI's quarterly index average distribution rental growth increased by 3.4% during 2018. This continued a growth rate that has sustained for the last four years.

Outlook

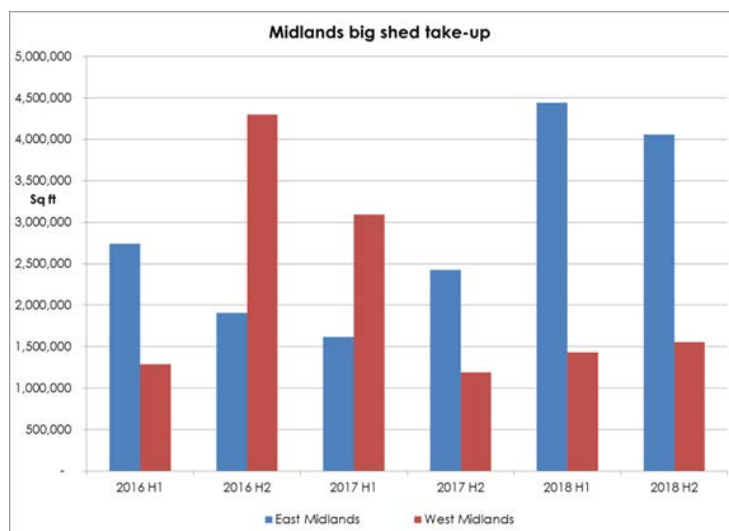
- 4.25 The fundamentals in the industrial sector have remained resilient despite the uncertainty caused by the EU referendum although 2019 saw some softening of investor and occupational demand. Activity continues to be underpinned by the strong demand from online shopping and 'last-mile' delivery where space requirements are expected to increase in step with the 10% annual increase in online retail sales. This could lead to further stress on industrial land availability which is competing with higher value uses, and will maintain pressure on land values in prime areas. As such, we expect a continuation of low vacancy rates and positive rental growth.
- 4.26 Brexit is unlikely in the longer term to overturn the benefits from the structural changes occurring within the industry. Online retailers, such as Amazon will continue to grow and demand space to fulfil e-commerce orders and 'last-mile' deliveries. However, the industrial sector is not immune from a hard Brexit which could cause disruptions in the supply chain process, including agreement on the movement of goods, the costs of tariffs and the availability of labour.

The Midlands (Combined East and West Midlands)

- 4.27 The Midlands is one of the UK’s leading industrial locations. It is home to a number of international manufacturers and large-scale logistics businesses attracted by its excellent connectivity and favourable demographics, access to markets and availability of suitable labour. Occupier demand for logistics accommodation in the Midlands is driven by the cost savings which can be obtained from efficient distribution, and drive time benefits to the UK population. This has seen the establishment of the largest logistics hubs and a wide range of parcel sortation depots. Industrial occupiers are drawn to the Midlands by its ready access to labour and raw materials and its long history of vehicle and aerospace manufacturing. The Midlands conurbations now offer a diverse range of multi-let and mid urban industrial estates and national distribution and logistics centres which appeal to local regional and national companies.
- 4.28 As evidenced by the statistics below demand has been dominated by the retail sector, with ecommerce (30%), non-internet retail (28%) and third-party logistics (32%) all contributing significant shares of activity. Demand from the manufacturing sector fell following strong activity in 2016 and 2017.
- 4.29 Occupiers are increasingly influenced by the importance of efficiency, image, CSR and green credentials. In light of this, in addition to expansion of the key logistics sectors which dominate the markets, a number of occupiers are looking to ‘trade up’ from secondary space to new accommodation. This is particularly relevant to the availability of new development both on a speculative and pre-let basis where lead in times can be minimised by the provision of well located, serviced sites available for immediate development.

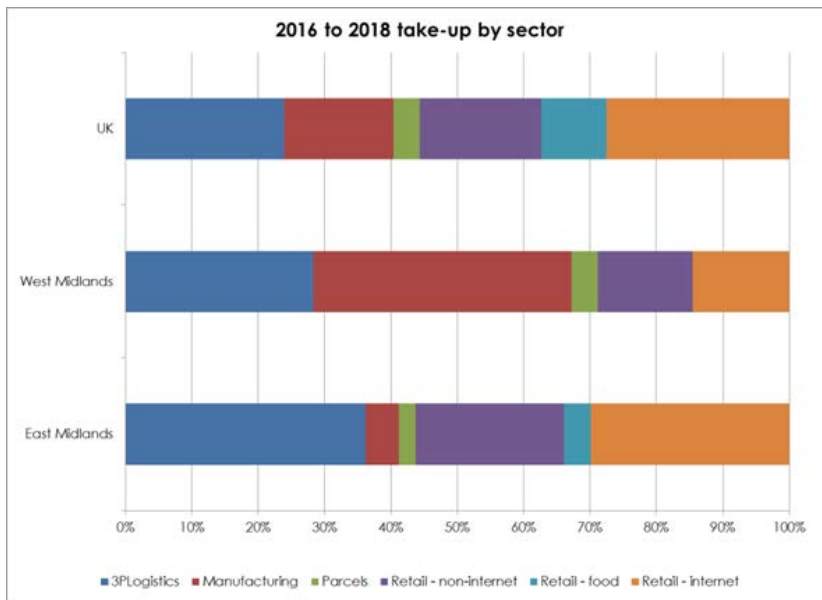
Demand

- 4.30 As with the UK overview we have concentrated our analysis on deals since 2016 and up to the end of 2018. Take-up of new/modern warehouses over 9,290 sqm (100,000 sqft) over this period averaged 0.95 million sqm (10.3 million sqft) p.a. across the Midlands over the past three years, 38% of all take-up across the UK (16% in the West Midlands so 0.41 million sqm (4.4 million sqft), 22% in the East Midlands).

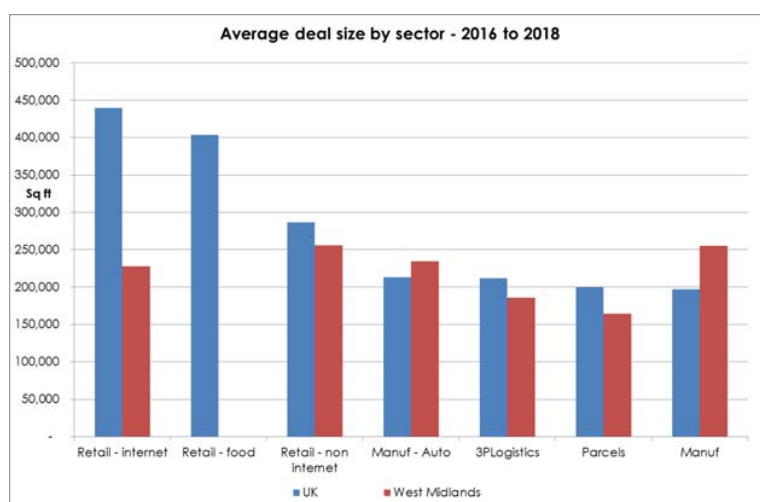


- 4.31 Over the long-term take-up activity has shown a similar split with the East Midlands marginally higher than the West Midlands, although this tends to fluctuate significantly over the short term. Recent activity has been strongest in the East Midlands, although in practice much of the key activity such as the golden triangle and East Midlands Gateway borders both regions.

- 4.32 The chart below shows the distinct variation in activity by sectors across the Midlands when compared to the UK. There was over twice as much take-up of manufacturing space in the West Midlands between 2016 to 2018, which continued a long-term trend of strong demand for this type of space. Of this, over half was in the automotive sector which may now weaken.
- 4.33 There has also been a greater proportion of third-party logistics take-up in the Midlands, particularly the East Mids. This is partly as a result of major logistics transactions at the East Mids Distribution Centre and the Midlands Logistics Park, Corby. Another key sector - internet retail activity was stronger in the East Mids compared to the UK as a whole, while activity in the West Mids was considerably below the UK average.
- 4.34 Based on our take up figures the land absorption rate equates to over 263 hectares (650 acres net) in the year-end 2018 which (although being a year of exceptionally high take-up) provides useful context to assess the supply of and demand for land either consented or allocated for industrial/logistics uses in the future. Based upon the overall 3-year average take up at 956,900 sqm (10.3 million sqft) p.a. the approximate equivalent land required to meet that level of take up will be over 208 ha (515 acres) (net of land for infrastructure) p.a. across the combined West Midlands ad East Midlands geography.



- 4.35 Over the three years to 2019 there have been a larger amount of smaller deals in the West Midlands than the East Midlands. Consequently, there is a significant difference in the average deal size of 19,888 sqm (214,000 sqft) in the West Midlands and 30,669 sqm (330,000 sqft) in the East Midlands, which compares to 24,256 sqm (261,000 sqft) across the UK as a whole.
- 4.36 The chart below shows the average deal sizes by sector. In the West Midlands, there is less variation in the average size of deals by sector compared to the rest of the country where internet retail design and build deals tend to be much larger. There have also been no food retail deals in the West Midlands, another sub-sector which takes larger buildings.



4.37 The table below shows the key manufacturing deals in the West Midlands over the 3 years to 2018. The letting to JLR at Fort Dunlop was the largest manufacturer deal in the UK, closely followed by 50,446 sqm (543,000 sqft) deal to Gestamp Tallent at Bericote Four Ashes (South Staffordshire). The strength of the automotive manufacturing sector is evident with four deals to JLR as well as Aston Martin and component suppliers such as Grupo Antolin.

Recent grade A take-up in units of 100,000 sqft+ in the Midlands, manufacturers				
Deal Year	Tenant	Scheme & Address	Town	Size (sqft)
2018	Meggitt PLC	Prospero, Ansty	Coventry	453,214
2018	Jaguar Land Rover	Prologis Park, Hams Hall	Coleshill	414,360
2018	Kohler, MIRA	Worcester Six	Worcester	159,000
2018	Y International	Advanced Manufacturing Hub	Birmingham	124,000
2017	Jaguar Land Rover	DC2 Wingfoot Way, Fort Dunlop	Minworth, Birmingham	555,000
2017	Beko PLC	Birch Coppice	Tamworth	346,124
2017	Michelin	Unit 1 Campbell Rd	Stoke On Trent	289,510
2017	Kimal PLC	Worcester Six, Warndon	Worcester	140,000
2017	JLR	Lyons Park	Coventry	135,000
2017	Aston Martin	M40 Distribution Park	Wellesbourne	130,000
2017	Grupo Antolin	Barton Business Park	Barton under Needwood	113,000
2017	Preston Innovations Ltd	Stafford Park 12	Telford	101,663
2016	Gestamp Tallent Ltd	Enterprise Dr	Wolverhampton	543,692
2016	Jaguar Land Rover Ltd	London Rd	Coventry	327,730
2016	Magna International Ltd	Naird Lane	Telford	225,005
2016	CSM Bakery	Nasmyth Road	Daventry	216,642
2016	Alstom	Mustang Dr	Stafford	197,842
2016	Michelin	Campbell Road	Stoke On Trent	150,000
2016	Sertec Ltd	FaradayAve	Birmingham	144,996
2016	Jaguar Land Rover Ltd	Ryton	Coventry	141,225

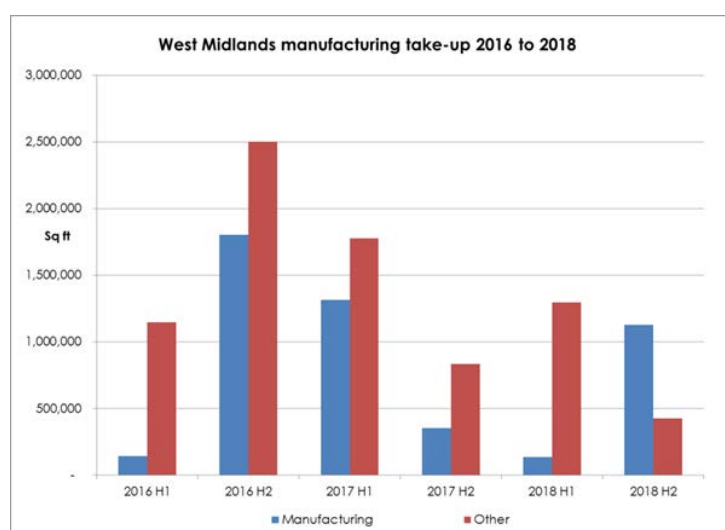
Note: units taken by manufacturers are not all necessarily used for production but will generally from part of the supply chain

- 4.38 Of the non-manufacturing deals retail and third party logistics dominate the largest deals. Amazon is unsurprisingly the key occupier, which has committed to 120,773 sqm (1.3 million sqft) in the West Midlands in five deals, with the largest being 39,948 sqm (430,000 sqft) in Coventry. Of the logistics companies, XPO took the largest deal across the region over the past three years at 59,922 sqm (645,000 sqft), while DHL took over 46,451 sqm (500,000 sqft) in 3 deals receiving different contracts.

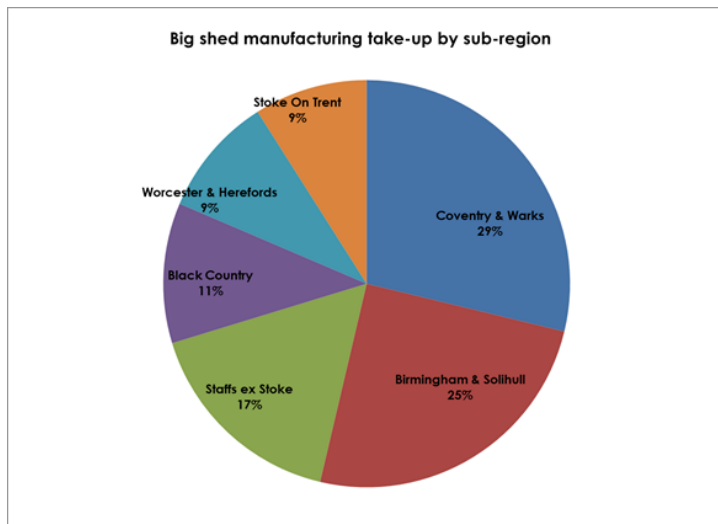
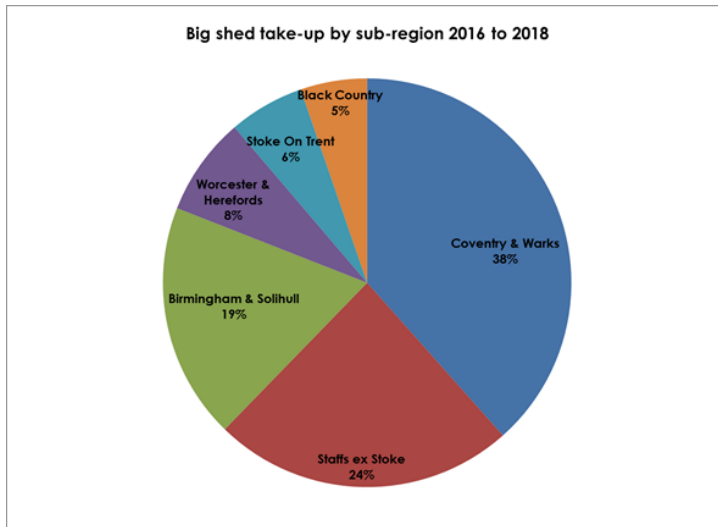
Recent Grade A take up in units of 9,290 sqm (100,000 sqft) non-manufacturing				
Deal Year	Tenant	Scheme & Address	Town	Size (sqft)
2018	Kitchen Craft	The Hub Noble Way	Birmingham	250,000
2018	Optima Logistics	DC7 Zone A, Apex Park	Daventry	216,639
2018	Martin Brower	Dolomite Avenue	Coventry	210,682
2018	Zooplus AG	Carbon 207, Middlemarch Business Park	Coventry	208,114
2018	Palletline	CF-180, Middlemarch	Coventry	186,531
2018	Internet Fusion	DC6 Prologis Park, Rockingham Road	Kettering	156,669
2018	Panic Transport	DC 115 DIRFT	Daventry	115,824
2018	Supersmart services	Fradley Park, Lichfield	Lichfield	108,000
2018	World of Books Limited	Carbon 103 Middlemarch Business Park, Siskin D	Coventry	103,299
2017	XPO	Bonehill Road	Tamworth	645,000
2017	Amazon	Lyons Park	Coventry	433,949
2017	Gardman Limited	Apex Park Nasmyth Road, Daventry	Daventry	413,789
2017	DHL	RG3 Rugby Gateway	Rugby	180,000
2017	Kuehne + Nagel	100 Scimitar Way, Whitley Business Park	Coventry	214,188
2017	Anixter	213 Fradley Park	Lichfield	213,000
2017	Arrow XL	Droitwich Central Egghill	Droitwich	181,648
2017	Eddie Stobart	J1 Plot 2, Central Park	Rugby	158,273
2017	GEODis	Unit 3 Dove Close Fradley Park	Lichfield	126,580
2017	Bond International	Core 42, Watling Streep, Dordon	Tamworth	106,000
2016	Screwfix Direct Limited	Wood End Lane	Lichfield	562,013
2016	Amazon	Royal Oak Way	Daventry	297,398
2016	Palletforce PLC	Parkway Road	Burton On Trent	253,370
2016	Amazon	Rugby Gateway	Rugby	250,000
2016	Amazon	Stanley Matthew s Way	Stoke On Trent	219,685
2016	Amethyst Group	Loxley Road	Warwick	210,000
2016	DHL	Wolseley Drive	Birmingham	208,186

2016	The Works Stores Ltd	Faraday Ave	Birmingham	183,435
2016	Gist Ltd	Siskin Parkway East	Coventry	165,785
2016	DB Schenker	Centurion Park	Tamworth	140,000
2016	ERA Locks	M54 J2	Wolverhampton	134,625
2016	Amazon	Kingswood Road	Droitwich	125,285
2016	AMCO Logistics	Acanthus Park	Redditch	120,000
2016	Pointbid Logistics Systems	66 Electric Ave	Birmingham	118,581
2016	Toolstation	Western Way	Wednesbury	118,073
2016	DSV	Prologis Park Sideway Queensway	Stoke On Trent	108,515
2016	DHL	Park Ln	Sutton Coldfield	102,750
2016	Tile Giant	Common Ln	Lichfield	102,174
2016	Bertelsmann logistics	Express Point, Primus	Birmingham	100,000

4.39 The chart below shows the high proportion of take-up by manufacturing occupiers in the West Midlands.



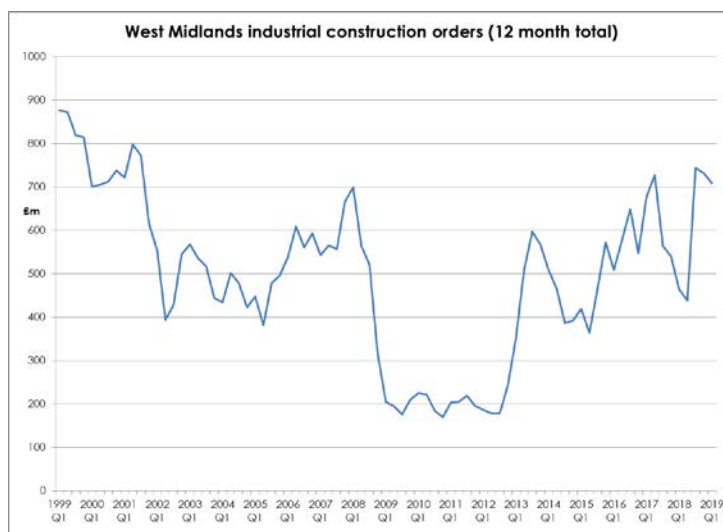
4.40 The charts below show the breakdown of deals across the West Midlands by sub-region together with the proportion of space taken by the manufacturing occupiers.



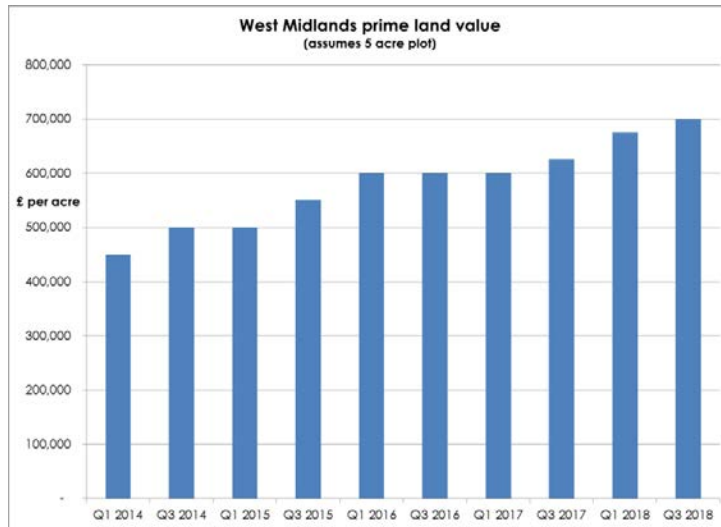
- 4.41 In the West Midlands the greatest amount of total take-up has been on sites with motorway access. The greatest proportion is the core golden triangle sub-regions east and south of B'ham including over a third of activity in Coventry and Warks with multiple deals at Lyons Park, Middlemarch Business Park and Rugby Gateway. Also further north along the M42 in B'ham and Solihull such as Minworth and Faraday Ave, 'Staffs ex-Stoke' with deals at Centurion Park (Tamworth) and Fradley Park (Lichfield) and in Warwickshire at Birch Coppice. The vast majority of take-up was within estates or employment areas of a strategic scale, a significant number of which are clearly recognised as single entities (eg i54 or Hams Hall), consistent with the 25ha definition used for the purposes of this Study.
- 4.42 The sub-regions with the least amount of activity are those to the west of Birmingham, 'Worcester & Hereford', the Black Country and further up the M6 in Stoke-on-Trent. There is a similar picture with manufacturing deals. The three sub-regions with the highest level of activity for all deals also applies to manufacturing deals, although they were not quite as dominant. Current and imminent demand is strong in the Midlands. There are a number of requirements indicating that robust activity will continue.

Supply

- 4.43 Similar to the rest of the UK there was a dramatic fall in the availability of modern big sheds across the West Midlands from 2010 to 2014 following a period of recovery in market demand after the financial crisis. As a result, no new development took place from 2008 and the availability levels steadily reduced to more manageable levels and rental growth returned.
- 4.44 The resumption of speculative development from 2014 has increased supply levels in the Midlands but with relatively strong levels of demand this increased supply has been matched, in prime locations, by demand.
- 4.45 According to our analysis at the end of 2018 there was approximately 1.097 million sqm (11.8 million sqft) available in 52 units in the Midlands including speculative units under construction.
- 4.46 Demand for development sites is still very strong from both developers and investors. While development viability has improved with strong rises in capital values and improving rental growth, this has been partly counterbalanced by rising costs.
- 4.47 Annual warehouse construction orders, which is a proxy for development activity, have more than doubled since the low point at the beginning of 2013 and as can be seen from the chart below had reached by Q1 2019 a level similar to the previous peak in 2007.

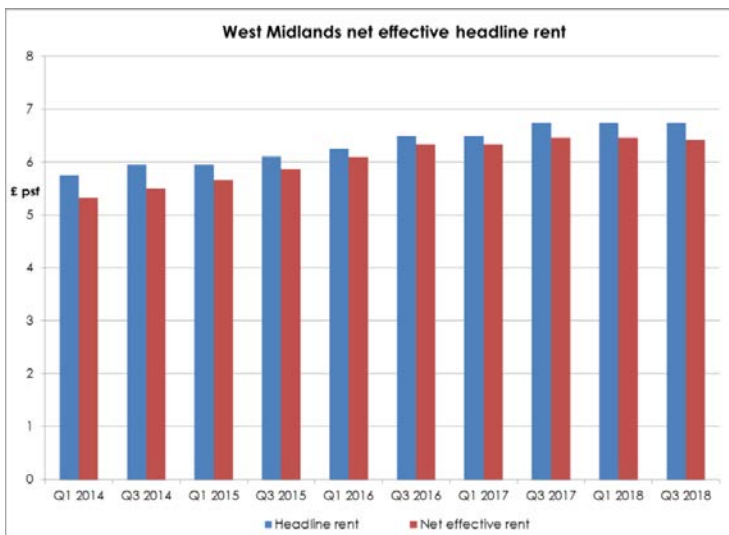


- 4.48 There continues to be a reasonable short term supply overall of developer held land available to occupiers for either existing new or modern units (see above) or for design and build, although this varies considerably between the towns and cities in the region.
- 4.49 Land values increased sharply over the two years to Q3 2018. In the Midlands, on average a circa 2 ha (5 acre) site increased from circa £1.1 million a hectare (£450,000 an acre) in Q1 2014 to an estimated level of circa £1.73 million per hectare (£700,000 an acre) by Q3 2018, although higher figures have been achieved in isolated cases, an increase of 55% over just four years. Whilst most recent land purchases have been by developers the detail of these deals are generally not published due to confidentiality and the impact of cost allowances made for infrastructure, demolition, remediation etc. the details of which are not revealed.



Prime rents

- 4.50 Headline rents in the West Midlands stabilised over the 12 months to Q3 2018 to £6.85 psf with nine months' rent free on a ten-year term often available, this equates to a net effective rent of £6.41 psf, which increased from £5.32 since Q1 2014. Quoting rents generally ranged from £6.00 to £7.20 depending on size and location, with the rents in the more peripheral locations at a lower level as might be expected.
- 4.51 On the MSCI quarterly index average industrial rental values in the Midlands grew by 2.8% over the year to Q3 2018 and by 18% since the bottom of the rental cycle at the end of 2012.



Midlands – Take Up and Supply Summary (2015-2018)

- 4.52 This Study considers the need for strategic employment sites based upon a review of past trends and take-up over recent years, and on current supply of allocated and consented sites. Avison Young has compiled data relating to the take up of Grade A floorspace, in Grade A units of 100,000 sqft and above, over the period 2015 to 2018, both including and excluding Design & Build schemes.
- 4.53 The data has been disaggregated between the 'West Midlands' and 'East Midlands', as defined at para 4.2 above. We are mindful that our definition of the West Midlands includes Worcestershire, Herefordshire and Shropshire,

which are not in the Study Area (Figure 1.1). We have not sought to disaggregate those Shire Counties from our 'West Midlands' statistics, however, on the basis of our judgement that the number of 100,000 + sqft deals in these areas over the period has been negligible. In our view, it is reasonable to conclude that the vast majority of take up over the period has been within the Study Area.

- 4.54 The figures are set out in the tables below. We have included the East Midlands data, as well as the West Midlands data, as that allows for a general sense check of the figures against the aggregated data that is quoted throughout this section of the Study. The source for all tables is Avison Young (2019).

Midlands Take Up – Grade A 100,000 + sqft (9,290 sqm) (2015-2018) Including D&B (Sqft Million)

	2015	2016	2017	2018
West Midlands	3,203,000	6,244,000	4,421,750	3,440,000
East Midlands	4,636,000	4,352,500	2,352,000	10,539,300
Total Midlands	7,839,000	10,596,500	6,773,750	13,979,300

Midlands Take Up – Grade A 100,000 + sqft (9,290 sqm) (2015-2018) Excluding D&B (Sqft Million)

	2015	2016	2017	2018
West Midlands	1,353,100	2,394,570	2,615,500	1,024,650
East Midlands	2,510,350	2,379,400	772,000	3,819,700
Total Midlands	3,863,450	4,774,970	3,387,500	4,844,350

- 4.55 The figures confirm that the average annual take up of Grade A floorspace of 100,000+ sqft over the period assessed, in the West Midlands, was as follows.

- All take up including D&B - 4,327,200 sqft (402,000 sqm)
- Take up excluding D&B - 1,847,000 sqft (171,600 sqm)

- 4.56 We do not have full year data for 2019. However, the data to the end of Q3 2019 is included in the Table below and has been adjusted, pro-rata (and rounded), to full year figures. On this basis, it appears that West Midlands take up over 2019 will be less than the average for 2015-2018 considered on the basis of total take up, and similar in relation to take-up excluding D&B schemes.

Midlands Take Up – Grade A 100,000+ sqft (9,290 sqm) (Q1-Q3 2019) (Sqft Million)

	2019 (All take up)	Full Year (pro rata)	2019 (excluding D&B)	Full Year (pro rata)
West Midlands	1,528,000	2,037,300	1,338,000	1,784,000
East Midlands	5,524,000	7,365,700	1,567,600	2,090,130
Total Midlands	7,052,000	9,402,660	2,905,600	3,874,130

- 4.57 These figures must all be read on the basis that they relate to all Grade A units in all locations and on all types of site. Moreover, they will include a number of deals that were substantially larger than 100,000 sqft (9,290 sqm). Nonetheless, they provide a reference point for considering the available years supply of opportunities that can accommodate requirements of this scale.

Conclusion

- 4.58 This analysis has confirmed significant demand in the West and East Midlands over the period 2015 to 2018 for industrial/logistics floorspace over 100,000 sqft, with average take up of 0.9 million sqm (9.68 million sqm) p.a. over the combined West and East Midlands area. The corresponding figure for the West Midlands was 0.4 million sqm. Adopting the assumptions in this Study about site capacity, this would absorb circa 225 ha p.a. across the Midlands, and circa 100 ha p.a. within the West Midlands.
- 4.59 There was circa 1.1 million sqm (11.8 million sqft) of existing property and units under construction in the combined West and East Midlands area at the end of Q4 2018, which was available in 52 units including speculative units under construction. This equated to approximately two year's supply across the combined West and East Midlands area, having deducted design and build transactions (assuming no growth in demand and deducting design and build transactions). Availability would have been approximately half this for the Study area. At the end of Q3 2019, there was circa 0.65 million sqm (7.0 million sqft) of existing property and speculative units under construction in the combined West and East Midlands area, and only 0.14 million sqm (1.5 million sqft) in the West Midlands, equating to less than one year's supply in the West Midlands area.
- 4.60 The West Midlands remains an attractive location for investment for both existing and prospective occupiers. This is due to many factors including its accessible location, access to labour, skills, markets, supply chain and favourable demographics. Labour supply is emerging as one of the most significant influencing factors in locational choice.
- 4.61 Whilst demand has historically been characterised by the automotive sector with occupiers seeking space for advanced manufacturing and engineering floorspace, and their supply chains, this sector is changing. 2018 saw a quieter year with Brexit uncertainty (as a proportion of total take up) with significant demand from the retail sector, non-internet (28%), ecommerce (27%) and third party logistics space (23%). Whilst demand still remains in the automotive sector, 2018 saw some demand for battery development and assembly plants reflecting the growing trend of automotive manufacturers looking at electric car technology as an alternative to diesel and petrol combustion engines.
- 4.62 The analysis has clearly shown that supply needs to match demand with circa 0.4 million sqm of floorspace required p.a. in the West Midlands to maintain recent levels of take up. Whilst this analysis has focussed on past take up trends (not allowing for future growth), and current and existing supply, it is clear that the market will respond if fit for purpose supply is available, with scope for such take up to increase, particularly with the probability of receiving strategic, one-off inward investment requirements.
- 4.63 At present the usual churn of the property market and opportunities for trading up to higher quality premises is accounting for the available supply. Given the opportunities for businesses of a well positioned West Midlands location we are confident that an increase in supply will result in an increase in demand.
- 4.64 For the region to fulfil its clear potential, as advocated earlier in this Report, this level of good quality supply needs to be maintained and increased. It is recommended that a proactive approach is taken to identify a deliverable portfolio of fit for purpose employment land and property capable of providing sufficient supply thus enabling it to provide a timely response to meet both known local needs and unknown (and at times unquantifiable) strategic employment requirements.

5. Stakeholder Engagement

Approach

- 5.1 Given the considerable interest in this Study from key stakeholders active in the market, the Client group was keen to engage with both public and private sectors stakeholders. The approach to engagement was agreed, with that to be targeted across the public and private sectors and to include local authorities, commercial property agents, developers and planning and property consultants.
- 5.2 Twenty four local authorities within the Study area were invited to attend a meeting with the consultants in March 2019. This included a presentation to confirm the scope and objectives of the Study, and any emerging findings. Consultees were encouraged to provide feedback on the Study approach, and to confirm the availability of allocated or committed employment sites with a remaining capacity of 25 hectares or more that had been identified through the Stage 1 baseline research (see Section 6.0). Comments were also welcomed on the approach to identifying new sites and in relation to sector specific growth areas. To further inform the Study and to ensure a breadth of views were captured, the consultant team made a similar presentation on the scope and purpose of the Study to the planning sub-groups of the three Local Enterprise Partnerships and to Staffordshire County Council.
- 5.3 The Client group concluded also that the Study would benefit from the views and contributions of private sector stakeholders active in the employment land market. Again, the focus of engagement was to be on explaining the scope and objectives of the Study and to draw on their market intelligence in relation to the current and future supply of, and demand for, strategic employment land within the Study Area. Engagement would also provide an opportunity to hear stakeholders' views on the proposed Study outputs. To facilitate this, stakeholders were invited to a presentation which was held on 19 March 2019 and which was attended by approximately fifty industrial developers, landowners, agents and planning consultants.
- 5.4 As part of the process, and following the presentation, stakeholders were invited to submit details of their particular land interests, and to make any other representations on the Study's purpose, scope and outputs. In response, the consultant team received within the deadline provided details of 31 sites of 25 hectares or more that stakeholders were promoting for employment, or were considering promoting for employment development. For the avoidance of doubt, any site details that were provided were treated in strict confidence and an assurance given that their specific locations or promotional names would not be referred to in the Study. Stakeholders were later asked whether they would have any objection to their interests being referred to specifically. A majority confirmed that they would have no objection, although some asked that they remain confidential.
- 5.5 The principal points arising from the public sector and private sector engagement are summarised below.

Local Authorities

- 5.6 The key purpose of engaging with local authorities was to obtain a thorough understanding of the then current, and future, capacity of strategic employment sites within each local authority area, and to gain feedback on how the local authorities envisage strategic employment demand being addressed. It was encouraging that all twenty four authorities fully engaged with the process. We also engaged with Shropshire Council so as to understand cross boundary issues that had emerged around key strategic employment locations.
- 5.7 The key messages that came out of the discussions with Local Authority officers are summarised below.

Local Authority Insight

- 5.8 Several Local Authorities are of the opinion that there are no suitable sites within their boundaries that could support a Strategic Employment Site of 25ha or larger. Other Local Authorities saw the potential for delivering a Strategic Employment Site, and recognised the significant economic and social benefits that would bring.
- 5.9 The Metropolitan and more 'urban' Local Authorities saw limited or no potential to deliver strategic employment sites within their administrative areas, whereas the rural and Shire authorities saw greater potential for larger sites to be delivered, dependant on the sustainability of the site(s). It was recognised that the delivery of such sites in the Black Country may require public sector intervention to support the assembly and redevelopment of underutilised industrial, brownfield land.
- 5.10 The uncertainty over the delivery of the West Midlands Interchange was raised as a concern for some Local Authorities in the north of region. A decision on the Development Consent Order was at the time awaited, but that has now been confirmed.
- 5.11 Some concern was raised in relation to an over-dependence on delivering B8 Storage and Distribution sites, and the risk of limited job creation from such development given their low worker densities, extensive levels of automation and manufacturing efficiency. Concerns were also raised by some officers about the pressures for larger developable sites to be brought forward for residential use, instead of for employment development (for example, the Rugeley Power Station site).
- 5.12 When asked about locations for development allied to growth sectors, a number of Local Authorities confirmed that they have identified existing or potential locations which would be the focus for regionally important growth sectors which do not require sites as large as 25ha. This was recognised at the outset by the consultants and further work will be needed on this issue.
- 5.13 High quality transport infrastructure (whether existing, planned or proposed) was highlighted as being central to the successful delivery of Strategic Employment Sites. Good access to a motorway junction, or to the trunk road network, was seen as critical to the successful delivery of such sites, as to a lesser extent was proximity to public transport routes. Passenger rail links were highlighted by several Local Authorities as being of principal importance in terms of accessibility, with bus access being secondary. Local Authorities highlighted also the potential for strategic highway improvements to unlock future development land, which at present is constrained by poor access. Such improvements may include the following:-
- M54 / M6 link road;
 - New motorway junction on the M6 at Corley Services;
 - New motorway junction on the M42 at Catherine-de-Barnes; and
 - M42 Western Orbital (no confirmation at this stage that this scheme will come forward).
- 5.14 Conversely, problems with capacity on the existing Strategic Road Network (for example Junction 3 of the M6) could be a barrier to bringing sites forward so that long-term improvement works may be required in several locations. Highways England's input into bringing such schemes forward will be crucial.
- 5.15 HS2 and related infrastructure improvements were considered to be potential catalysts for further employment land release and delivery.
- 5.16 In terms of barriers to bringing sites forward, many Local Authorities are constrained by substantial parts of their administrative areas being located within the Green Belt. It was acknowledged that a Green Belt review would be

required to evaluate the potential to remove land from the Green Belt to meet identified needs, and to support decisions over the most appropriate locations for doing so. Some Local Authorities felt that the search for potential locations for Strategic Employment Sites should include a hierarchical approach and a preference for non-Green Belt sites first, so as to test fully the potential to identify locations outside the Green Belt which would be capable of accommodating strategic employment development requirements. Whilst this point is understood, this Study has taken a 'policy off' approach to its consideration of locations that are the most deliverable, irrespective of Green Belt designations, and having regard instead to a range of assessment criteria.

- 5.17 Land ownership was raised as a key consideration when planning for the delivery of Strategic Employment Sites. Where a Local Authority is the landowner, they would largely have control over the delivery of the site, but there are likely to be very few 'new' employment sites where this is the case.
- 5.18 In relation to the aims and objectives of this Study, it was highlighted that the Study should ensure a balanced growth approach and that it should consider the regional profile and opportunities within adjacent boundaries.
- 5.19 Concern was raised that the Study might identify potential sites that have not been identified previously within emerging development plans. Whilst this may be the case, the identification of appropriate locations and sites is one of the required outputs of the Study, having regard to its terms of reference, and noting that it is explicitly not the purpose of this Study to allocate sites, or to prejudge or prejudice the preparation and examination of local plans. Any Strategic Employment Site will need to be assessed through the local plan making process and, in this regard, it will be essential that site promoters engage with Local Authorities.

Market Response

- 5.20 The following records the principal points that were raised by private sector stakeholders (including landowners, developers, agents and property consultants) both at the presentation on 19 March and subsequently in their written submissions.
- a) Acknowledged Shortfall:** there was a general consensus (or at least perception) that the availability and choice of existing and new space under construction is at a very low level, and that there needs to be collective political will to address the limited supply of Strategic Employment Sites going forward. Furthermore, the inventory of available and consented employment land has reduced.
- b) Robust Evidence Base:** it was generally felt that the Study's supply-led scope is too narrow, which will impact on the extent to which it may be relied upon as part of the evidence for plan making. In this regard, the following points were raised.
- *Calculation of shortfall* - the forecasting of market dynamics through an econometric demand assessment is not part of the scope of this Study. Notwithstanding this, it was suggested by a majority of those expressing a view on this matter that an econometric demand forecast would enable the shortfall to be quantified. Whilst stakeholder engagement preceded the coronavirus pandemic, this further emphasises the need for additional evidence relating to the shortfall in all sectors and particularly logistics.
 - *Demand* - the industry confirmed our view that demand is significant and, in order to meet the pace of change in manufacturing and logistics, a follow on Study of modern business requirements would add value to the Study.
- c) Definition of Strategic Employment Land:** the definition to be used within the Study was generally supported, but with the following qualifications.

- A 25 ha threshold may render some sites potentially unable to deliver anything of scale. This is recognised, although the Study adopts this site area as a minimum, with many sites being significantly larger.
- There will be a need to distinguish between those sites that may accommodate 'strategic' and 'local' level needs, which will be addressed by local authorities in their plan making activities.

- d) **Public Sector 'Buy-in':** the support of the Public Sector partners to the report's findings was highlighted as being of particular importance and it was suggested that a 'Statement of Common Ground' or similar, be endorsed by the LEPs/ LPAs, might be considered.
- e) **Site Assessment:** the Study's 'policy off' approach to the consideration of appropriate locations for Strategic Employment Sites was welcomed, given the likelihood that a substantial number of sites would be located within the Green Belt.
- f) **Statutory Consultation:** it was suggested that input from statutory consultees (and, in particular, Highways England) would be of considerable benefit to the Study's conclusions. This is accepted although was not part of the Study brief.
- g) **Enabling Development:** it was recognised that the Study provides an opportunity to capture the excitement of the manufacturing and logistics sector and position it as the 'enabling sector'.
- h) **Study Outputs:** the Study's presentation of the outputs at a 'broad location' level was generally favoured, and preferred over the alternative 'site specific' approach. Site specific conclusions might be seen as pre-determining the appropriate testing and assessment of the individual and relative merits of sites through the Local Plan process, and to the full consideration of their potential environmental impacts, infrastructure requirements, and performance in relation to sustainability principles.
- i) **A New Spatial Framework:** given the policy vacuum that exists following the revocation of Regional Spatial Strategies, it was felt that a recommendation in relation to a new spatial framework is needed, to advocate a policy mechanism to address the current and any future shortage of strategic employment land. A two tiered approach was suggested which would differentiate between sites of 25+ ha for strategic employment needs, and sites for 'local' needs. These matters will need to be considered in the light of the eventual outcomes of the government's proposals for planning reform set out in the August 2020 White Paper, 'Planning for the Future'.

5.21 In summary stakeholders welcomed the preparation of the Study, and viewed it as having potential to provide an important contribution to the evidence base that would inform future development plan reviews across the Study area. It will also felt that the Study should set the agenda for further work required to advance the debate, and that it should make recommendations on the scope of that future work.

6. Identifying Strategic Employment Sites

6.1 There is no established or prescribed approach to the identification of land to meet strategic employment needs, and no regulated mechanism for doing so on either a regional or sub-regional basis, following the revocation of Regional Spatial Strategies. The July 2019 update to the Planning Policy Guidance (PPG) (paragraph 31) does provide some advice on how local planning authorities should assess need and allocate space for logistics, as follows.

“How can authorities assess need and allocate space for logistics?”

The logistics industry plays a critical role in enabling an efficient, sustainable and effective supply of goods for consumers and businesses, as well as contributing to local employment opportunities, and has distinct locational requirements that need to be considered in formulating planning policies (separately from those relating to general industrial land).

Strategic facilities serving national or regional markets are likely to require significant amounts of land, good access to strategic transport networks, sufficient power capacity and access to appropriately skilled local labour. Where a need for such facilities may exist, strategic policy-making authorities should collaborate with other authorities, infrastructure providers and other interests to identify the scale of need across the relevant market areas. This can be informed by:

- *engagement with logistics developers and occupiers to understand the changing nature of requirements in terms of the type, size and location of facilities, including the impact of new and emerging technologies;*
- *analysis of market signals, including trends in take up and the availability of logistics land and floorspace across the relevant market geographies;*
- *analysis of economic forecasts to identify potential changes in demand and anticipated growth in sectors likely to occupy logistics facilities, or which require support from the sector; and*
- *engagement with Local Enterprise Partnerships and review of their plans and strategies, including economic priorities within Local Industrial Strategies.*

Strategic policy-making authorities will then need to consider the most appropriate locations for meeting these identified needs (whether through the expansion of existing sites or development of new ones).

Authorities will also need to assess the extent to which land and policy support is required for other forms of logistics requirements, including the needs of SMEs and of ‘last mile’ facilities serving local markets. A range of up-to-date evidence may have to be considered in establishing the appropriate amount, type and location of provision, including market signals, anticipated changes in the local population and the housing stock as well as the local business base and infrastructure availability”.

Source: Planning Policy Guidance, 2019 , Paragraph: 031 Reference ID: 2a-031-20190722

6.2 Whilst it is recognised that this Study has a wider remit than logistics, government policy is clear about the need to identify strategic land in appropriate locations. The PPG goes on to say (paragraph 32) the following in relation to how the specific locational requirements of specialist or new sectors can be addressed.

“When assessing what land and policy support may be needed for different employment uses, it will be important to understand whether there are specific requirements in the local market which affect the types of land or

premises needed. Clustering of certain industries (such as some high tech, engineering, digital, creative and logistics activities) can play an important role in supporting collaboration, innovation, productivity, and sustainability, as well as in driving the economic prospects of the areas in which they locate. Strategic policy-making authorities will need to develop a clear understanding of such needs and how they might be addressed taking account of relevant evidence and policy within Local Industrial Strategies. For example, this might include the need for greater studio capacity, co-working spaces or research facilities.

These needs are often more qualitative in nature and will have to be informed by engagement with businesses and occupiers within relevant sectors”.

Source: Planning Policy Guidance, 2019 , Paragraph: 032 Reference ID: 2a-032-20190722

6.3 In order to reach conclusions on potential employment land capacity and supply we have undertaken a two-step process which comprises an assessment of:-

- allocated employment sites; and
- industry promoted sites.

Allocated and Committed employment sites

6.4 The initial assessment included a comprehensive audit of adopted and emerging evidence base documents for the 24 local authorities situated within the Study area. This included a review of each local authority's Development Plan and ELR to identify allocated employment sites meeting the definition of 'strategic' adopted within this Study (i.e. sites with a remaining area of 25 ha or more).

6.5 A comprehensive list of existing employment sites was developed and refined following discussions with local authority officers, and from an analysis of local authority Annual Monitoring Reports, which identified all allocated and committed employment sites which have a total or remaining site area of 25 ha.

6.6 This initially identified a total of 664 sites which met the key 25+ ha criterion. This included all employment allocations in the 24 local authority areas, many of which were confirmed, following further analysis, to have been largely been built out (i.e. the long list included numerous industrial estates and mixed use employment locations such as the NEC). In accordance with the agreed terms of reference of this Study, we refined the list to include only those sites with a remaining site area of 25 ha.

6.7 Some commentators have noted that certain sites have been allocated for a considerable length of time such that there may be doubt as to their deliverability, and whether they may genuinely contribute to supply. Whilst this is noted, it is not the purpose of this Study to determine whether allocated sites will or will not come forward. It may be appropriate to carry out a critical review of allocated sites following on from this Study, but it is for the plan-making authorities, in consultation with promoters, to reach conclusions on the merits of the retention or de/re-allocation of individual sites.

6.8 In a similar vein, some commentators have noted that the net developable area of the allocated sites may be materially less than the gross areas identified as the criteria for defining strategic sites. Again, an assessment of the net developable area of each site is not within the remit of this Study, but it is acknowledged that site conditions may have a substantial effect on gross/net ratios.

- 6.9 The refined list included only 12 sites. We have since added the West Midlands Interchange (WMI) site at M6 J12 which now benefits from a Development Consent Order (DCO). Table 6.1 provides a summary of 'strategic employment sites' (according to the definition adopted) for each local authority area.

Table 6.1 – Allocated Strategic Employment Sites by Local Authority Area (Avison Young 2019)

Local Authority	No of Sites	Remaining Area (ha)
Birmingham City Council (<i>Peddimore</i>)	1	71
Coventry City Council (<i>Land at Baginton Fields</i>)	1	25
Newcastle Under Lyme (<i>Chatterley Valley Phase 2</i>)	1	38
North Warwickshire Borough Council (<i>Land to south of MIRA Technology Park</i>)	1	42
Nuneaton and Bedworth Borough Council (<i>Fautlands 26 ha & Bowling Green Lane 26 ha</i>)	2	52
Rugby Borough Council (<i>South West Rugby SUE/Symmetry Park</i>)	1	35
South Staffordshire District Council (<i>Royal Ordnance Factory and i54 western extension</i>)	2	76
Staffordshire Moorlands (<i>Blythe Bridge RIS</i>)	1	45
Stratford Upon Avon (<i>Gaydon/Lighthorne Heath</i>) *	1	100
Warwick District Council (<i>Coventry & Warwickshire Gateway</i>)	1	110
West Midlands Interchange	1	247
Total	13	841
Total (minus discounted site) *	12	741

* discounted from total supply as this reflects land "safeguarded" for JLR expansion and which is not currently available on the open market.

- 6.10 Adopting the agreed assumption (for the purpose of this Study) that a site of 25 hectares might support approximately 100,000 sqm of B-Class development, the potential floorspace capacity of the allocated sites identified in Table 6.1 is circa 2.96 million sqm. This should be treated with appropriate caution, having regard to the matters noted at paragraphs 6.8 and 6.9 above. It should also acknowledge the specific nature of the substantial commitment that now exists through the DCO for the WMI.
- 6.11 The analysis in Section 4.0 indicates an average take up of new, Grade A floorspace in the West Midlands area (as defined for the purpose of the analysis in Section 4) of approximately 0.4 million sqm per annum over the period 2015-2018. Based on evidence of past trends in relation to take-up, and assuming that no additional strategic employment sites are brought forward to replace those listed in Table 6.1, the current supply of allocated and committed employment land would appear to represent 7.41 years supply (or less having regard to the matters set out above). This should again acknowledge that a considerable proportion of this supply (2.47 years) comprises the WMI Strategic Freight DCO.
- 6.12 This Study has not considered future demand, and that analysis will be needed to robustly quantify the potential scale of the demand for strategic employment land. But on the basis of the 'past trends' approach based on completions 2015-18 that has been adopted it is clear, as was the case in 2015, that there is a very limited supply of available, allocated and/or committed sites across the Study Area that meet the definition of 'strategic

employment sites', and an urgent need for additional sites to be brought forward to provide a deliverable pipeline, noting the very substantial lead-in times for promoting and bringing forward such sites.

Available Floorspace

- 6.13 In addition to allocated and committed employment sites, there is some limited supply in available Grade A floorspace. As at the end of Q3 2019 that comprised only circa 0.14 million sqm (1.5 million sqft) in the West Midlands, equating to less than one year's supply.

Industry Promoted Sites

- 6.14 We noted in Section 5.0 that, as part of the engagement process, stakeholders were invited to submit to the consultant team details of their particular land interests. The consultant team received details of 31 sites of 25 hectares or more that stakeholders were promoting for employment, or were considering promoting for employment development. One of these was the WMI at M6 J12 which is now subject to a DCO and so has moved from this category into the 'Allocated and Committed' category. The amount, type and quality of evidence and information provided by promoters in relation to their sites varied considerably.
- 6.15 It is possible that some landowners, developers and agents chose not to provide details of their sites to the consultant team. Moreover, whilst the list of invitees was broad, having been compiled on the basis of our knowledge of developers, promoters and agents who are active in this sector, it is possible that the list was not entirely comprehensive at the time that it was promoted, and equally now. Consequently, we cannot be certain that the 31 sites of 25 ha or greater that were put forward represent the full extent of land that is now being, or will be, promoted for employment development in the West Midlands. Moreover, some sites of less than 25 ha were put forward but were discounted on the basis of a strict area cut-off. Similarly, sites put forward after the deadline were not included.
- 6.16 The sites that were put forward are listed in Table 6.2. Where promoters asked that details be kept private, sites are referred to as 'confidential' and with only site area, and the local authority within which they are located, disclosed.

Table 6.2 – Industry Promoted Sites (Source: Avison Young 2019)

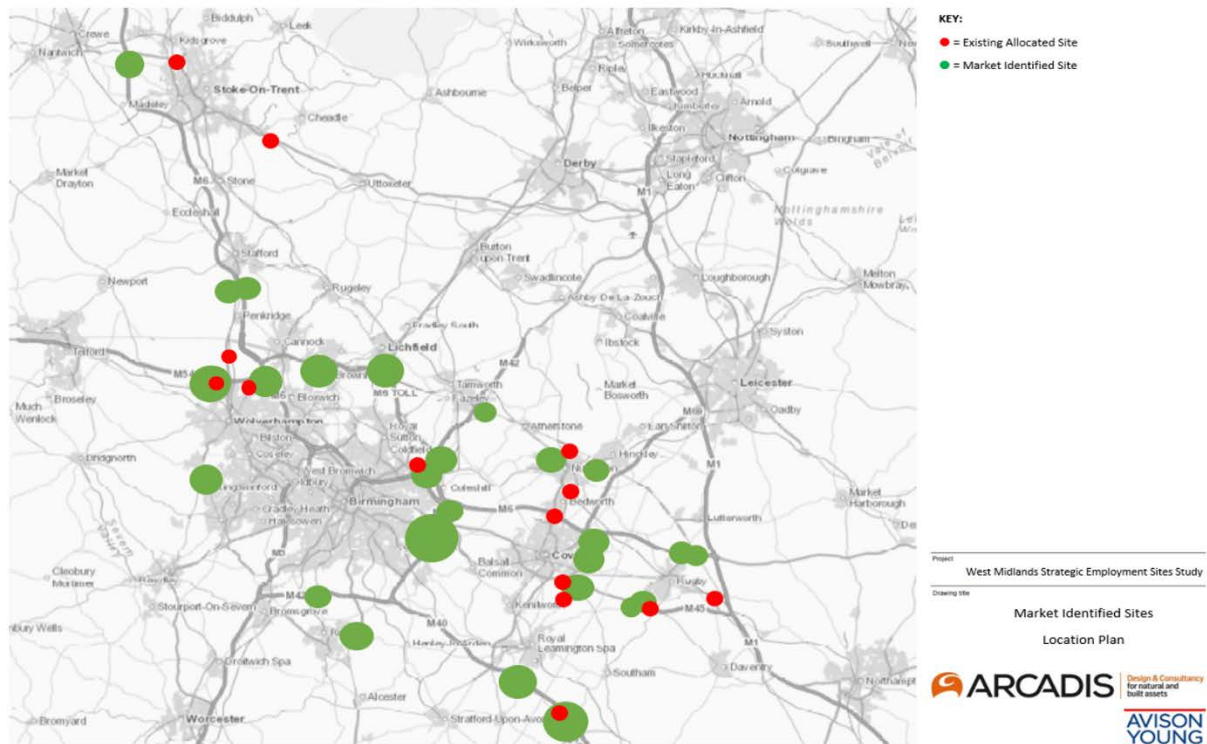
Site Name/Location	Site Area (Ha)	Local Authority
1. Corridor 42 Business Park, J10, M42	73	North Warwickshire
2. Land at J13, M6	60	South Staffordshire
3. Birmingham International Gateway, J9, M42	129	North Warwickshire
4. Confidential	25	North Warwickshire
5. Solihull Gateway, J5/6, M42	283	Solihull
6. Hilton Park, J11, M6	89	South Staffordshire
7. Confidential	127	Lichfield
8. Land at Great Coton, J1, M6	67 ¹	Rugby
9. Land at Walsgrave J2, M6	61	Rugby
10. Confidential	45	South Staffordshire

¹ Masterplan since submitted by the agents for this site includes 29ha on employment land, a reduction on the figure previously provided for this study but still above the 25ha threshold

11. Land at Hinckley, A5	58	Rugby
12. Confidential	100	Warwick
13. Land at Gaydon, J12, M40	100	Stratford
14. Confidential	36	Bromsgrove
15. Land at Brandon lane, Toll Bar End A45/46	27	Rugby
16. Confidential	26	Bromsgrove
17. Land at Brickhill Farm/Stonebridge Road, J4, M6	70	North Warwickshire
18. Confidential	25	Cannock Chase
19. Confidential	51	Rugby
20. Land at Acanthus Road, A435	43	Redditch
21. Confidential	43	Warwick
22. Land at J16, M6	70	Newcastle under Lyme
23. Land at Curdworth, J9, M42	28	North Warwickshire
24. Confidential	100	Birmingham
25. Land at Ryton-on-Dunsmore, A45	50	Rugby
26. Confidential	92	North Warwickshire
27. Land north and east of Ansty Park, J2, M6	57	Rugby
28. Land at Hartshill Quarry	77	North Warwickshire
29. Confidential	300	South Staffordshire
30. Confidential	58	South Staffordshire
TOTAL	2,370	

- 6.17 At the 'headline' level, the 30 sites represent a combined area of circa 2,370 ha. Applying the consistent assumption that 25ha of land may support 100,000 sqm of floorspace, this could equate to a site capacity of circa 9.48 million sqm of potential floorspace. Based on average take up of circa 0.4 million sqm p.a. in the West Midlands area (which equates broadly with the Study Area), this would provide a further 23.7 years of potential capacity/supply.
- 6.18 This outcome would require that all the sites in Table 6.2 would ultimately be confirmed as allocations in the relevant development plan(s). We have said already that this may not be a realistic conclusion. Moreover, the 'headline' conclusion has no temporal dimension and makes no allowance for the time that it may take to secure such allocations, and to then bring those forward through the planning application process, and to deliver any necessary supporting infrastructure. For these reasons, it is not sensible to conclude that all (or any) of the identified sites will contribute to supply in the short to medium term. That is not to suggest that none of the sites have merit or are capable of allocation, but those conclusions will be borne out of ongoing and future plan-making processes.
- 6.19 Figure 6.1 shows the location of sites that are being actively promoted by the market.

Figure 6.1 – Sites promoted by the industry and allocated sites (Source: Avison Young 2019)



High Level Site Assessment

- 6.20 The sites listed in Table 6.2 are at various stages of promotion through development plan reviews. Some have not yet been promoted to any formal stage of consultation whereas others have been the subject of representations to the local planning authorities involved. Some promoters have undertaken significant due diligence and have prepared substantial evidence to support the promotion and consideration of their sites, whereas others are not yet at that stage and have produced and/or provided less.
- 6.21 It was agreed that it is not within the scope of this Study to carry out a detailed review and assessment of the evidence and representations prepared in support of the promotion of these employment opportunities. It was agreed also that it is not within the scope of this Study to prepare or supplement such evidence for any sites put forward, or to advise on the viability of sites, given that their promoters already have a clear and informed view of individual site deliverability. Nor, importantly, should the findings of this Study prevent, or in any way prejudice, the thorough and objective assessment of the planning and other merits of sites through the statutory planning process, and through the examination of development plans in the Study Area.
- 6.22 At the same time, the Client group wished to subject the industry promoted sites to some level of assessment and evaluation, applying consistent criteria and consistent judgments to each site. It was agreed that this assessment should be 'high level', and that it should be based on a series of criteria that reflect key site opportunities and constraints. For the avoidance of doubt the assessment has drawn in its entirety upon widely available data sets, mapping software and local authority development plan documents.

- 6.23 The Client group agreed that the following basket of criteria would be used to support a high level assessment all industry promoted sites of 25+ ha.
- a) **Motorway/Trunk Road Access:** with a site's proximity to a motorway junction, or other strategic highways network route, being a key criterion adopted by site promoters and developers.
 - b) **Local Plan Allocations:** including whether the site is identified within a development plan for any alternative use, including housing.
 - c) **Statutory Designations:** with a focus on whether a site is substantively affected, in part or in whole, by any statutory designation that may be a significant constraint to development.
 - d) **Public Transport:** with proximity to an existing passenger rail station (800m) or a bus stop served by a regular bus service(400m) being an advantage.
 - e) **Flood Risk:** and whether a site falls wholly or partially within an area identified as Flood Zone 3 on the Environment Agency's Flood Map for Planning, or on any Strategic Flood Risk Assessment.
 - f) **Ground conditions:** including whether the site is greenfield land or is previously development, and whether it may contain any constraint such as an identified historic landfill.
 - g) **Ecology:** and whether the site affected, in part or whole, by a statutory or non-statutory ecological designation that may represent a significant constraint to development.
 - h) **Topography:** whether the site is predominately flat or there are significant level changes that may be a constraint to efficient development and may limit net developable area.
 - i) **Proximity to existing settlements:** proximity of the site to a town / urban area, or main village (e.g. local service centre as designated in a local plan).
 - j) **Air Quality:** whether the site falls within a designated air quality monitoring area.
- 6.24 It should be noted that a site's location in or outside the green belt has not been considered or scored, on the basis that it was agreed that the Study should be 'policy off' in this regard.
- 6.25 Each site has been scored against a numerical scale applicable to each assessment criterion. Those numerical scales differ. For example, access to the Motorway/trunk road network attracts a score of 1-5 whereas other criteria are scored from 1-2, 3 or 4. For the avoidance of doubt, a lower score indicates the best fit with the identified assessment criteria. The lowest score that may be achieved would be 10, which would indicate the best possible performance against the assessment criteria. The highest possible score (or worst performance against the agreed criteria) would be 24.
- 6.26 It was agreed also that no weighting would be applied to any of the criteria, and that it was not within the scope of the Study to determine whether any identified constraints could be successfully mitigated without prohibitive cost. Rather, the approach adopted would be 'high level' and factual, with the primary objective being to identify any matters which, of themselves, could rule out a site or location from further consideration, which may have the

effect of limiting potential supply from industry promoted sites. It is accepted that promoters and developers will have assessed such matters themselves.

- 6.27 As noted earlier, there has been no engagement with Highways England in relation to Motorway/trunk road access, so that this criteria reflects only proximity to junctions. It does not make any assumption that highway capacity exists, or may be created without prohibitive cost.
- 6.28 There is no temporal dimension to the assessment so that the timescales associated with promotion through the development plan process, and formal allocation, are not taken into account. There is no reference in the assessment to the stage of review of the relevant local plan, and any implications of that for timescales. An authority that has recently completed a local plan process may not have an appetite for a review to address employment land needs earlier than the 5 year threshold in the NPPF, and may also consider its green belt boundaries to be established for the longer term. Consequently, there will be a substantial variation between sites in relation to the timescales associated with decisions on their allocation. Moreover, the assessment does not factor in the timescales associated with the delivery of any necessary infrastructure.
- 6.29 The high level assessment of industry promoted sites is summarised in Table 6.3 below.

Site Name/Location	Site Area (Ha)	Planning Status	Score
1. Corridor 42 Business Park, J10, M42	73	Promoted for Allocation	11
2. Land at J13, M6	60	Promoted for Allocation	12
3. Birmingham International Gateway, J9, M42	129	Promoted for Allocation	11
4. Confidential	25	Opportunity	11
5. Solihull Gateway, J5/6, M42	283	Promoted for Allocation	12
6. Hilton Park, J11, M6	89	Promoted for Allocation	12
7. Confidential	127	Opportunity	12
8. Land at Great Coton, J1, M6	67	Promoted for Allocation	13
9. Land at Walsgrave J2, M6	61	Opportunity	12
10. Confidential	45	Promoted for Allocation	13
11. Land at Hinckley, A5	58	Opportunity	16
12. Confidential	100	Opportunity	13
13. Land at Gaydon, J12, M40	100	Opportunity	14
14. Confidential	36	Opportunity	13
15. Land at Brandon lane, Toll Bar End A45/46	27	Promoted for Allocation	15
16. Confidential	26	Opportunity	13
17. Land at Brickhill Farm/Stonebridge Road, J4, M6	70	Promoted for Allocation	14
18. Confidential	25	Opportunity	15
19. Confidential	51	Opportunity	15
20. Land at Acanthus Road, A435	43	Promoted for Allocation	14
21. Confidential	43	Opportunity	17
22. Land at J16, M6	70	Promoted for Allocation	15
23. Land at Curdworth, J9, M42	28	Opportunity	15
24. Confidential	100	Opportunity	18
25. Land at Ryton-on-Dunsmore, A45	50	Opportunity	17
26. Confidential	92	Opportunity	16
27. Land north and east of Ansty Park, J2, M6	57	Promoted for Allocation	18

28. Land at Hartshill Quarry	77	Opportunity	19
29. Confidential	300	Opportunity	19
30. Confidential	58	Opportunity	15

- 6.30 It is notable that most sites that are being 'promoted for allocation' score well against most of the assessment criteria, with many being close to the lower end of the range of 10-24. It is notable also that most score similarly and within a fairly narrow range. Unsurprisingly, few are constrained in relation to local plan allocations, topography, statutory designations or ground conditions. Also unsurprisingly, given that the market will place a high priority on sites with excellent accessibility from the strategic highway network, few perform well in relation to proximity to public transport. Fundamentally, none of the sites have scored poorly. We emphasise also that this assessment is high level and is not intended to influence the detailed and ongoing assessment of the suitability and deliverability of these site through the Local Plan process.
- 6.31 It is recognised that this assessment will be open to differing interpretations having regard to the acknowledged 'high level' nature of the criteria adopted and, consequently, to its findings, and whether any weighting should be applied to any or all of the criteria. However, the purpose of the assessment was to check for any clear and obvious constraints that might affect the suitability of sites to the extent that it would be prudent to assume that none of the industry promoted sites will, in due course, add to the pipeline of Strategic Employment Sites in the Study Area. Notwithstanding the limitations of the high level assessment carried out, no site scored so poorly that it would be reasonable to assume that the industry promoted sites will not, in due course, contribute to the supply of Strategic Employment Sites. The extent to which they may contribute will depend on (i) the evaluation of their suitability through statutory development plan processes; and (ii) whether the local planning authorities acknowledge the need to identify and allocate such sites in their development plans. But for these reasons, the supply that may derive from the industry promoted sites must be treated with caution (or, rather, should not be taken as guaranteed).

Sites at Motorway Junctions

- 6.32 It is our view that Strategic Employment Sites are best delivered in locations that are accessible to the strategic highway network, with sites located close to motorway junctions being prioritised by developers and occupiers. With this in mind we have undertaken a high level review of land adjacent to all motorway junctions within the Study area to identify areas that may be able to accommodate strategic employment sites of 25+ ha.
- 6.33 We have considered both new sites and potential extensions to existing employment/business parks. We have focused on agricultural/greenfield land, and excluded developed, occupied sites, urban areas and golf courses. Site areas were determined in broad terms following obvious boundaries such as roads, railways or field boundaries. This search concludes that 20 motorway junctions within the Study Area have the potential to support employment development on sites of 25+ ha and with a total area of circa 1,119 hectares (see Table 6.3 and Figure 6.2). For the avoidance of doubt and to avoid duplication, where there was overlap, these sites exclude the 31 sites shared with us by the market and the 12 allocated sites previously discussed.
- 6.34 Applying again the assumption that 25ha of land may support circa 100,000 sqm of floorspace, would suggest that this land could support a considerable amount of floorspace. Given that these sites have no planning status, and that they are not currently being promoted for development, they do not form any part of our consideration of supply. The sites are mapped and listed below.

Figure 6.2 – Allocated Sites and Sites at Motorway Junctions (Source: Avison Young 2019)

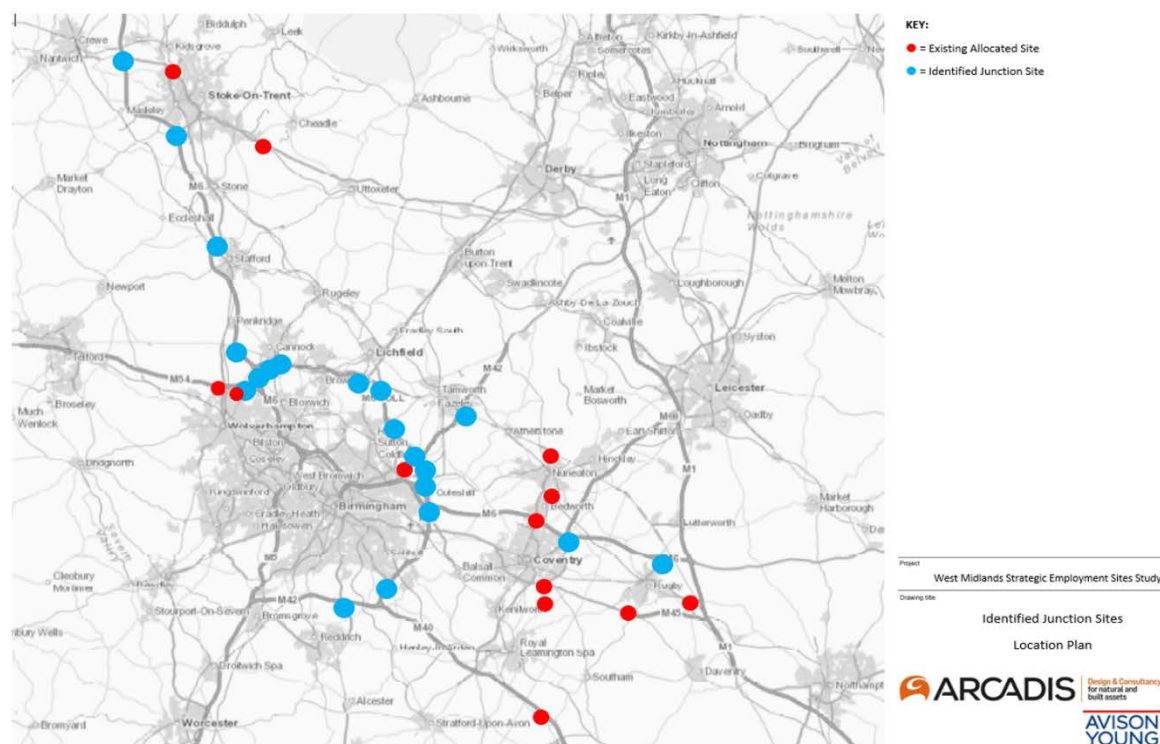


Table 6.4 – Sites at Motorway Junctions (Source: Avison Young 2019)

No	Junction	Site Location	Size (ha)	Local Authority
1	M6 J1	Land south of M6, east and west of A426	81	Rugby
2	M6 J2	Land north of M6, east and west of M69/B4065	122	Rugby
3	M6 J4	Land south of M6, east and west of A446	58	North Warwickshire
4	M6 J11	Land east of M6	58	South Staffordshire
5	M6 J12	Land west of M6, north of A5	43	South Staffordshire
6	M6 J14	Land east of M6, west of A34	33	Stafford
7	M6 J15	Land west of M6, north of A5182	35	Newcastle under Lyme
8	M6 J16	Land east of M6, north of A500	30	Newcastle under Lyme
9	M54 J1	Land north of M54, east of A460	28	South Staffordshire
10	M42 J3	Land north of M42, east and west of A435	55	Bromsgrove/Stratford
11	M42 J4	Land west of M42	79	Solihull
12	M42 J8	Land east and west of M42	33	North Warwickshire
13	M42 J9	Land east of M42, west of A4097	28	North Warwickshire
14	M42 J10	Land east of M42, south of A5	81	North Warwickshire
15	M6 Toll T1/2	Land east and west of M6 Toll	98	North Warwickshire
16	M6 Toll T3	Land east of M6 Toll, west of A38	30	North Warwickshire
17	M6 Toll T4	Land east and west of M6 Toll	102	Lichfield
18	M6 Toll T5	Land east M6 Toll, east A38 and north M5	56	Lichfield
19	M6 Toll T7	Land north of M6 Toll, east of A460	30	Cannock Chase
20	M6 Toll T8	Land north/south of M6 Toll	39	South Staffordshire
		TOTAL	1,119	

- 6.35 Table 6.5 below identifies Motorway junctions that were excluded from the assessment and the reasons for this, which include that they yield no clear opportunities of 25ha or larger, that they are located within developed/urban areas. Others are already the focus of promotional activity.

Table 6.5 – Motorway Junctions Excluded (Source: Avison Young 2019)

No	Junction	Reason for exclusion of land parcels
1	M6 J3	No site of 25 ha or larger, and/or more suited for alternative uses (i.e. residential)
2	M6 J5	No site of 25 ha or larger, and in developed urban area
3	M6 J6	No site of 25 ha or larger, and in developed urban area
4	M6 J7	Poor access via existing residential areas and more suitable for alternative uses i.e. residential
5	M6 J8	No site of 25 ha or larger, and in developed urban area
6	M6 J9	No site of 25 ha or larger, and in developed urban area
7	M6 J10	No site of 25 ha or larger, and in developed urban area
8	M6 J13	Being promoted by the industry and included in that assessment
10	M69 J1	No site of 25 ha or larger
11	M40 J15	No site of 25 ha or larger
12	M40 J16	No site of 25 ha or larger
13	M5 J1	No opportunities as in developed urban area
14	M5 J2	No opportunities as in developed urban area
15	M5 J3	No site of 25 ha or larger
16	M5 J4	No site of 25 ha or larger
17	M5 J5	No site of 25 ha or larger
18	M42 J1	Poor access via existing residential areas and more suitable for alternative uses
19	M42 J2	No site of 25 ha or larger
21	M42 J4	No site of 25 ha or larger
22	M42 J5	Being promoted by the industry and included in that assessment
23	M6 Toll T6	No site of 25 ha or larger

Note: J10 of the M6 and J3a of the M42 were not assessed as they are interchanges with no access to any land parcels.

High Level Assessment

- 6.36 We have carried out the same high level assessment of the Motorway sites that was applied to the industry promoted sites (as per paras 6.17 – 6.24 above). A lower score indicates a better fit with the identified assessment criteria, and the lowest score that may be achieved would be 10. The highest possible score (or worst performance against the agreed criteria) would be 24. The findings of this assessment are summarised in Table 6.6 below.

Table 6.6 – High Level Assessment of Sites at Motorway Junctions (Source: Avison Young 2019)

Site Name/Location	Location	Site Area (Ha)	Score
1. Land south of M6, east and west of A426 as extension to existing site	M6 J1	81	14
2. Land north of M6, east and west of M69/B4065	M6 J2	122	12
3. Land south of M6, east and west of A446	M6 J4	58	16
4. Land east of M6	M6 J11	58	12
5. Land west of M6, north of A5	M6 J12	43	14
6. Land east of M6, west of A449 as extension to existing site	M6 J14	33	15

7. Land west of M6, north of A5182	M6 J15	35	15
8. Land east of M6, north of A500	M6 J16	30	15
9. Land north of M54, east of A460	M54 J1	28	13
10. Land north of M42, east and west of A435	M42 J3	55	15
11. Land west of M42 as extension to existing site	M42 J4	79	17
12. Land east and west of M42	M42 J8	33	14
13. Land east of M42, west of A4097	M42 J9	28	14
14. Land east of M42, south of A5	M42 J10	81	16
15. Land east and west of M6 Toll	M6 Toll T1/2	98	13
16. Land east of M6 Toll, west of A38	M6 Toll T3	30	17
17. Land east and west of M6 Toll	M6 Toll T4	102	15
18. Land east M6 Toll, east A38 and north M5	M6 Toll T5	56	16
19. Land north of M6 Toll, east of A460	M6 Toll T7	30	15
20. Land north/south of M6 Toll	M6 Toll T8	39	17

6.37 The purpose of this assessment has been to evaluate the theoretical capacity to deliver additional sites in the Study area that could meet the definition of 'strategic' adopted for the purpose of this Study, and in locations that are attractive to the market. The assessment is high level and has focused only on identifying any matters that would rule out a broad location from further consideration. It pays no regard to land ownership, is 'policy off', and assumes that infrastructure capacity exists, or is capable of being delivered by the private and/or public sectors. The sites score similarly to the industry promoted sites at this very high level.

Viability

6.38 It is recognised that the development viability of sites is a key factor in determining the deliverability of proposed strategic employment locations / sites.

6.39 It is not within the remit of this Study to advise on the viability/deliverability of allocated sites or those being promoted by the industry. Existing allocated sites have been through the planning process and, as such, matters of viability will have been considered. Similarly, sites that are being promoted by the industry will be assessed for deliverability/viability by their promoters, and will be a key matter in determining whether, and when, they are confirmed as allocations in due course. As noted previously, any technical documentation provided by promoters has not been reviewed as part of this Study. We therefore provide high level advice for the potential strategic employment sites that have been identified at Motorway junctions.

Values

6.40 Given the strategic nature of this Study we advise on the viability of broad locations as opposed to specific sites. Table 6.7 below provides a range of indicative price bands that could be achieved for strategic employment sites located adjacent to motorway junctions. Whilst it is acknowledged that land values reflect market interest, and will be set accordingly, it is recommended that the public sector needs to be prepared to intervene to unlock key sites and has a track record of doing so in this geography (i.e. i54 and Phoenix 10).

Table 6.7 – Indicative Price Bands (Source: Avison Young 2019)

No	Junction	Site Location	Size (ha)	Price Bands (net developable)
1	M6 J1	Land south of M6, east and west of A426	81	£1.61m-£1.85m per hectare (£650-750k per acre)
2	M6 J2	Land north of M6, east and west of M69/B4065	122	
11	M42 J4	Land west of M42	79	
3	M6 J4	Land south of M6, east and west of A446	58	£1.48m-£1.85m per ha (£600-750k per acre)
12	M42 J8	Land east and west of M42	33	£1.48m-£1.61m per ha (£600-650k per acre)
13	M42 J9	Land east of M42, west of A4097	28	
15	M6 Toll T1/2	Land east and west of M6 Toll	98	
14	M42 J10	Land east of M42, south of A5	81	£1.34m-£1.54m per ha (£550-625k per acre)
10	M42 J3	Land north of M42, east and west of A435	55	£1.34m-£1.48m per ha (£550-600k per acre)
16	M6 Toll T3	Land east of M6 Toll, west of A38	30	£865k-£988k per ha (£350-400k per acre)
17	M6 Toll T4	Land east and west of M6 Toll	102	
18	M6 Toll T5	Land east M6 Toll, east A38 and north M5	56	
4	M6 J11	Land east of M6	58	£803k-£926k per ha (£325-375k per acre)
5	M6 J12	Land west of M6, north of A5	43	
9	M54 J1	Land north of M54, east of A460	28	
19	M6 Toll T7	Land north of M6 Toll, east of A460	30	
20	M6 Toll T8	Land north/south of M6 Toll	39	
6	M6 J14	Land east of M6, west of A449	33	£741k-£865k per ha (£300-350k per acre)
7	M6 J15	Land west of M6, north of A5182	35	£618k-£865k per ha (£250-350k per acre)
8	M6 J16	Land east of M6, north of A500	30	

- 6.41 It is clear from this that the prime West Midlands prices for land are just over £1.85 million per net developable ha (£750k per net developable acre). These prices are likely to be achieved along the M6 corridor from J1 Rugby to J3 Coventry, or along the M42 from J6, including the Airport/NEC/future HS2, and J3A.
- 6.42 Certain parties in the prime market are willing to pay higher values, with figures of nearly £2.5 million per developable ha (£1 million per net developable acre) having been achieved. The ranges that we have provided are those that would normally prevail where a detailed assessment is taken which is inclusive of anticipated voids, rent free periods and profit on cost.
- 6.43 Indicative prices fall to circa £1.61m per net developable ha (£650k per net developable acre) for parts of the M42 north of NEC/M6 to the M6 Toll, to £1.54m per net developable ha (£625k per net developable acre) at J10 M42 and to £1.48m per net developable ha (£600k per net developable acre) at M42 south (J3).
- 6.44 There is a noticeable fall away in prices for land alongside the M6 Toll (£988k per developable ha/£400k per net developable acre), the M6 Toll/M54/M6 triangle (£926k per developable ha/£375k per net developable acre), M6 North Stafford and Stoke (£865k per developable ha/£350k per net developable acre).

- 6.45 For clarification these indicative prices are based on a typical 4.05 ha (10 acre) plot for each band of locations, assuming planning consent for open Class B1/B2/B8 uses, with infrastructure and access completed. We have used this as an appropriate basis to provide generic price consistency; otherwise site scale, and site specific matters, would mean that we would not be comparing prices on a like for like basis.
- 6.46 At such a strategic level it is both problematic and risky to comment on gross to net areas, as this will vary from site to site according to site specific matters, and a master planning process, but we would expect this to be typically in the broad range of 80:20 - 60:40 gross to net, and 20,000 sqft per net developable acre, as a typical industry standard. We recognise that opinions will differ on the most appropriate ratio to adopt to convert site area to an assumed floorspace capacity. Notwithstanding this, we have agreed a reasonable assumption for the purpose of this study that a site of 25 hectares might support approximately 100,000 sqm of B-Class development, and have not tested the implications for our conclusions of adopting alternative ratios. It is, of course, open for others to adopt alternative assumptions when reviewing this Study, either on a 'blanket' ratio basis, or according the specific circumstances of each site, which would have implications for both individual and cumulative site capacity and, as a consequence, years of supply. In our view, however, the assumptions that we have adopted are reasonable for the purpose of commenting on the adequacy of supply and the urgency of the need to identify additional supply. Adopting different assumptions would be unlikely to generate any different conclusion.

Development Costs

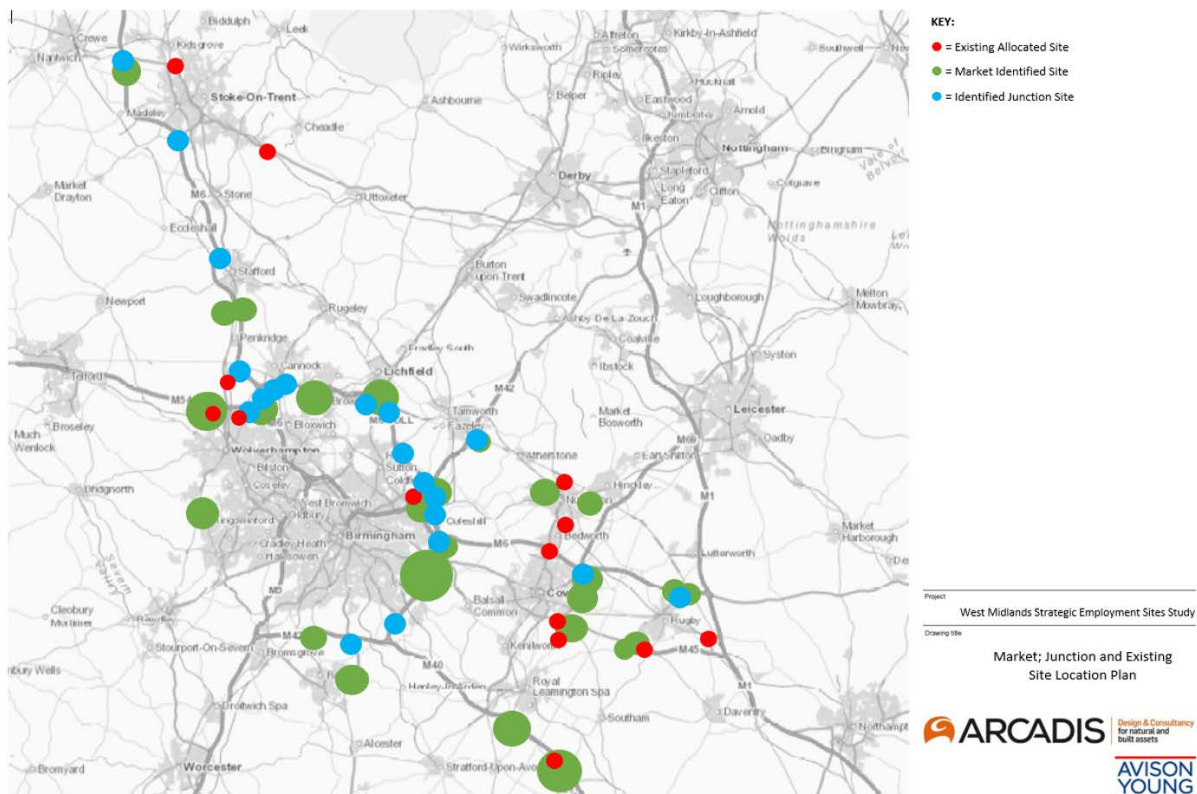
- 6.47 When this Study was originally envisaged it was thought that high level costings could be applied to each site or location, having regard to the key areas of cost risk relating to drainage, topography and ground conditions. However, as the Study progressed it became clear that application of an indicative 'abnormal' cost factor to any sites identified would necessarily have to be based on high level assumptions. Such assumptions would be highly subjective and may unfairly prejudice the future decision-making process relating to the potential allocation of sites.
- 6.48 The issue of whether to seek to apply high level abnormal costing to this Study is a key factor. For this to be meaningful, a properly robust costing exercise should be undertaken as a future stage of assessment when appropriate levels of detail can be obtained and used as a robust foundation for costing information. One of the most pertinent pieces of information required for any site will be clarity on the capacity of the strategic highway network (including Motorway junctions), whether any capacity constraints may be addressed and, if so, at what cost and in what timescale. This would require full engagement with Highways England and local highway authorities.

Identifying Strategic Employment Locations

- 6.49 The West Midlands Strategic Employment Sites Study (2015) identified the following broad locations for Strategic Employment Sites.
- Area A covering the M42 belt east of Birmingham;
 - Area B covering the Coventry, Rugby and Warwickshire areas, excluding the M42 belt;
 - The Black Country and Southern Staffordshire;
 - Stoke on Trent and Northern Staffordshire; and
 - Eastern Staffordshire.

6.50 These areas were, by their nature, broad and in essence covered the entirety of the Study area. This Study reviews those broad locations and provides a current assessment of the potential sites/locations that could provide future supply of strategic employment land, as shown in Figure 6.3 below.

Figure 6.3 – Allocated, Industry Promoted and Motorway Junction



6.51 It is clear from Figure 6.3 that there remains a critical mass of sites in similar locations, and that Areas A (M42 east of Birmingham) and B (Coventry, Rugby, Warwickshire) remain the prime locations for strategic employment sites in the Study Area.

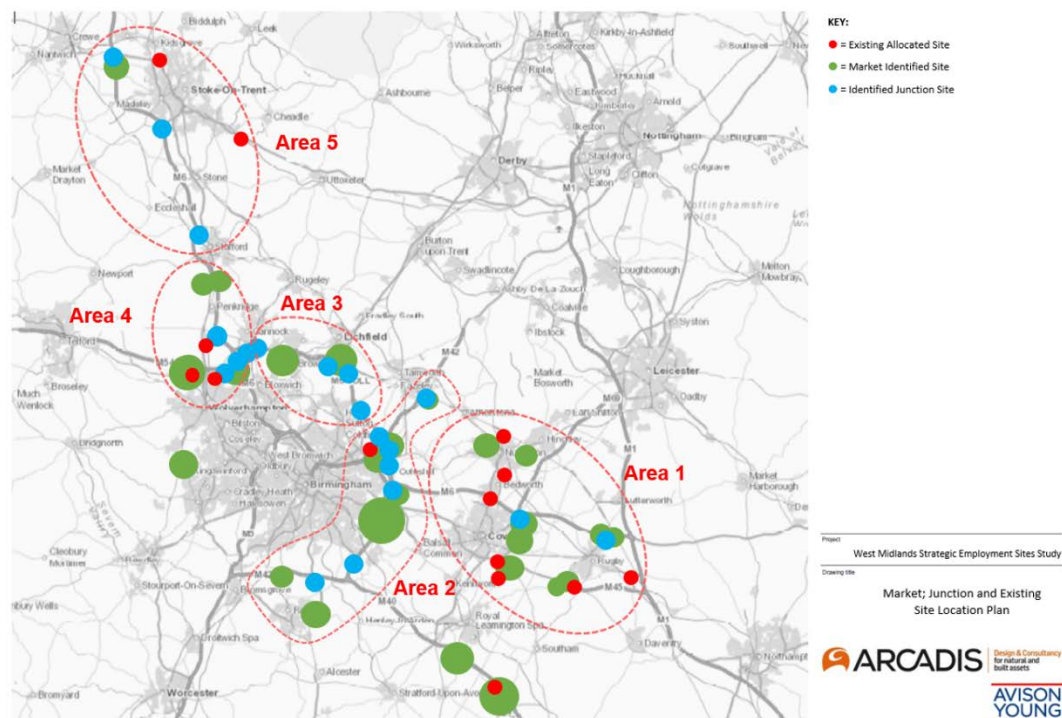
6.52 Based on our analysis of the quantum of supply, market intelligence around areas seeing considerable demand, and those areas achieving the higher land prices, the prime market facing locations for Strategic Employment Sites is to the east of Birmingham in an area that covers a geography from J2 of the M42 in the south, north to J10 of the M42, south west to J14 of the M40 and east to J1 of the M6.

6.53 While this may be true for the Study area as a whole, there is evidence of unmet need within other parts of the Study Area, and for other sectors (i.e. distribution) to the north of the conurbation serving the northern ports. This need could not be met by locations to the east of Birmingham.

6.54 The M54 corridor is likely to have a future role. The M54 Growth Corridor Study (June 2019) is of relevance as this Study recognised the opportunity for a strategic employment site at J3 of the M54 which is on the edge of the Study area, but could meet needs arising from within it, and could contribute to the future supply of strategic employment sites.

- 6.55 Whilst it is recognised that the higher land values and the main area which the market currently wants to locate are to the east of Birmingham it is clear there is market demand in the areas to the north and west of Birmingham and this could be affected through appropriate interventions and recognising local authorities place-shaping role, e.g. green-belt release and public sector investment.
- 6.56 We identify five key clusters of sites as identified on Figure 6.4 below. We recommend that the focus for identifying strategic employment sites should be in four of these clusters, or 'Key Locations'.
- 6.57 We have excluded Area 3, which is focused on the M6 Toll, because the majority of M6 Toll sites are perceived by occupiers as being less attractive given that it is a private road subject to charging for the duration of the concession period. Sites in the vicinity of the junctions of the M6/M54/M6 Toll could provide supply either as extensions to established employment areas or as new employment sites currently being promoted through the planning system.

Figure 6.4 – Market Locations for future Strategic Employment Sites (Source: Avison Young & Arcadis 2019)



- 6.58 A particular matter arising from a review of Figure 6.4 is that it demonstrates that there are no sites on the M5 or M6 corridor within Birmingham and the Black Country. This is to be expected, given the highly constrained nature of this area. Moreover, approximately 70% of the industry led sites are situated in the green belt. These two factors together confirm the need for the supply of strategic scale employment sites to be considered alongside a critical review of the green belt
- 6.59 Table 6.8 summarises total existing (allocated/committed) and potential (industry promoted) supply in Key Locations.

Table 6.8 – Existing and Potential Supply in Key Locations (Source: Avison Young 2019)

	M42 Corridor	M6 East Corridor	M6 Toll	Black Country & South Staffs	Stoke & North Staffs	Years supply	Outside 5 clusters
Allocated/committed Sites	71 ha	264 ha	-	323 ha	83 ha		100 ha
Years supply	0.71	2.64	-	3.23	0.83	7.41	1
Industry Promoted Sites	905 ha	448 ha	152 ha	494 ha	70 ha		301 ha
Years supply	9.05	4.48	1.52	4.94	0.7	20.69	3
TOTAL	976 ha	712 ha	152 ha	817 ha	153 ha		401 ha
Years Supply	9.76	7.12	1.52	8.17	1.53	28.1	

6.60 It is our view that, at a minimum, recent levels of demand are likely to be sustained from a market perspective. This could, however, increase over and above current levels given the attraction of the area as a location for investment and the ambitions of the LEPs to grow the economy and to increase productivity. We have recommended that consideration be given to the specifics over quantum of demand being assessed via an econometric demand forecast. If demand was to double then the total supply, in number of years, indicated in Table 6.8 would halve. Again, this assumes that all industry promoted sites, and additional land at Motorway junctions, would be confirmed as allocations.

6.61 If only allocated sites, were assumed to contribute to supply there would be a maximum of 7.41 years supply at observed levels of demand, and much less if demand were to materially exceed trend-based levels. If only allocated sites, plus all of the industry promoted sites in Key Locations, were assumed to contribute to supply there would be a maximum of 28.1 years supply at recent levels of demand, and 14.05 years if demand was double the recent trend-based levels. We have, however, concluded that it is not realistic to assume that all, or even a significant proportion, of the industry promoted sites will in time be confirmed as allocations. This high-level analysis underlines:-

- the urgent need to identify a pipeline of new Strategic Employment Sites to meet needs beyond the 7.41 years (or less) of supply that exists in allocated and committed sites; and
- the need to consider testing, through econometric forecasting, the level of demand that the sub-region should be seeking to meet and that, whatever that level may be, existing supply must be supplemented in the short term.

Sites targeted at Specific Growth Sectors

6.62 Having regard to the second part of the definition of 'strategic' that has been adopted for this Study (paragraph 1.20, we have identified sites that provide for growth in key target sectors but which are less than 25 ha in size. These sites have been identified through a review of current Strategic Economic Plan (SEP) priorities and known growth target areas, including enterprise zones, employment hubs and education led programmes, and supplemented by our market knowledge. The recognition of these sites further supports the growth of transformational sectors including that of the Combined Authority.

6.63 As a baseline therefore, our research focused on the delivery of growth for the following sector areas:

- Advanced Manufacturing;
- Business, professional and financial services;
- Construction (building technologies);
- Digital and creative;
- Life sciences and social care;
- Logistics and transport technologies; and
- Low carbon and environmental technologies.

6.64 Working alongside the Local Authorities we identified a number of pipeline sector specific sites, to be delivered through infrastructure led programmes with the full list provided in Table 6.9 below:

Table 6.9 – Sector Specific Sites (Source: Avison Young 2019)

Site Name	Site Location	Local Authority
Birmingham Research Park	Birmingham	Birmingham City Council
Longbridge Regional Employment Site	Longbridge, Birmingham	Birmingham City Council
The Food Hub	Former IMI Works, Witton	Birmingham City Council
Life Sciences Campus	Selly Oak	Birmingham City Council
UK Central Hub Innovation District	Arden Cross	Solihull MBC
i54	Valiant Way, Coven, Wolverhampton	City of Wton Council / Staffordshire County Council
University of Warwick Science Park	Warwick Innovation Centre Warwick Technology Park Gallows Hill Warwick CV34 6UW	Coventry City Council
Malvern Hills Science Park	Malvern	Malvern Hills District Council
Keele University Science and Innovation Park	Keele University, Staffordshire	Newcastle-under-Lyme
Chatterley Valley Phase 2	Peacock way, Newcastle Under Lyme	Newcastle-under-Lyme
Ansty	Coventry	Rugby Borough Council
Stafford Gateway	Stafford	Stafford Borough
Wellesbourne Campus	Stratford	Stratford upon Avon Council
Halesfield / EPIC	Epic Park, Halesfield 7, Telford, Shropshire	Telford and Wrekin Council
Stoneleigh Park	Stoneleigh, Kenilworth	Warwick District Council
Warwick Technology Park	Warwick	Warwick District Council

6.65 The sites identified focus upon current growth sectors; life sciences, digital and creative, advanced manufacturing and research and development. These opportunities build upon the existing skills base and training opportunities across the West Midlands, and set the precedent for the direction of globally competitive areas operating from the region.

6.66 This list is a starting point, and further analysis will need to be undertaken around the opportunity provided by these and other sites to contribute to employment growth in key growth sectors. This will need to consider whether there is capacity for locating additional employment under 25 ha focussing on key growth sectors and specific use classes.

6.67 Paragraph 33 of the Planning Policy Guidance (July 2019) provides recommendations on how the specific locational requirements of specialist or new sectors could be addressed. It advises that:

“when assessing what land and policy support may be needed for different employment uses, it will be important to understand whether there are specific requirements in the local market which affect the types of land or premises needed. Clustering of certain industries (such as some high tech, engineering, digital, creative and logistics activities) can play an important role in supporting collaboration, innovation, productivity, and sustainability, as well as in driving the economic prospects of the areas in which they locate. Strategic policy-making authorities will need to develop a clear understanding of such needs and how they might be addressed taking account of relevant evidence and policy within Local Industrial Strategies. For example, this might include the need for greater studio capacity, co-working spaces or research facilities. These needs are often more qualitative in nature and will have to be informed by engagement with businesses and occupiers within relevant sectors”.

6.68 The WMCA SEP (2016) sets out the importance of improving opportunities and creating conditions for growth linked to connectivity and skills. The WMCA has recognised the opportunity to achieve this across the region and to set a quality benchmark for the nation. The priority of this vision is to be delivered through continuing to nurture existing successes and grow accordingly by combining strengths in science, technology, engineering and the arts. Collaboratively, the WMCA vision will create opportunities for demand led innovation, increasing the rate at which new ideas and solutions are generated and translated into economic growth.

6.69 As noted within the Coventry and Warwickshire SEP (August 2016) there is a need to create strong regional offers through collaboration across three key areas; SME’s, talent and culture and tourism. To succeed, the region should prioritise nurturing and combining existing strengths whilst informing WMCA and SEP priorities.

6.70 The Stoke and Staffs SEP (2018) is mindful of how industrial growth can be of benefit, and improving productivity is a key area of focus for the LEP. Stoke-on-Trent and Staffordshire have established two Enterprise Zones which have enabled them to provide a blend of geographical and sectoral offers to the market and these will be promoted. These include the Ceramic Valley Enterprise Zone and the opportunity for advanced manufacturing and professional businesses both linked to and in addition to the offer at i54/JLR.

7. Conclusions

- 7.1 The objectives, scope, aims and expected outcomes of this Study were agreed at the outset, and have been kept under review as the Study has progressed.
- 7.2 A key aim of the Study was to review and provide an update of the West Midlands Strategic Employment Sites Study (2015) which was produced by PBA and JLL on behalf of the West Midlands Local Authority Chief Executives. It includes, therefore, a review of relevant baseline documentation and an overview of the past demand for, and supply of, land and buildings for industrial/logistics and office development in the West Midlands. In accordance with Client requirements, it has been informed by consultation and engagement with all the local authorities, the three Local Enterprise Partnerships, Staffordshire County Council and those engaged in the delivery of employment land.
- 7.3 The demand evidence draws upon market knowledge and a thorough analysis of past trends relating to the take-up of employment land and premises. It does not, however, include an econometric forecast of potential future demand across the Study area, at a sector specific level.
- 7.4 The Study has taken a strategic approach to reviewing and assessing options for locating new strategic employment sites within the Study Area and sub-region. Its findings should underline the need for, and should encourage, local authorities, developers and landowners to work together to develop a deliverable supply and pipeline of 'investor ready' Strategic Employment Sites that are capable of accommodating large scale development (as per the definition of 'strategic' adopted for this Study, which is based on that adopted in the 2015 Study), in addition to meeting more locally based employment needs. In this regard, there is a distinction between local level sites to meet local needs which are to be identified by individual local authorities in their forward planning processes, informed by their ELR's (which are not considered in this Study) and strategic level, regionally important sites that may accommodate major investment requirements.
- 7.5 This Study has identified all allocated/committed strategic employment sites which have an existing, remaining site area of 25+ hectares. It has also provided conclusions on the broad locations that should be the focus of future strategic employment land supply. The Study is not an Employment Land Review (ELR) but focuses on strategic employment sites and locations. The ELR's of each local authority have, however, been key information sources. The Study does not purport to allocate sites and is not a statutory planning document. Nor, importantly, should the findings of this Study prevent, or in any way prejudice, the thorough and objective assessment of the planning and other merits of sites through the statutory planning process, and through the examination of development plans in the Study Area.
- 7.6 We summarise below our key conclusions.

Offices and Industrial Market

- 7.7 Our analysis of the market shows that whilst there is sufficient supply of office accommodation/sites there is wide anecdotal acknowledgment by the industry of a shortfall of strategic employment land sites (B2 & B8).

Offices

- 7.8 Since the 2015 Study the private sector market has increasingly seen the benefits that regional locations provide for premises due in part to co-location strategic, efficient occupancy and labour costs. We expect these trends to continue.

- 7.9 Further, judging by the reported ambitions of the co-working sector, 2019 was to be the third year in succession of continued growth in take up attributable to serviced, managed and co-working office providers, particularly in Birmingham City Centre.
- 7.10 However, the appetite for development, and the availability of strategic sites for development, varies significantly across the region. On the whole, market evidence still suggests that availability of existing built space continues to tighten, whilst many developers resist the opportunity to develop speculatively due to the associated development risks and financial/borrowing constraints.

Industrial

- 7.11 The West Midlands is a region of opportunity with key strategic and economic growth drivers combining to position the area as a place to invest for occupiers with the conditions right to deliver economic growth both now and in the future (HS2/Metro) given its connectivity, accessibility to key markets, skills and supply chain and with a policy focus upon infrastructure growth corridors as locations for strategic employment sites.
- 7.12 The West Midlands, once home to the industrial revolution, is now a global centre of innovation in the key growth sectors of healthcare including medtech, clinical trials/testing and AI, advanced manufacturing including engineering and battery technology, transport tech, creative media including digital technology and gaming, higher education and professional services.
- 7.13 Our analysis has shown significant demand in the West and East Midlands over the period 2015 to 2018 for industrial/logistics floorspace over 100,000 sqft, with average take up of 0.9 million sqm (9.68 million sqm) p.a. over the combined West and East Midlands area. The corresponding figure for the West Midlands was 0.4 million sqm. Adopting the assumptions in this Study about site capacity, this would absorb circa 225 ha p.a. across the Midlands, and circa 100 ha p.a. within the West Midlands.
- 7.14 There was circa 1.1 million sqm (11.8m sqft) of existing property and units under construction in the combined West and East Midlands area at the end of Q4 2018, which was available in 52 units including speculative units under construction. This equated to approximately two year's supply across the combined West and East Midlands area, having deducted design and build transactions (assuming no growth in demand and deducting design and build transactions). Availability would have been approximately half this for the Study area. At the end of Q3 2019, there was circa 0.65 million sqm (7.0 million sqft) of existing property and speculative units under construction in the combined West and East Midlands area, and only 0.14 million sqm (1.5 million sqft) in the West Midlands, equating to less than one year's supply in the West Midlands area.
- 7.15 Whilst demand has historically been characterised by the automotive sector with occupiers seeking space for advanced manufacturing and engineering floorspace, and their supply chains, this sector is changing. 2018 recorded a quieter year with Brexit uncertainty (as a proportion of total take up) with significant demand from the retail sector, non-internet (28%), ecommerce (27%) and third party logistics space (23%). Whilst demand still remains in the automotive sector 2018 saw some demand for battery development and assembly plants reflecting the growing trend of automotive manufacturers looking at electric car technology as an alternative to diesel and petrol combustion engines.
- 7.16 The analysis has clearly shown that supply needs to match demand with circa 0.4 million sqm of floorspace required p.a. in the West Midlands to maintain current levels of take up. Whilst this analysis has focussed on past take up trends (not allowing for future growth), and current and existing supply, it is clear that the market will

respond if fit for purpose supply is available, with scope for such take up to increase, particularly with the probability of receiving strategic, one-off inward investment requirements.

- 7.17 At present the usual churn of the property market and opportunities for trading up to higher quality premises is accounting for the available supply. Given the opportunities for businesses of a well positioned West Midlands location we are confident that an increase in supply will result in an increase in demand.
- 7.18 For the region to fulfil its clear potential, as advocated earlier in this Report, this level of good quality supply needs to be maintained and increased. It is recommended that a proactive approach is taken to identify a deliverable portfolio of fit for purpose employment land and property capable of providing sufficient supply thus enabling it to provide a timely response to meet both known local needs and unknown (and at times unquantifiable) strategic employment requirements.
- 7.19 We recommend that consideration be given to adopting a similar approach to strategic employment land as that adopted for housing land supply, so that a minimum portfolio of 5 years supply for the region is identified and maintained. We recommend also that consideration be given to the merits of adopting a two tiered approach to identifying employment land, differentiating between strategic sites of 25+ ha, and local sites, and sites for target growth sectors. This will require a significant dialogue between the Local Authorities, LEP's and other partners/stakeholders.

Engagement (Market)

- 7.20 Stakeholders welcomed the preparation of the Study, and viewed it as having potential to provide an important contribution to the evidence base that would inform future development plan reviews across the Study area. It will also felt that the Study should set the agenda for further work required to advance the debate, and that it should make recommendations on the scope of that future work. More specifically, the following key messages emerged from engagement with the market:
- **Acknowledged Shortfall:** there is a general agreement (or at least perception) amongst stakeholders that the availability and choice of existing and new space under construction is at an unacceptably low level, and that there needs to be collective political will to address the limited supply of Strategic Employment Sites.
 - **Robust Evidence Base:** it was felt that the Study's supply-led scope is too narrow which will impact on the extent to which it may be relied upon, and that:-
 - most commentators advocate the commissioning of an econometric demand forecast would enable the shortfall to be quantified; and
 - demand is significant and to reflect the pace of change in manufacturing and logistics, a follow on Study of modern business requirements would add value to the Study.
 - **Definition of Strategic Employment Land:** the definition used within the Study was generally supported, but with the following qualifications.
 - a 25 ha threshold may render some sites potentially unable to deliver anything of scale (although the Study adopts this site area as a minimum, with many sites being significantly larger); and
 - there is a need to distinguish between sites that may accommodate 'strategic' and 'local' level needs in the preparation of local plans.

- **Public Sector 'Buy-in':** the support of the Public Sector partners to the report's findings was highlighted as being of particular importance so that a 'Statement of Common Ground' or similar, to be endorsed by the LEPs/ LPAs, might be considered.
- **Site Assessment:** the Study's 'policy off' approach to the consideration of appropriate locations for Strategic Employment Sites was welcomed, given the likelihood that a substantial number of sites would be located within the Green Belt.
- **Statutory Consultation:** input from statutory consultees (and, in particular, Highways England) would be of considerable benefit to the Study's conclusions.
- **Study Outputs:** the presentation of outputs at a 'broad location' level was favoured, and preferred over the alternative 'site specific' approach which might be seen as pre-determining the appropriate testing and assessment of the individual and relative merits of sites through Local Plan processes.
- **A New Spatial Framework:** a new spatial framework is needed to advocate a policy mechanism to address the current and any future shortage of strategic employment land.

Engagement (Local Authorities)

7.21 Some of the key messages that came out of the discussions with Local Authorities are summarised below.

- a) Several local authorities are of the opinion that there are no suitable sites within their boundaries that could support a Strategic Employment Site of 25ha or larger. The Metropolitan and more 'urban' local authorities saw limited or no potential to deliver strategic employment sites within their areas, and it was felt that the delivery of such sites in the Black Country may require public sector intervention. Others saw the potential for delivering a Strategic Employment Site, and recognised the significant economic and social benefits that would bring.
- b) Some concern was raised in relation to an over-dependence on delivering B8 Storage and Distribution sites, and the risk of limited job creation from such development given their low worker densities, extensive levels of automation and manufacturing efficiency.
- c) A number of Local Authorities have identified existing or potential locations which would be the focus for regionally important growth sectors which do not require sites as large as 25ha. This was recognised at the outset by the consultants and further work will be needed on this issue.
- d) High quality transport infrastructure (whether existing, planned or proposed) was highlighted as being central to the successful delivery of Strategic Employment Sites. Good access to a motorway junction, or to the trunk road network, was seen as critical to the successful delivery of such sites, as to a lesser extent was proximity to public transport routes. Local Authorities highlighted the potential for strategic highway improvements to unlock land which at present is constrained by poor access. Such improvements may include the following:-
 - M54 / M6 link road;
 - New motorway junction on the M6 at Corley Services;
 - New motorway junction on the M42 at Catherine-de-Barnes; and
 - M42 Western Orbital (no confirmation at this stage that this scheme will come forward).
- e) Conversely, problems with capacity on the existing Strategic Road Network (for example J3 of the M6) could be a barrier to bringing sites forward so that long-term improvement works may be required in several locations. Highways England input into bringing such schemes forward will be crucial.

- f) HS2 and related infrastructure improvements were considered to be potential catalysts for further employment land release and delivery.
- g) Many Local Authorities are constrained by substantial parts of their administrative areas being located within the Green Belt. It was acknowledged that a Green Belt review would be required to evaluate the potential to remove land from the Green Belt to meet identified needs, and to support decisions over the most appropriate locations for doing so. Some felt that the search for locations for Strategic Employment Sites should include a hierarchical approach and a preference for non-Green Belt sites first.
- h) In relation to the aims and objectives of this Study, it was highlighted that the Study should ensure a balanced growth approach and that it should consider the regional profile and opportunities within adjacent boundaries.

7.22 More generally, concern was raised that the Study might identify potential sites that have not been identified previously within emerging development plans. Whilst this may be the case, any Strategic Employment Site will need to be assessed through the local plan making process and, in this regard, it will be essential that site promoters engage with Local Authorities

Existing Supply (Allocated Employment Sites)

7.23 A comprehensive audit of adopted and emerging evidence based documents for the 24 local authorities situated within the Study area initially identified a total of 664 sites which met the key 25+ ha criterion. Further analysis confirmed that most have been largely built out so that a refined list included only 12 sites with a remaining site area of 25+ ha. The DCO at the WMI was added later. The potential floorspace capacity of the 13 allocated and committed sites is circa 2.96 million sqm. This conclusion is, however, to be approached with a degree of caution having regard to the length of time that some sites have been identified and allocated, without being brought forward. Moreover, the capacity of sites is expressed on the basis of gross site area, rather than on the basis of a net area, as per the agreed terms of reference of this Study. It is not the purpose of this Study, however, to reach conclusions on whether sites should remain as allocations (that is a matter for the plan-making authorities involved), or to reach conclusions on the net developable area of the allocated sites. Nonetheless, the estimated capacity should for the purpose of this Study be treated as a maximum.

7.24 We have noted an average take up of new, Grade A floorspace in the West Midlands area (as defined for the purpose of the analysis) of approximately 0.4 million sqm per annum. Based on evidence of past trends in relation to take-up, and assuming that no additional strategic employment sites are brought forward to replace those that remain, the current supply of allocated and committed employment land would appear to represent a maximum of 7.41 years supply. This includes the specific provision for rail freight related development at the WMI which alone comprises 2.47 years supply.

7.25 On the basis of the 'past trends' approach that we have adopted it is clear, as it was in 2015, that there is a limited supply of available, allocated and/or committed sites across the Study Area that meet the definition of 'strategic employment sites', and an urgent need for additional sites to be brought forward to provide a deliverable pipeline, noting the very substantial lead-in times for promoting and bringing forward such sites.

Industry Promoted Land

7.26 As part of the engagement process, stakeholders were invited to submit details of their particular land interests. The consultant team received details of 31 sites of 25+ hectares that stakeholders were promoting for employment,

or were considering promoting for employment development. This included the WMI which has since been added to the Allocated and Committed supply. At the 'headline' level, these sites represent a combined area of circa 2,370 ha. Applying the consistent assumption that 25ha of land may support circa 100,000 sqm of floorspace, this equates to circa 10.47 million sqm of potential floorspace. Based on average take up of circa 0.4 million sqm p.a. in the West Midlands area (which equates broadly with the Study Area), this would provide a further 23.7 years of potential capacity/supply.

- 7.27 This would require, of course, that all the sites in Table 6.2 would ultimately be confirmed as allocations in the relevant development plan(s), which will not be the case. Moreover, it has no temporal dimension, and makes no allowance for the time that it may take to secure such allocations, and to then bring those forward through the planning application process, and to deliver any necessary supporting infrastructure. For these reasons, it is not sensible to conclude that all the identified sites will contribute to supply in the short to medium term and this element of potential supply should be treated with an appropriate degree of caution.

Sites at Motorway Junctions

- 7.28 It is our view that Strategic Employment Sites are best delivered in locations that are accessible to the strategic highway network, with sites located close to motorway junctions being prioritised by developers and occupiers. With this in mind the Study includes a high level review of land adjacent to all motorway junctions within the Study area to test whether there may be sites of 25+ ha that could accommodate strategic employment needs. The search identifies substantial amounts of land that could support employment development, if promoted for those purposes, and subject to the consideration of technical, environmental and other matters. We have not, however, made any allowance in our conclusions on potential supply from such sites.

Total Potential Capacity/Supply

- 7.29 Table 7.1 below summarises the existing supply of strategic employment sites, and the potential contribution that could be made from the industry promoted sites that have been put to the Consultant team.

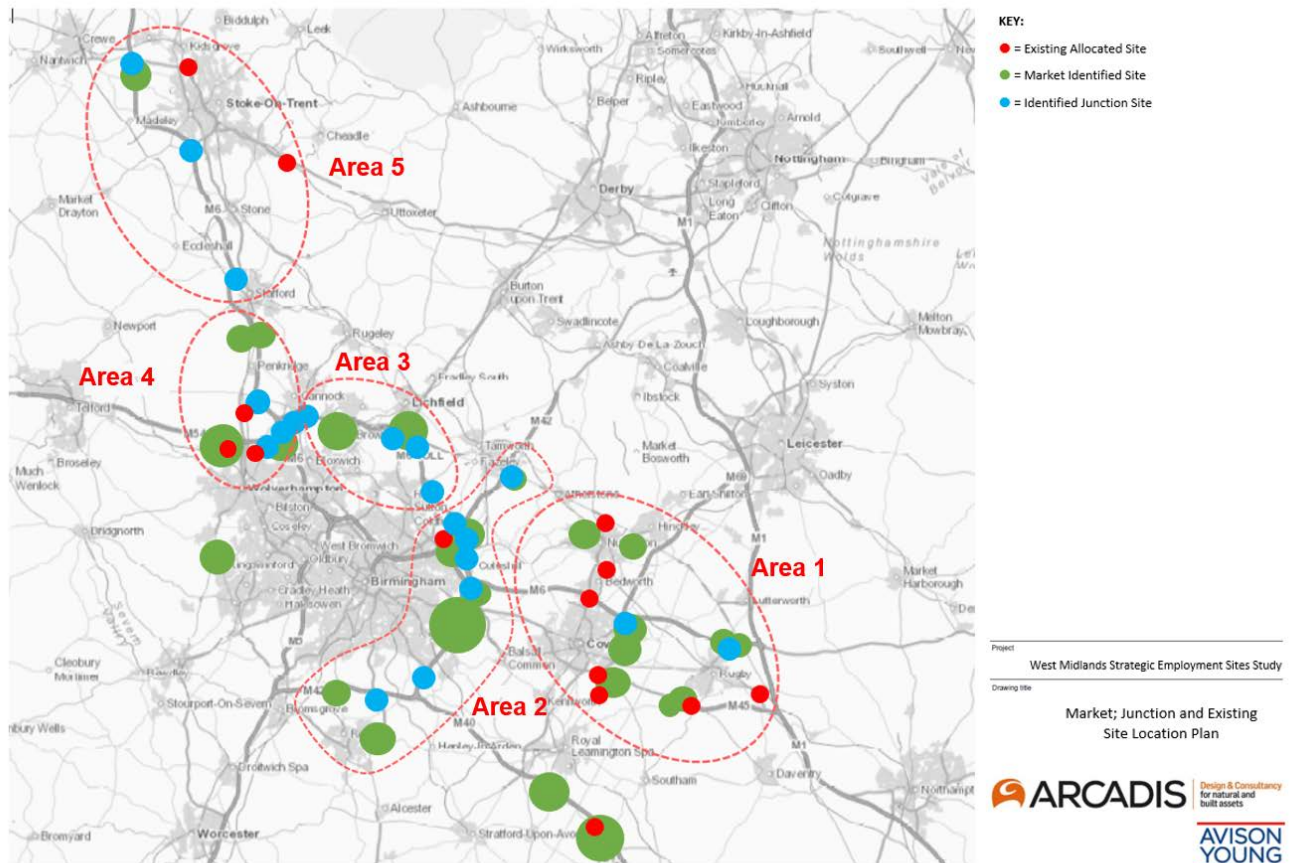
Table 7.1 – Existing and Potential Supply in Key Locations (Source: Avison Young 2019)

	Area 1	Area 2	Area 3	Area 4	Area 5	Years supply	Outside 5 clusters
Allocated Sites	71 ha	264 ha	-	323ha	83 ha		100 ha
Years supply	0.71	2.64	-	3.23	0.83	7.41	1
Industry Promoted Sites	905 ha	448 ha	152 ha	494 ha	70 ha		301 ha
Years supply	9.05	4.48	1.52	4.94	0.7	20.696	3
TOTAL	976 ha	712 ha	152 ha	817 ha	153 ha		401 ha
Years Supply	9.76	7.12	1.52	8.17	1.53	28.1	

- 7.30 It is our view that, at a minimum, recent levels of demand are likely to be sustained from a market perspective. This could, however, increase over and above current levels given the attraction of the area as a location for investment, the ambitions of the LEPs to grow the economy and to increase productivity, and the potential consequences of the coronavirus pandemic. We have recommended that consideration be given to the specifics over quantum of demand being assessed via an econometric demand forecast.
- 7.31 If only allocated sites, were assumed to contribute to supply there would be a maximum of 7.41 years supply at observed levels of demand and much less if demand were to materially exceed trend-based levels. If only allocated sites, plus all of the industry promoted sites in Key Locations, were assumed to contribute to supply there would be a maximum of 28.1 years supply at recent levels of demand, and 14.05 years if demand was double the recent trend-based levels. We have, however, concluded that it is not realistic to assume that all of the industry promoted sites will in time be confirmed as allocations. This high-level analysis underlines:-
- the urgent need to identify a pipeline of new Strategic Employment Sites to meet needs beyond the 7.41 years (or less) of supply that exists in allocations and committed sites; and
 - the need to consider testing, through econometric forecasting, the level of demand that the sub-region should be seeking to meet and that, whatever that level may be, existing supply must be supplemented in the short term.

Delivering a supply of Strategic Employment Sites

- 7.32 Based on our analysis of the quantum of supply, market intelligence around areas seeing considerable demand, and those areas achieving the higher land prices, the prime market facing locations for Strategic Employment Sites is to the east of Birmingham in an area that covers a geography from J2 of the M42 in the south, north to J10 of the M42, south west to J14 of the M40 and east to J1 of the M6. On this basis we identify five key clusters of sites (as identified on Figure 6.4) and recommend that the focus for identifying strategic employment sites should be in four of these clusters, or 'Key Locations' (excluding Area 3).



Sites Targeted at Specific Growth Sectors

7.33 Having regard to the second part of the definition of ‘strategic’ that has been adopted for this Study (see paragraph 1.20) we have identified sites that provide for growth in key target sectors but which are less than 25 ha in size. These sites have been identified through a review of current Strategic Economic Plan (SEP) priorities and known growth target areas, including enterprise zones, employment hubs and education led programmes, and supplemented by our market knowledge. The recognition of these sites further supports the growth of transformational sectors including that of the Combined Authority. As a baseline therefore, our research focused on the delivery of growth for the following sector areas:

- Advanced Manufacturing;
- Business, professional and financial services;
- Construction (building technologies);
- Digital and creative;
- Life sciences and social care;
- Logistics and transport technologies; and
- Low carbon and environmental technologies.

7.34 Working alongside the Local Authorities we identified a number of pipeline sector specific sites, to be delivered through infrastructure led programmes with the full list provided in Table 6.10. The sites identified focus upon current growth sectors (life sciences, digital and creative, advanced manufacturing and research and development). These opportunities build upon the existing skills base and training opportunities across the West Midlands, and set the precedent for the direction of globally competitive areas operating from the region.

- 7.35 The list is a starting point, and further analysis will need to be undertaken around the opportunity provided by these and other sites to contribute to employment growth in key growth sectors. This will need to consider whether there is capacity for locating additional employment under 25 ha focussing on key growth sectors and specific use classes.

8. Next Steps and Recommendations

- 8.1 This Study was commissioned to provide an update of the West Midlands Strategic Employment Sites Study (2015). It provides a commentary on recent take-up rates in the industrial and office markets in the Study area, and an audit of existing allocated and committed sites in the Study Area which meet the definition of 'Strategic Employment Land' that is adopted for the purpose of this Study.
- 8.2 The Study does not seek to predict future need but, as the remit evolved, there has been a high level assessment as to the extent to which certain locations / sites might be able to contribute to identified shortfalls in supply. It provides a first step contribution to the evidence base that will inform future Local Plan reviews across the sub region. It also reviews the conclusions that were reached by the 2015 Study in relation to those locations in the Study Area that have the potential to provide a supply of additional strategic employment sites in the future.
- 8.3 It was always anticipated that this Study would only provide a first step and that future work would be required to quantify demand and to support the identification and delivery of a pipeline of employment land that would be capable of meeting needs on an ongoing basis. Our recommendations on the additional work that would add to the findings of this Study, and contribute to the provision of a robust evidence base to inform local plan making, are set out below.

Calculating Shortfall

- 8.4 Our analysis concludes that the availability of investor ready sites, and existing and new space under construction, is very limited and that the supply of land and space capable of meeting strategic employment needs in the Study Area represents less than only 7.41 years capacity (and less than 5 years capacity if the rail freight specific DCO commitment at the WMI is discounted), having regard to take-up rates in the Study Area over the monitoring period adopted. There needs to be a collective political will to acknowledge the shortfall and in order to address this issue, and to provide a pipeline of supply that can meet needs going forward.
- 8.5 Whilst there is considerable anecdotal evidence from those active in the market of a significant shortfall in the availability and future supply of strategic employment sites, it is recommended that consideration be given to this being quantified through an econometric demand forecast. Such an assessment would add materially to the findings of this Study and would inform the strategy for delivering a sufficient supply of strategic employment land. A related area of follow-on analysis should include a critical review by plan-making authorities of the capacity and deliverability of the remaining allocated sites.

A Study of Modern Business Requirements

- 8.6 Levels of demand are significant and there is a need to look to the future and provide sufficient supply to meet the pace of change in manufacturing and logistics. It is recommended that further work should be undertaken that will provide a greater understanding of the market dynamics driving this demand and to fully understand the potential scale of growth and the needs of modern logistics and 'Just in Time' delivery for manufacturing plants.

Consultation

- 8.7 It was suggested during engagement that it would be prudent to consult with statutory consultees as part of the Study, and in particular with Highways England given the likely significance of network capacity to the delivery of strategic employment land. We have noted that it has not been within the Study's remit to engage with statutory consultees, including Highways England, but recommend that this be undertaken alongside other areas of

additional work having regard to (i) the assumptions in relation to need that are adopted in this Study, and which may arise from any further econometric demand forecasting; and (ii) the Key Locations that we recommend should be the focus of employment growth.

- 8.8 It is recognised that both public and private sector stakeholders are anticipating the outputs of this Study and it is important that they are appropriately engaged given their contributions to the Study. In particular it will be essential that early engagement takes place with the local authorities on the scope of follow on work that is recommended in this Study.

Green Belt Review

- 8.9 This Study has taken a 'policy off' approach and has largely ignored the implications of green belt policy for the identification and delivery of Strategic Employment Sites. Given that the 'Key Locations' for meeting strategic employment needs that have been considered through the approach taken are substantially affected by green belt, one next step would be for due consideration to be given to treating the need for strategic employment land across the sub-region and Study Area (as quantified by a future econometric demand assessment) as circumstances that could support the release of land from the green belt.
- 8.10 A further step would be to develop and adopt a methodology for taking a strategic and coordinated approach to the review of the green belt across the Study Area, building from green belt reviews that are ongoing in parts of the Study Area, and picking up those areas that are not currently subject to a review.

Assessment of Sites

- 8.11 Our assessment has concluded that the supply of allocated and committed Strategic Employment Sites is very limited (and that actual capacity may be more limited than the 'headlines' suggest) and may be capable of meeting needs in only the short term, adopting a trends-based approach. We have concluded also that the supply of Strategic Employment Sites resulting from current and ongoing activity by landowners, developers and promoters could be considerable, but is uncertain, both in relation to the quantum of land that may be confirmed as allocations in Local Plans, and the timing of its allocation and subsequent delivery.
- 8.12 Those promoting sites will carry out their own technical and environmental due diligence and their own assessment of development viability, which will be tested through development plan processes. A key factor, however, will be a clear understanding of the capacity of the strategic road network within the Key Locations, the extent to which that may represent a barrier to growth, and the ability to mitigate capacity constraints. Discussions with Highways England should proceed to establish how public and private sector partners can most effectively evaluate the need for, costs of and timescales associated with any highway improvement works required to support the delivery of Strategic Employment Sites.
- 8.13 As part of this Study the Client group identified a series of assessment criteria that could be applied on a consistent basis to the 'industry promoted', and any other, sites (including those adjacent to motorway junctions). This assessment has been deliberately 'high level' for the purpose of this Study, and with no weighting attached to any particular criteria. We recommend that consideration be given to developing a more detailed, refined and weighted set of assessment criteria to inform any individual or relative merits assessments of sites/locations that may be considered as part of any further work arising from the broader recommendations of this Study.

- 8.14 In addition to the future supply that comes from allocated and pipeline sites we suggest that an assessment is undertaken, alongside the providers, to understand the capacity/target markets for the sector specific sites identified in this Study.

Monitoring

- 8.15 It will be essential that the public sector partners carefully follow the outcome of key decisions on the allocation of sites and implementation of proposed transport infrastructure given the impact that they could have upon the strategy for delivering Strategic Employment Sites. This will include proposed highway improvements including the M54/M6 link road and new motorway junctions.
- 8.16 We recommend also that a framework for monitoring the progress of sites through the sub-region's development plans be established, so that a clear view on the quantum and timing of potential pipeline supply can be considered, maintained and used for comparison with demand forecasts and to inform future strategy.

Regional 'Call for Sites'

- 8.17 This Study has identified all remaining allocated and committed sites that meet the definition of Strategic Employment Land that has been adopted for the purposes of the Study. It has also captured details of 31 sites that were, at the time of our engagement with the private sector, at various stages of promotion through the Local Plan reviews that are taking place across the Study Area. We have noted, however, that it may not have captured all such sites. Moreover, there may be sites included in Local Plan reviews that are not captured in this Study and, of course, the picture will evolve over time.
- 8.18 On this basis we consider that there is considerable merit in undertaking a more formal 'Call for Sites' exercise with the objective of generating a comprehensive picture of existing supply, pipeline and opportunity. The exercise would adopt an agreed site size would seek supporting information on any other matters that would support evaluation of their merits. This could be refreshed on a regular basis and would support the wider recommendations of this Study.

Spatial Framework

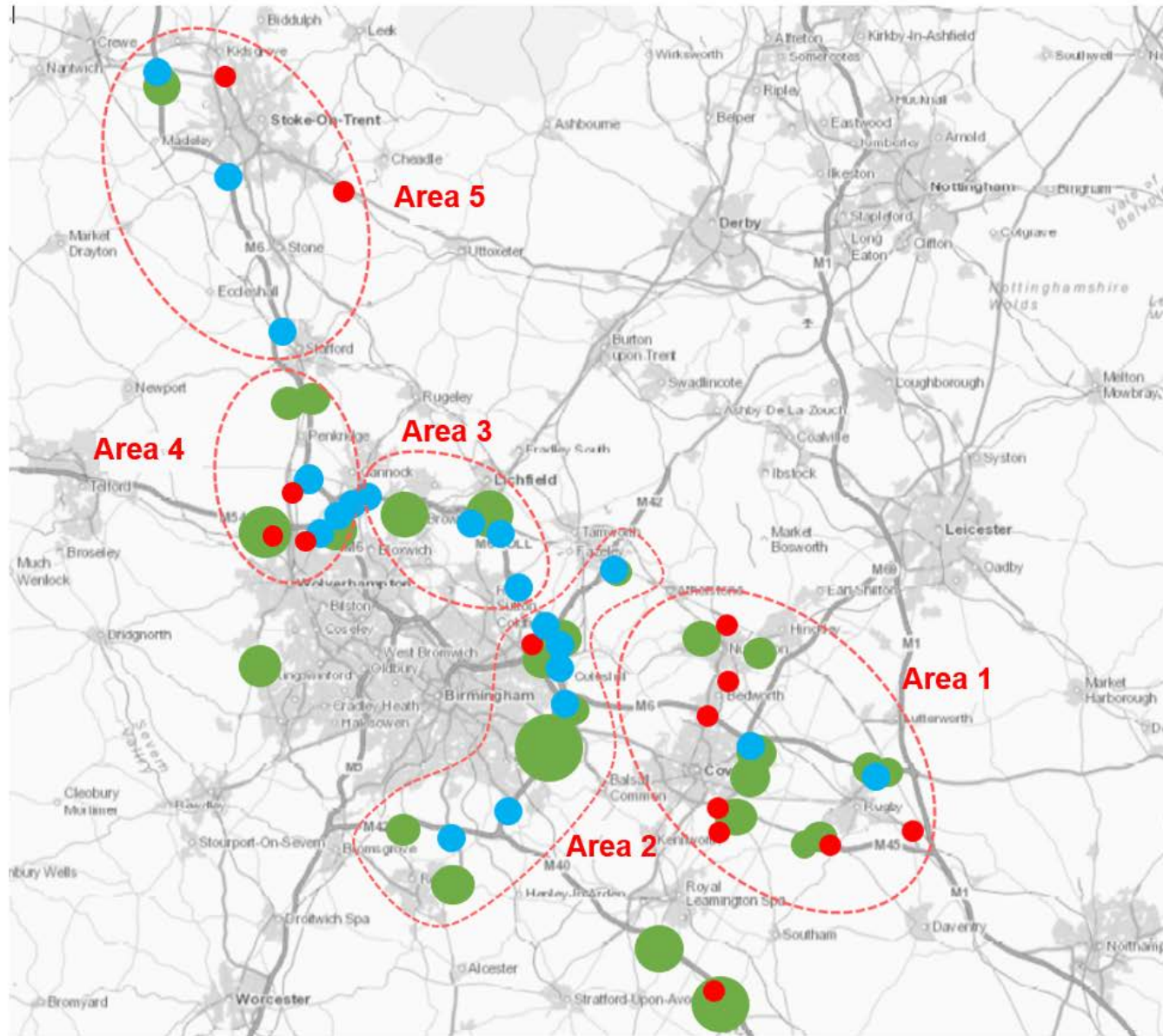
- 8.19 We recommend that consideration is given by the public sector partners to the delivery of a new spatial framework policy mechanism that ensures that local authority plan-making processes identify and ring-fence sufficient land to meet strategic employment land needs.
- 8.20 We recommended at paragraph 7.19 that consideration be given to adopting a similar approach to strategic employment land as that adopted for housing land supply, so that a minimum portfolio of 5 years supply for the region is identified and maintained. We recommended also that consideration be given to the merits of adopting a two tiered approach to identifying employment land, differentiating between strategic sites of 25+ ha, and local sites, and sites for target growth sectors. This will require a significant dialogue between the Local Authorities, LEP's and other partners/stakeholders.
- 8.21 These matters may be given effect initially by a joint commitment, through a Memorandum of Understanding or similar, to:-
- a) consider the merits of commissioning econometric demand forecasting to test and build from the conclusions that this Study reaches in relation to Key Locations, and to act upon the conclusions of that discussion;

- b) consider and agree the methodology of a strategic, coordinated green belt review that focuses on Strategic Employment Sites, adopting the definition in this Study and informed by the demand forecasting that we recommend be commissioned;
- c) undertake, initially and subsequently, a 'Call for Sites' exercise;
- d) consider and agree a detailed and weighted set of assessment criteria to inform any individual or relative merits assessments of sites/locations that may be considered as part of any further work arising from the recommendations of this Study and as part of the review of Local Plans across the Study Area;
- e) agree the mechanisms for monitoring; and
- f) engage with Highways England to seek their strategic and detailed input.

8.22 The above evidence would inform further consideration of the most appropriate locations / sites, and the development of a Spatial Framework to operate across the Study Area which would set out the approach that the local authorities in the sub-region will adopt in the preparation of their Local Plans. This would include consideration of the merits of adopting a two-tiered approach to identifying employment land, differentiating between strategic and local sites. As part of this, we recommend that the public sector takes a proactive approach and considers the merits of identifying, protecting and maintaining a minimum of a five year supply of Strategic Employment Sites. This will need to be considered in the light of the eventual outcome of the proposals for planning reform and changes to the plan-making system suggested in the August 2020 White Paper 'Planning for the Future'.

Appendix 1

Broad site location plans



- KEY:**
- = Existing Allocated Site
 - = Market Identified Site
 - = Identified Junction Site

Project
West Midlands Strategic Employment Sites Study

Drawing title
Market; Junction and Existing Site Location Plan





KEY:
 ● = Existing Allocated Site
 ● = Market Identified Site

Project
 West Midlands Strategic Employment Sites Study

Drawing title
 Market Identified Sites
 Location Plan





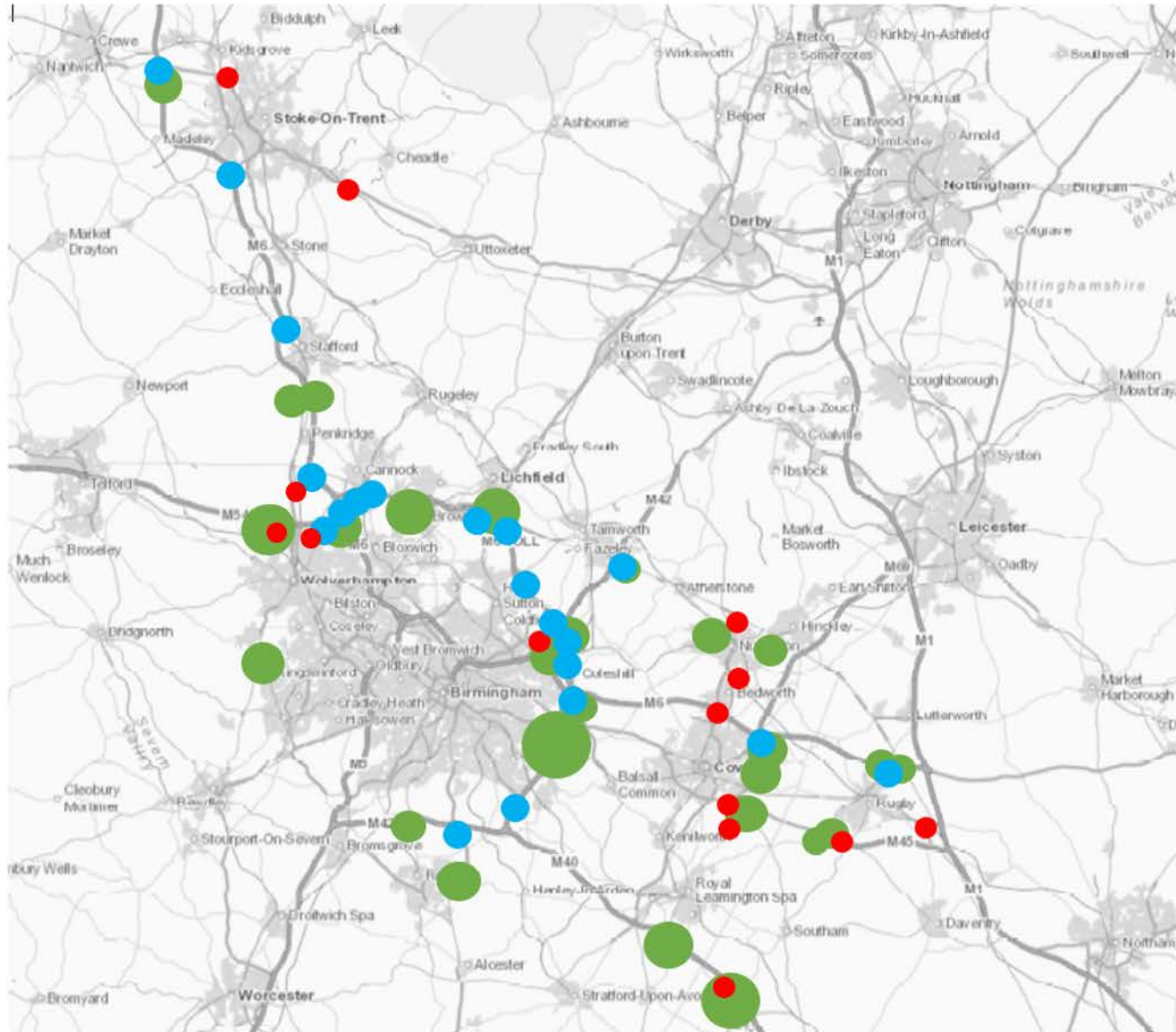
- KEY:**
- = Existing Allocated Site
 - = Identified Junction Site

Project
West Midlands Strategic Employment Sites Study

Drawing title

Identified Junction Sites
Location Plan





- KEY:**
- = Existing Allocated Site
 - = Market Identified Site
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Project
West Midlands Strategic Employment Sites Study

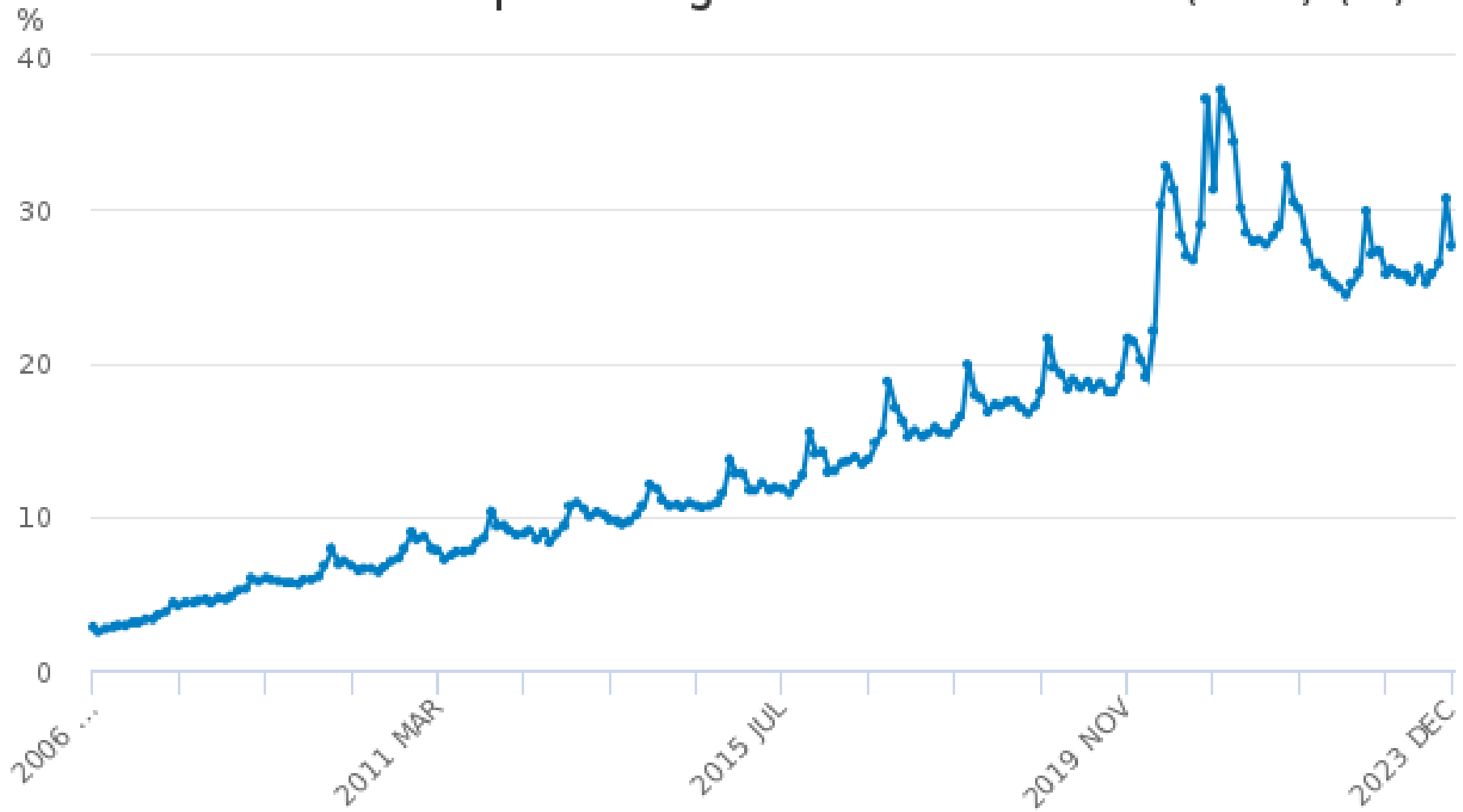
Drawing title
Market; Junction and Existing Site Location Plan



Appendix 3

Office of National Statistics - Internet sales as a percentage of total retail sales (ratio) (%) (December 2023)

Internet sales as a percentage of total retail sales (ratio) (%)



— Internet sales as a percentage of total retail sales (ratio) (%)

Appendix 4

Leicestershire Highway Design Guide (January 2022) Leicestershire County Council

The [Leicestershire Highway Design Guide](#) deals with highways and transportation infrastructure for new developments in areas for which Leicestershire County Council is the highway authority (Please see [Figure IN1](#)).

This version of the LHDG is an interim update and is currently under review; please contact 0116 305 0001 for further information.

Please note: the companion documents, 'Specifications for highway works for new developments' and 'Standard conditions applying to highway works for new developments', are presently only available in Portable Document Format (PDF).

Contents

- Foreword
- Part 1: Introduction: Provides important information about this document, about LCC as the Highway Authority and our policies and objectives (including our Highways Development Control and Access to Road Network policies). Please read in full first if you have not used this document before.
- Part 2: Preparing development proposals: Guidance on preparing and considering proposals. Explains when we normally require transport assessments, travel plans and other supporting information.
- Part 3: Design guidance: Sets out our normal requirements, and is intended to help you design layouts that provide for the safe and free movement of all road users. Also covers parking for cars, service vehicles, cycles and motorbikes.
- Part 4: Materials and construction: Sets out LCC's usual requirements and how we will deal with alternative proposals. It also includes details on our commuted sums policy, including how we calculate them, what we normally charge them for and the schedules of rates.
- Part 5: Adopting new roads and the advance payments code: Guidance to help you get your roads adopted under Section 38 of the Highways Act. It also sets out our advance payments code procedure, which covers both roads that are to be adopted and those which are to remain private. Our fees and other payments are also set out.
- Part 6: Working on existing highways - Section 278 procedures: Guidance on the efficient construction of works affecting the existing public highway. Our fees and other payments are also set out.

Part 7: Appendices

- Appendix B (1 to 6): Consultation related documentation
- Appendix C: Assessing the transport impacts of development proposals (including information on travel plans). Explains how you should prepare an assessment, including guidance on preparing a scoping report and criteria for assessing traffic impacts.
- Appendix D: Additional information on safety audits, including when they should normally be carried out.
- Appendix E: Additional information on private area requirements. Explains why we normally require certain design features.
- Appendix F: Preservation of trees. Detailed guidance to determine which trees should be retained and how best to protect them during and after construction works.
- Appendix G: Landscaping on new developments, including advice on appropriate species to plant.
- Appendix H: Air quality management zones. Details of their location.
- Appendix I: Details on other matters that may need to be taken into account in preparing development proposals, for example traffic regulation orders.
- Appendix J: Advance payments code (APC) - gives background information on the APC and how it is applied in Leicestershire.
- Appendix K: Tell us what you think - please complete the form included in this appendix if you have any comments on LHDG. Any suggested changes will be considered through our review process, which is also included.
- Appendix L: Definition of streets
- Appendix M: The Department for Communities and Local Government (DCLG) research paper on residential car parking.
- Appendix N: Leicestershire Highway Design Guide Business plan.
- Appendix O: Pre application checklist.
- Part 8: Glossary

Companion documents to the 'Leicestershire Highway Design Guide'

- Highway requirements for development part 4 parking standards Refer to part3 sectionDG14 first
- Standard conditions applying to highway works for new developments - PDF
- Commuted Sums
- Rights of Way Guide
- Specifications for highway works for new developments - PDF
- Standard drawings

Part 1: Introduction

Section IN1: Document status

THIS VERSION OF THE LHDG IS AN INTERIM UPDATE AND IS CURRENTLY UNDER REVIEW (LAST UPDATED JANUARY 2022).

1.1 The [Leicestershire Highway Design Guide](#) (LHDG) deals with highways and transportation infrastructure for new developments in areas for which Leicestershire County Council is the highway authority (Please see Figure IN1).

A glossary of terms is provided in Part 8 of the LHDG suite of documents.

Section IN2: Our responsibilities

1.2 Leicestershire County Council is the Local Highway Authority for the areas covered by

- Blaby District Council
- Charnwood Borough Council
- Harborough District Council
- Hinckley and Bosworth Borough Council
- Melton Borough Council
- North West Leicestershire District Council
- Oadby and Wigston Borough Council

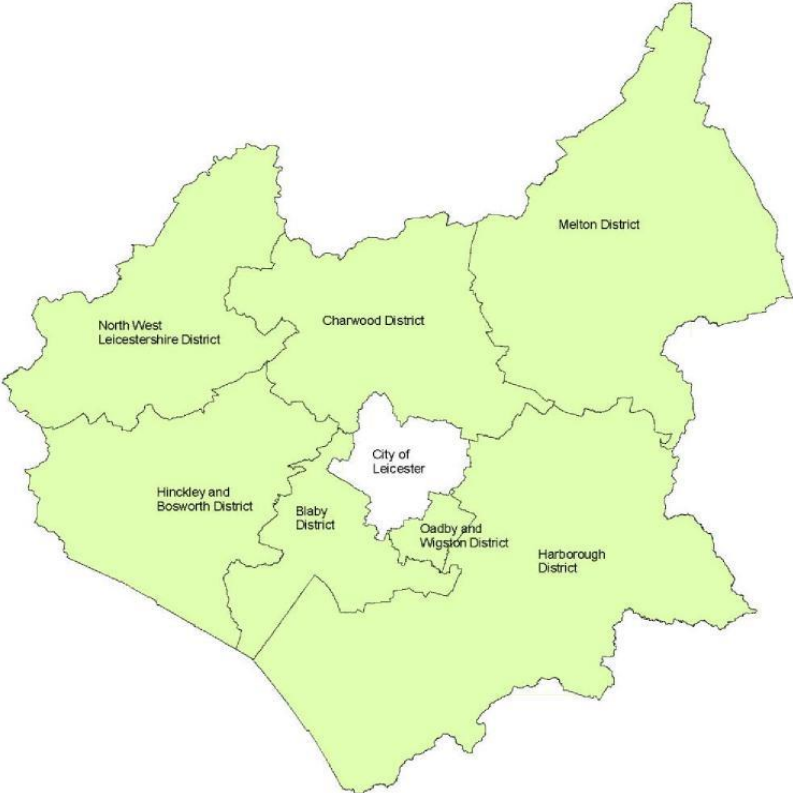


Figure IN1 Local Planning Authorities in Leicestershire

Please note that Leicester City is a unitary authority and is responsible for both planning and highways functions within its administrative boundary.

Leicestershire Highway Design Guide

The role Leicestershire County Council as Local Highway Authority

- 1.3 Leicestershire County Council is responsible for a range of highways and transport issues including:
- **all publicly-maintained highways in Leicestershire except for the M1, M6, M42, M69 motorways, and the A1, A5, A42, A46 and A50 west of M1 Junction 24 which are the responsibility of National Highways (see Section IN5). (Note: Please see our ['Highways Status Search'](#) page for details of which existing roads are adopted);**
 - providing socially-necessary local bus services, publishing bus and bus information strategies and promoting high-quality rural and urban services that encourage greater use of public transport; and
 - preparing the Leicestershire [Local Transport Plan](#)
- 1.4 LCC's Environment and Transport Department deals with those roads the County Council is responsible for. The Highways and Transportation Branch of the Department is responsible for providing highways advice on development proposals which affect the highways and transportation infrastructure. It deals with all highways and transportation matters, including:
- discussions with developers before they submit planning applications;
 - providing advice on applications (substantive response) to local planning authorities;
 - construction and adopting works for new development;
 - commuted sums; and
 - travel plans.

Section IN3: About this document

Background

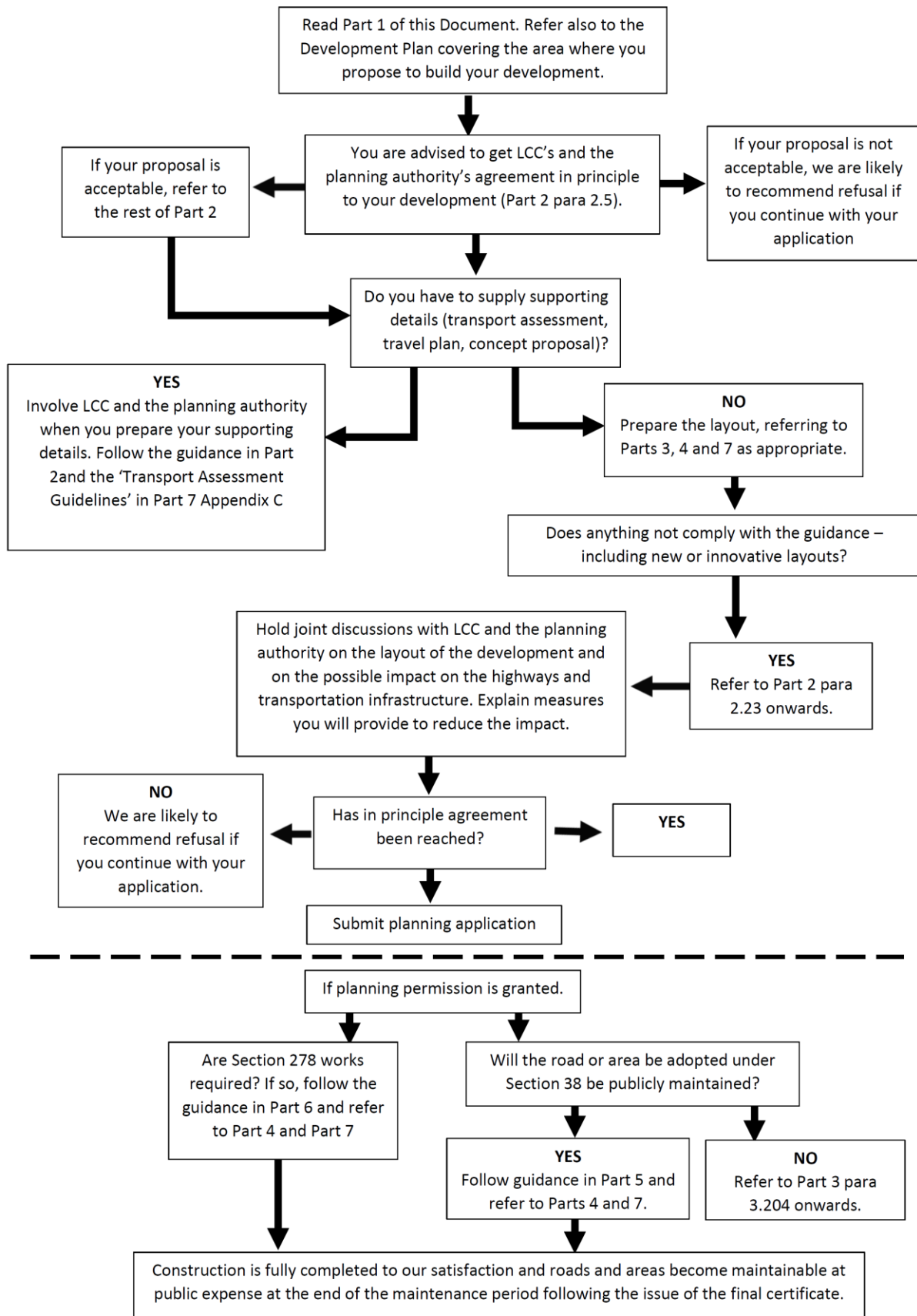
- 1.5 This version of the Leicestershire Highway Design Guide replaces the 6Cs Design Guide, which had previously replaced Highways, Transportation and Development. It references:
- the Government's most recent planning policy and guidance.
 - initiatives that continue to emerge as a result of the publication of research reports ['Paving the Way'](#) and ['Better Streets, Better Places'](#) (a research project that we took part in, see paragraph 1.7).
 - the Guidance on Transport Assessments published by the Department for Communities and Local Government; and
 - Local policies and strategies, including the [Local Transport Plan](#).

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- 1.6 LHDG was originally prepared by Leicestershire County Council after significant consultation. This included:
- carrying out 'fact-finding' consultations with a wide range of public and private bodies to seek views on 'Highways Requirements for Development' document;
 - carrying out a survey of around 2900 Leicestershire households in developments laid out in line with the standards contained in the 'Highway Requirements for Development' document;
 - actively taking part in the Office of the Deputy Prime Minister's research projects '[PPG3](#) and Highway Adoption Procedures' (which resulted in publication of '[Better Streets, Better Places](#)') and on residential parking; and in the Government's national project on commuted sums
 - consultations with other highway authorities in the region, both directly and through the East Midlands Development Control Forum and Midlands Service Improvement Group;
 - organising specific regional meetings on commuted sums for future maintenance and on shared-surface roads and Home Zones; and
 - holding a six-week consultation covering around 150 public and private bodies, including all Leicestershire planning authorities and many development companies.
- 1.7 Please see Part 7, appendix B for further details of all the above.
- 1.8 Figure IN2, below, shows how the various parts of this document relate to the overall development process, from initially considering the site through to completing works. You should follow it so your development proposals progress efficiently.

Leicestershire Highway Design Guide

Figure IN2 Overall development procedure



Leicestershire Highway Design Guide

Applying the guidance

- 1.9 The guidance in this document applies to:
- roads (streets) in residential areas or; areas of mixed residential / local facilities as defined in appendix L and roads serving employment and commercial developments
 - the overall development concept in terms of site access and highways and transportation impacts;
 - areas to be adopted as publicly maintained highways;
 - the safety, ease of access to, and future maintenance responsibilities of areas not for adoption; and
 - impacts of new developments on existing highways and transportation infrastructure.
- 1.10 We recognise that due to conditions at a site it may sometimes be difficult to comply with the guidance, particularly on urban, brownfield sites. We also recognise that the Government and planning authorities are encouraging new, innovative residential layouts that reflect local character while providing for more houses.
- 1.11 Where an acceptable case with supporting evidence that explains a layout is being proposed that is not explicitly covered by these guidelines, we will consider it if:
- the proposals meet the overall policies and objectives set out in this document (refer to Section IN4 onwards);
 - also meet any other policies and objectives of Leicestershire County Council;
 - you approach both us, and the relevant local planning authority, for early joint discussions to make sure that we can consider matters before you prepare any layout proposals; and
 - you supply a concept proposal and full supporting details in line with Part 2 of this document, and in particular paragraphs 2.17 onwards.
- 1.12 You must start thinking about and preparing the required details as soon as possible, and certainly before you submit a planning application. Otherwise, even if the development is granted planning permission, there is no guarantee that we will agree to adopt any roads or areas.
- 1.13 When you prepare the required details, you should work closely both with LCC and the planning authority. You are likely to find that planning authorities will not favour developments that lack quality layout and design.

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Developing the document

1.14 Long-term experience of reduced off-street parking and 'innovative' (unusual) residential developments is limited. There is still much to learn about:

- public opinion of these concepts;
- how safely the layouts will operate; and
- how easily they can be maintained.

What evidence there is suggests there have been some successes, but problems have been identified too, for example, in achieving low vehicle speeds and addressing residents' concerns about on-street parking.

1.15 There are also still issues relating to national guidance on the design of residential streets and this guidance can be contradictory, for example in terms of shared surfaces and providing for those with disabilities.

1.16 To try and address some of these issues, we will continue to work with other highway authorities, planning authorities and developers to share, learn and develop good practice. We will also try to take part in any national research that is carried out.

1.17 If you have examples of what you consider to be good practice that you are willing to share, please contact us at hdc@leics.gov.uk.

1.18 This document will undergo periodic review to make sure that it:

- contains no errors or omissions;
- reflects good practice, operational experiences, national research and policy initiatives, and
- reflects any other relevant changes in circumstances.

1.19 If you have any comments about how we can improve this guide, please let us know by filling in the form at Appendix K. We will consider your comments as part of our next review. You can find details of our review process at Appendix K.*

Section IN4: Our highways development management policy

1.20 We will work with developers and planning authorities to make sure new development is only permitted:

- in areas where there is a choice of safe and accessible methods of transport for all road users (including pedestrians and cyclists);
- on roads suitable for the type of development; and
- if the environment is not harmed, including through increased congestion.

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- 1.21 Any highway or transport infrastructure required to support the development must integrate with the existing infrastructure and be built in a way that enhances the quality of a development and does not place a burden on our resources.
- 1.22 We aim to meet the following specific policy objectives.
- **Road and personal safety:** To achieve developments that:
 - are safe for all users;
 - promote road safety; and
 - reduce personal safety risks (whether real or imagined).
 - **Accessibility:** To achieve developments accessible to all vehicles and people, including those with sensory and mobility impairments.
 - **Sustainability:** To promote sustainable, high-quality alternatives to the private car and to encourage using sustainable materials wherever possible.
 - **The impact on highways and transportation infrastructure:** To make sure the:
 - highways and transportation infrastructure is not adversely affected by developments, including safety and congestion; and
 - impact on people and the environment is minimised.
 - **Design quality and future maintenance:** To achieve highway and transportation infrastructure that:
 - contributes to high-quality developments that can be properly and efficiently maintained; and
 - encourages development layouts to be adopted, wherever possible, to safeguard frontagers interests.

Whole-life costs should be considered when materials and methods of construction are considered.
 - **Occupants' and users' satisfaction:** To achieve developments that are appreciated by occupants and users and that meet their likely needs. This will reduce the possibility of future complaints and problems, particularly in residential areas.
- 1.23 We will assess your development proposals against these objectives. Where we consider that your proposals have material implications, we will normally seek to resist your development proposals (for example, by recommending refusal of any planning application).

Section IN5: Our access to the road network policy

Principles

- 1.24 To maintain safety and the free flow of traffic, policy in the past has discouraged new accesses onto A and B-class roads and avoided increasing the use of existing accesses. For the future, and in line with an integrated transport policy, we will adopt a flexible policy on new connections to the road network. We will severely restrict access to the most important high-standard routes. Elsewhere, particularly in urban locations, in principle we will apply a more flexible approach. Please see paragraph 1.27 onwards for full details.
- 1.25 Where access is acceptable to us in principle, we will normally expect its layout to comply with the design guidance set out in Part 3. We will recommend refusal of any planning application that raises concerns about road safety. Approval for the access (and any associated development) will also depend on the planning authority where planning permission is required.

Access to A- and B-class roads

- 1.26 We will normally apply restrictions on new accesses for vehicles and the increased use of existing accesses on:
- roads with a speed limit above 40 mph (that is 50mph, 60mph or 70mph) or where measured vehicle speeds are in excess of 40mph;
 - roads with a speed limit of 40mph or less which are essentially rural in nature;
 - routes where the access would affect bus-corridor or bus-priority measures being put in place;
 - roads that are at or near capacity (cannot carry more traffic); and
 - roads where there is an existing problem with road safety.
- 1.27 Elsewhere, we will not normally restrict new accesses for vehicles, as long as they meet the conditions of paragraph 1.26. Also, where a number of developments are proposed along a section of road, the risk of accidents occurring will be reduced if they are accessed from a service road with a single point of access on the main road.
- 1.28 If access to a development can be gained off a minor or side road, you should normally consider this option as preferable (with improvements to the junction of the minor side road with the main road as necessary).

Access to other classified roads and unclassified roads

- 1.29 New accesses for vehicles and the increased use of existing accesses will normally be restricted on:
- routes where there are proposals for bus-priority measures;

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- roads where there is an existing problem with road safety;
 - roads where there are proposals to establish quiet lanes; and
 - other routes that are not suitable to carry the additional traffic and type of traffic from the development.
- 1.30 Elsewhere, new accesses for vehicles will not normally be restricted, if they meet the conditions of paragraph 1.26. Also, if access to a development can be gained off a minor or side road, you should normally consider this option as preferable.
- 1.31 In rural areas, new accesses for vehicles and the increased use of existing accesses will not normally be resisted in principle to:
- land allocated for development in the local plan;
 - agricultural land (that is remaining in agricultural use); and
 - a new, better access to replace an existing one.
- 1.32 This is subject to the conditions in paragraph 1.26.

IN6: Sustainability Standards for Residential Developments

Principles

- 1.33 Our Local Transport Plan (LTP) sets out transport policy for the relevant to Leicestershire. Our LTP is based on extensive evidence and is aligned to national transport and planning policies, which are set out in the National Planning Policy Framework, Circulars and Guidance Notes.
- 1.34 To help deliver our LTP we will seek to support new development in suitable locations and where the possibility of home-working is considered. These locations will be accessible by walking, cycling and public transport and will also have good access to key services, thereby reducing reliance on the private car. This is particularly necessary in order to:
- tackle the significant challenges posed by an increasing population
 - meet the statutory CO₂ reduction requirements of the Climate Change Act
 - tackle the health and social issues posed by a population that is becoming increasingly obese.
- 1.35 The overall aim of introducing these standards is to reduce the need to travel, particularly by car, and to promote more sustainable patterns of development.
- 1.36 We will expect applicants, as part of their planning application, to demonstrate that their proposals are consistent with the approach set out in the LTP. As we may adopt different approaches, particularly in urban and rural areas, the guidelines below have been provided to give general guidance only. You are advised to contact LCC regarding the specific local sustainability. Your attention is also drawn to the guidance in Part 3 (Section DG6: Public Transport).

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General standards / guidelines

- 1.37 The following guidelines for sustainable development have been derived from national guidance and are based on the following assumptions:
- Average walk speed of 1.4m/s or 400m every 5 minutes¹
 - Cycling speeds 12 mph/or 1.6km every 5 minutes²
- 1.38 Applicants should be aware of the following guidelines when submitting planning applications for new development within the Principal Urban Area³ (PUA) and Sub Regional Centres (SRC)⁴:
- Major employment areas should be within 2km (25min) walk or 5 km (15min) cycle ride. For applications involving new employment uses the same standards will apply in respect of major residential areas⁵
 - Public transport to a main public transport interchange should be within 800m (10min) walk⁵
- 1.39 In more rural areas i.e. those outside the PUA and SRC the following will apply:
- Minimum of hourly bus service to SRC within 800m (10min) walk
 - PUA / SRC within 5km
 - 800m (10min) walk to village centre offering access to key services for example education facilities, local convenience shop/Post Office, public house, community facilities, health services, employment areas
- 1.40 Please contact us if your proposed development fails to meet these guidelines. This will enable you to discuss your application in more detail before submitting a formal planning application.

Notes

1. Planning for Walking CIHT.
2. LTN1/20 Cycle Infrastructure Design
3. The distances / times quoted above should be viewed as maximums. In assessing them for your particular development proposal, you should take into account such other factors as may be appropriate, for example the availability of pedestrian footways, street lighting, cycle lanes and gradients / terrain.

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Section IN7: About National Highways

- 1.41 National Highways is responsible for the motorway and trunk road network in England.
- 1.42 National Highways has its own approach to considering the impacts of development proposals on roads it is responsible for. It also has its own requirements where it is necessary to alter or improve one of its roads to accommodate a development.
- 1.43 If your development proposal requires a change to a road that National Highways is responsible for, you will need to complete a legal agreement with them before you can carry out the works. (This is in addition to any agreement that you might need to enter in to with us.)

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Part 3 Design Guidance

Section DG1: Introduction

- 3.1 This document forms part of the Leicestershire Highway Design Guidance (LHDG). This Part is intended to help you design development layouts that provide safe and free movement for all road users, including cars, lorries, pedestrians, cyclists and public transport. You should select and assemble appropriate design elements to:
- provide road layouts which meet the needs of all users and do not allow vehicles to dominate;
 - create an environment that is safe for all road users and in which people are encouraged to walk, cycle and use public transport and feel safe doing so; and
 - help create quality developments in which to live, work and play.

We believe that such an approach, coupled with the flexibility that our guidance allows, already reflects many key themes of the Manual for Streets 2 (MfS2). We recognise that further work is required to bring LHDG even more closely into line with the MfS2, in particular with regard to our road design descriptions and guidance. Meanwhile, this will not stop us seeking residential development layouts that recognise that roads have a wider role to play in creating a sense of place and community as opposed to simply having a functional transport role.

- 3.2 Where this cannot be achieved by development layouts that are explicitly covered by this guidance, we are prepared to be flexible and each case should be considered on its own merits. Subject to Part 1 paragraph 1.14 onwards we will consider layouts that are not covered by the guidance.
- 3.3 Where development proposals do not align with either the principles or guidance set out in this document it is likely that we will seek to resist those proposals in the interest of the users of the highway network and its primary role in providing safe and effective transport for all. However, if the proposals are significantly out of line with the principles and guidance the Council may recommend a refusal.

Section DG2: Road layouts

- 3.4 This section sets out our design guidance for adoptable roads. You can find guidance on passenger transport, providing for pedestrians and cyclists, and providing for horse riders in sections DG5, DG6 and DG7 respectively.
- 3.5 We will continue to encourage developers to create layouts that are to an adoptable standard and that will be offered for adoption. We will not adopt developments of five or less dwellings.
- 3.6 For employment and commercial developments, we will expect road layouts serving developments of more than one building and with more than one occupier to meet our adoptable design guidance and be offered for adoption. However, you are encouraged to contact us to discuss adoption requirements for specific proposals. (See Section MC19 for employment and commercial developments served by private drives and areas.)
- 3.7 You can find advice on how to get your roads adopted under Section 38 of the Highways Act in Part 5 of this document.

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General Geometry and Safety Audit Requirements

Please see appendix D for additional information on safety audits

- 3.8 **External roads and other off-site highway works:** These are roads that provide a new link in the road network and serve a more general purpose than simply giving access to a development. Unless they fall outside the definition of a road (street) as set out in appendix L, you should design these in line with the appropriate parts of the Manual for Streets and our Specification and standard drawings. They should contain measures to control vehicle speeds and to limit the impact on the environment. We will require safety audits in all cases. We may be prepared to consider permitting direct frontage access from properties to such roads providing that they are subject to a 40mph speed limit and 85th percentile speeds are 40mph or less.
- 3.9 **Site access to external roads:** Unless the external road falls outside the definition of a road (street) as set out in appendix L, you should normally design these in line with the appropriate parts of the Manual for Streets and our specification and standard drawings. We will not normally accept mini-roundabouts unless they form part of a more comprehensive traffic-calming scheme that is either required to minimise the development's impacts or that has previously been identified. A mini- roundabout will not be acceptable where it is proposed simply because the necessary visibility for a priority junction cannot be achieved. We may be prepared to consider permitting direct frontage access from properties to the external road providing that they are subject to a 40mph speed limit and 85th percentile speeds are 40mph or less.
- 3.10 Site-specific requirements will depend on a number of factors including:
- location;
 - safety considerations;
 - traffic, pedestrian and cycle flows including mobility scooters/wheelchairs; and
 - passenger transport requirements.
- You should establish and agree our requirements with us in the early stages of preparing your development proposals. In all cases Road Safety Audits will be required for external roads.
- 3.11 **Internal development roads:** These are roads that serve only the development. You should normally design them in line with the sections below, which cover residential developments around 1000 dwellings and employment and commercial developments, and our Specification and standard drawings. We will consider the design of development roads for sites of around 1000 dwellings, or which are otherwise not covered by the following guidance, on a site-by-site basis.
- 3.12 We will not normally require safety audits of internal development roads unless the layout contains features which are not explicitly covered by this document.

Figure DG1 Examples of shared surfaces



3.13 Table DGF1 gives general geometry for internal residential roads. In general terms, a residential access road is a conventional cross-section road with separate provision for vehicles and pedestrians. On a residential access way user share a common surface.

Table DG1: General geometry of residential roads (internal)

	Major Residential access road	Residential access road	Residential access way
Type of use	Mainly vehicles (bus access is likely)	Mainly vehicles	Mainly pedestrians and cyclists Not normally acceptable for use of a bus route
Normal dwelling limits	1000 Normally no more than 400 from a single point of access ^(a)	400 Normally no more than 150 from a single point of access ^(a)	50 Normally no more than 25 from a single point of access ^(a)
Access to schools ^(b)	Yes ^(b)	Yes, but not as a cul-de-sac ^(b)	No ^(b)

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	Major Residential access road	Residential access road	Residential access way
85 th percentile design speed	20mph	20 mph	15mph
Shared surface	No	No	Yes ^(c)
Widths for two-way traffic. Note: Where a road is to be narrowed, to help control vehicle speeds, for example, the minimum <i>carriageway</i> width (kerb to kerb) = 3.7m. Minimum <i>lane</i> width at a restriction, such as pedestrian refuge in the middle of the road = 3.2m.	Carriageway width ^{(d)(f)} 6.75m	Carriageway width ^{(d)(f)} 4.8m up to 50 dwellings 5.5m 50 to 400 dwellings Except on a bus route where the carriageway should be a minimum of 6m wide (subject to tracking assessment) or on a road serving a school where the carriageway should be 6.75m wide in all cases.	Overall corridor width ^{(e)(f)} 7.5m
Centre-line radius	Defined by tracking ^(g)	Defined by tracking ^(g)	Defined by tracking ^(g)
Crossfall	1:40	1:40	1:40
Longitudinal gradient	Flexible surfacing minimum: 1:100 Block surfacing minimum: 1:80 In all cases maximum: 1:20 ^(h) In all cases, at junctions: not to exceed 1:30 for first 10m of the side road	Flexible surfacing minimum: 1:100 Block surfacing minimum: 1:80 In all cases maximum: 1:20 ^(h) In all cases, at junctions: not to exceed 1:30 for first 10m of the side road	Flexible surfacing minimum: 1:100 Block surfacing minimum: 1:80 In all cases maximum: 1:20 ^(h) In all cases, at junctions: not to exceed 1:30 for first 10m of the side road
Vertical curves	See paragraph 3.25	See paragraph 3.25	See paragraph 3.25
Visibility distance at junctions, bends and vertical crests	25m	25m	17m
Verges	Grassed verges minimum m wide, minimum area 10sqm. Hard paving otherwise.		
Steps	Not normally acceptable in areas to be adopted as public highway unless a suitable alternative ramp is provided for those unable to climb steps		

(a) We will consider developments in excess of the single-access limits on a site-by-site basis. See also paragraph 3.15.

(b) Particular care must be taken in the design of roads serving schools. Parking in the vicinity of schools, as children are dropped-off or collected, is a serious safety hazard and can cause traffic congestion.

For new residential developments, any need for a new school on the site must be established early on (see Part 2 para 2.10 onward). The school should be located to maximise opportunities:

- for children to walk and cycle to school;

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- to provide 'safe routes to school'; and
- to minimise the risk of on-street parking problems.

All of this will need to be considered as part of the transport assessment for the development and a school travel plan will be required.

Where a proposed development requires the expansion of an existing school, that is the construction of one or more new classrooms, the traffic impacts of the expansion must be considered early on and as part of any transport assessment required for the development. Measures will normally be required to provide 'safe routes to school' and minimise the risk of causing or making worse on-street parking problems.

(c) The Manual for Streets suggests that shared surfaces work well in short lengths or where they form cul-de-sacs, where traffic is less than 100 vehicles per hour, and where parking is controlled. Care must be taken in the design of shared-surface layouts to ensure that the development's whole design, including building type and layout, use of street furniture and so on, conveys to users the nature of the area. Motor vehicles should not dominate, and the layout should not simply appear to be a road without footways.

It is also important that any shared surface is designed for blind or partially sighted people and that they include an alternative means for visually impaired people to navigate by. As the Manual for Streets documents emphasise, we will expect you to consult with relevant representative groups and access officers in designing your proposals.

The type of surfacing materials will normally be a secondary feature in defining the nature of the area. It will not normally be acceptable simply to use a different material to convey the nature of an area to users. We will consider the surfacing material you propose for any shared-surface area with regard to the development's overall design, including proposed housing layouts.

(d) The carriageway width does not include any footways, verges and so on. We may be prepared to accept a narrower, single *carriageway* width of 3.7m between kerbs over short lengths as a speed-control feature. The minimum *lane* width of 3.2m applies only where there are limited restrictions, for example where a pedestrian refuge is provided in the middle of the road.

(e) The corridor width is the minimum space required to accommodate all likely road users and utility equipment (for example, gas, water, cable TV). It does not include any additional space for outward-opening windows, drainage downpipes and so on where dwellings front direct onto the highway. You should define vehicle paths within the corridor by a tracking assessment. See paragraph 3.24.

(f) Where a proposed building fronts directly on to the highway, that is, it has no front garden, it should be set back at least 0.5m behind the proposed highway boundary to allow for opening of windows, drainage downpipes, overhanging eaves and so on.

(g) See paragraph 3.21.

(h) Taking into account the needs of people with impaired mobility, we may be prepared to consider a relaxation on sites with particularly difficult topography. However, relaxations should not form the starting point of longitudinal design. The financial cost of cut/fill is not a material consideration when assessing the ability to achieve gradients to aid walking/cycling.

(i) See also paragraphs 3.26 and 3.27.

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3.14 Table DGF2 gives the general geometry for internal employment and commercial roads. In general terms, both major industrial access roads and the minor industrial roads are conventional cross-section roads with separated provision for vehicles and pedestrians, but their designs vary depending on likely levels of heavy-goods vehicles (HGVs).

Table DG2: General geometry of employment and commercial roads^(a)		
	Type of internal development road	
	Major industrial access road	Minor industrial access road
Planning use class	B2 to B8	B1 ^{(b) (c)}
Development limit	Normally no more than 8 hectares for a single point of access ^(d)	
85 th percentile design speed	30mph	25mph
Shared surface	No	
Widths for two-way traffic	Carriageway width: 7.3m	Carriageway width: 6m for offices 6.75m for other B1 uses
Centre-line radius	55m minimum	Defined by tracking ^(e)
Crossfall	1:40	
Longitudinal gradient	Minimum: 1:100 Maximum: 1:20 ^(f) At junctions: not to exceed 1:30 for first 10m of the side road	
Vertical curves	See paragraph 3.28	
Visibility distance at junctions, bends and vertical crests	70m ^(f)	45m ^(g)
Verges	Grassed verges minimum 1m wide, minimum area 10sqm. Hard paving otherwise.	
Steps	Not normally acceptable in areas to be adopted as public highway unless a suitable alternative ramp is provided for those unable to climb steps	

(a) Other use classes, for example shopping and leisure, will be considered on a site-by-site basis and depending on the likely numbers of HGVs.

(b) We will recommend planning conditions to restrict change of use from B1 to B2 - B8 developments unless the roads provided are to major industrial road standard – including construction specification – or the development layout provides for their future improvement at a developer's expense.

(c) Where a B1 development is large enough to generate significant numbers of HGVs, we may require a major industrial road. However, where a B2-B8 development is small enough to generate only a small number of HGVs, for example business starter units, we may be prepared to accept a minor industrial access road instead.

(d) We will consider developments in excess of the single access limits on a site-by-site basis. See also paragraph 3.15.

(e) See paragraph 3.21.

(f) Taking into account the needs of people with impaired mobility, we may be prepared

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to consider a relaxation to 1:12 on sites with particularly difficult topography.

⁽⁹⁾ See also paragraphs 3.26 and 3.27.

Well-connected street networks and emergency accesses

- 3.15 New residential streets should be designed to form part of a well-connected street network. Well-connected street networks have significant advantages:
- A shorter route can be used to cover a given area;
 - reversing may be avoided altogether;
 - they also minimise land-take by avoiding the need for wasteful turning areas at the ends of cul-de-sacs;
 - encourage more people to walk and cycle to local destinations, improving their health while reducing motor traffic, energy use and pollution;
 - more people on the streets leads to improved personal security and road safety – research shows that the presence of pedestrians on streets causes drivers to travel more slowly;
 - for utility companies – service provision and alternative service routes;
 - for highway and utility maintenance operations as traffic can be routed around a point closure if it is necessary to excavate the carriageway for maintenance.
- 3.16 As such developments will usually need at least two access points to the highway network. The number of external connections that a development provides depends on the nature of its surroundings. These access points should be to adoptable standards and available for public use.
- 3.17 However, cul-de-sacs may provide the best solution for developing awkward sites where the site is linear in nature, has difficult topography, boundary or other constraints and where through routes are not practical.
- 3.18 We will not normally accept emergency accesses because of:
- enforcement problems arising from their misuse;
 - difficulties encountered by the emergency services;
 - maintenance issues and vandalism of access-control equipment; and
 - general crime and anti-social behaviour problems.
- 3.19 However, where there are valid reasons why this cannot be achieved, and where the development proposal is otherwise acceptable to us, we may be prepared to consider an emergency access as long as the developer can demonstrate:
- highway safety is not compromised and the access is not likely be a source of crime or anti-social behaviour problems;
 - there are appropriate means of controlling its use;
 - you have fully consulted the emergency services and the proposals are acceptable to them (your consultations with the police should include both traffic management and the officers that deal with antisocial behaviour);
 - the access is designed to accommodate safely all vehicles likely to use it; and

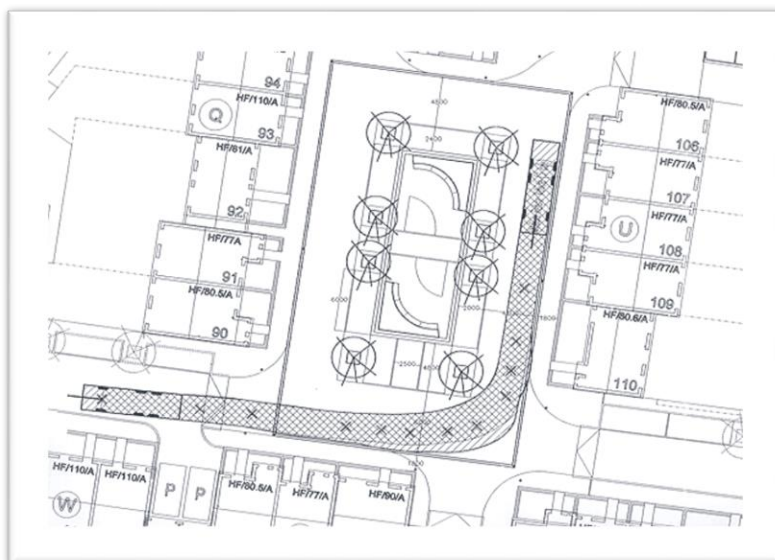
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- long-term maintenance responsibilities are clearly defined and secured.

3.20 Where suitable access arrangements cannot be achieved, we will advise refusal and refuse adoption of the road.

The design of residential road layout widths based on tracking

3.21 Tracking is providing the required width for vehicle movement within the overall width of the road. It can also be used to establish appropriate bend radii. Instead of taking the highway engineering requirements as the starting point for layout design, you can consider the arrangement of the buildings and the boundaries of the development first. You can lay out buildings to suit a particular form, with kerblines helping to define and emphasise spaces. The width between kerbs can vary. (You can find further information on how to use tracking in the 'Manual for Streets' documents, published by the Department for Transport (an example). Where tracking of large vehicles results in the use of the whole width of the carriageway to make manoeuvres on narrow roads it is important to ensure that forward visibility to bends is provided in accordance with Part 3 Table DG4 to enable this to be achieved safely. There should be no recourse to reducing the width of roads such that it is necessary for the drivers of the private motor car to make use of the whole width of the carriageway to make similar manoeuvres"



An example of tracking showing the swept path of a refuse vehicle.

Reproduced with kind permission of Jelson Ltd and Boreham Consulting Engineers.

- 3.22 You will then need to check the layout, including widths and bend radii, to make sure that the various types of vehicles you expect to visit and use the road layout can manoeuvre. This is normally likely to include a refuse lorry, fire tender and pantechicon (for example, a removal lorry) and a bus if the development will be served by public transport. You should do this using a computer software package to generate swept paths for particular types of vehicles and to superimpose them onto layout drawings.
- 3.23 The tracking assessments will need to take account of any planned or likely on-street parking (see Section DG12, particularly paragraph 3.136 onwards).
- 3.24 You should check the proposed layout and get our agreement before submitting a planning application. The layout will also need to satisfy other relevant design guidance for the road type to achieve the design speed and to create a safe environment for all road users, including pedestrians and cyclists.

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Vertical curves

3.25 Where changes in gradient occur, vertical curves will be required at sags and crests. Except where indicated in the note to Table DGF3, curve lengths should normally be either:

- the sum $K \times A$, where K is given in Table DG3 and A is the algebraic difference of the gradients expressed as a percentage; or
- the 'minimum length for appearance' given in Table DGF3 whichever is higher.

Example calculation of length of vertical curve

For 20mph design speed $k = 3$ (from Table DFG3)

Algebraic difference of gradients = $+3.0 - (-5.0)$ expressed as a percentage = 8.0

Curve length = 3×8

= 24 m

(minimum length for appearance = 20m (from table DFG3))

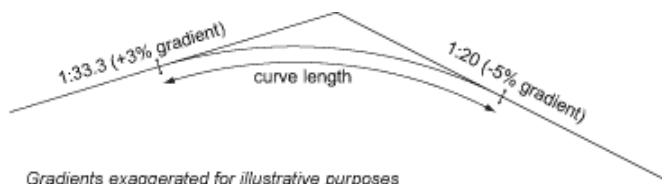


Table DG3: Vertical curves for all internal roads^{(a) (b)}

85 th percentile design speed (mph)	Minimum length of vertical curve ^(c)	
	K	Minimum length for appearance (metres) ^(d)
30 ^(e)	6.5	30
25 ^(e)	4	25
20	3	20
15	2	20

- (a) You should hold early discussions with us for large, flat sites to ensure that the vertical alignment is acceptable. In some cases, it may be necessary to provide combined kerb and drainage units to ensure both an acceptable alignment and drainage of the highway.
- (b) For crests it may be necessary to increase the length of vertical curve derived to achieve the visibility distance as set out in Table DGF4
- (c) We may accept shorter curve lengths where there are exceptional difficulties in achieving the length normally required.
- (d) To avoid stretches of road where water gathers, do not apply the minimum length where A is less than five on any sag curve that results in a low point on the road.
- (e) Speeds on new residential development roads should normally be restricted to 20mph or less.

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Visibility splays

- 3.26 For proposed internal development roads, you should normally base visibility splay on an assessment of likely 85th percentile vehicle speeds. For existing roads, you should base it on measured vehicle speeds. We will normally require you to carry out radar surveys to measure existing speeds and establish the 85th percentile.
- 3.27 While taking into account the design speeds in Tables DGF1 and DGF2, we will assess visibility requirements based on likely vehicle speeds within a proposed development. Where we are satisfied that speeds are, in practice, likely to be lower than the design speeds, we will normally be prepared to consider correspondingly shorter splays. The reverse is also true - if speeds are likely to be higher, the splays will need to be correspondingly greater in length.

Assessed likely vehicle 85 th percentile vehicle speed (mph)	Measured 85 th percentile vehicle speed (mph)	Visibility distance at junctions, bends and vertical crests (m) ^(a) Light vehicles	Visibility distance at junctions, bends and vertical crests (m) ^(f) HGV
15	11 to 15	17 ^(c)	19 ^(c)
20	16 to 20	25 ^(c)	27 ^(c)
Speeds on new residential development roads should normally be controlled to 20mph or less ^(b)	21 to 25	33 ^(c)	36 ^(c)
	26 to 30	43 ^(c)	47 ^(c)
	31 to 35	54 ^(c)	59 ^(c)
	36 to 40	65 ^(c)	73 ^(c)
	41 to 44	120 ^(d)	120 ^(d)
	45 to 53	160 ^(d)	160 ^(d)
	54 to 62	215 ^(d)	215 ^(d)
	63 to 75	295 ^(d)	295 ^(d)

- (a) See Figures DG2a to DG2c below for guidance on constructing splays.
- (b) Where speed is assessed to be over 20mph, splay provision will normally be based on the appropriate 'measured 85th percentile vehicle speed' distance.
- (c) Based on the Manual for Streets documents, 'adjusted for bonnet length'
- (d) Based on Design Manual for Roads and Bridges.
- (e) Use figures for HGV and buses if these vehicles make up more 5% of actual or predicted total traffic flow
- (f) We will accept calculated values for actual agreed 85th percentile speeds

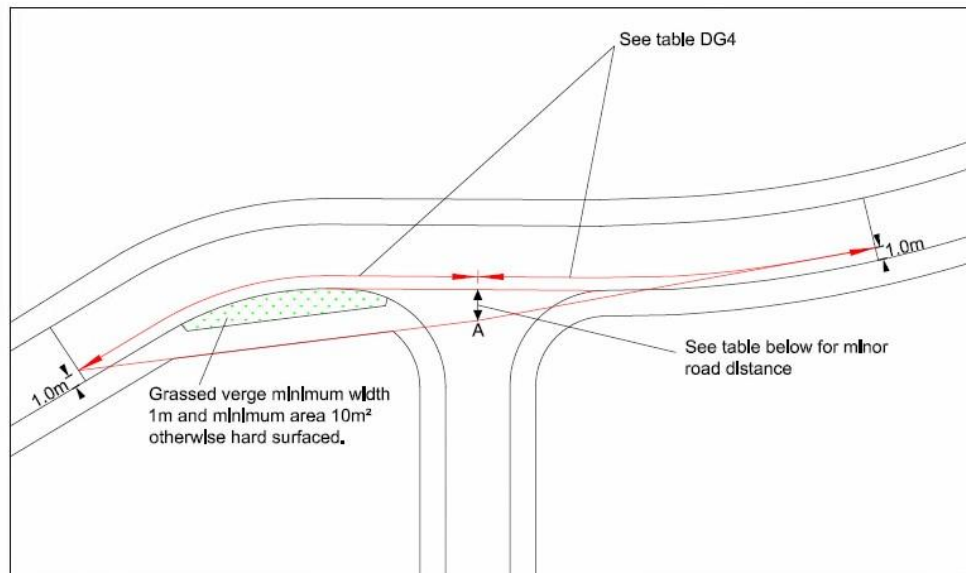
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Construction of visibility splays

For all horizontal visibility splays, where a footway, cycleway or similar is provided, the rear of the footway and so on should coincide with (match) the rear edge of the visibility splay.

A more accurate assessment of visibility splay is made by measuring to the nearside edge of the vehicle track. The measurement is taken from the point where this line intersects the centreline of the minor arm unless there is a splitter island in the minor arm.

Figure DG2a Junctions

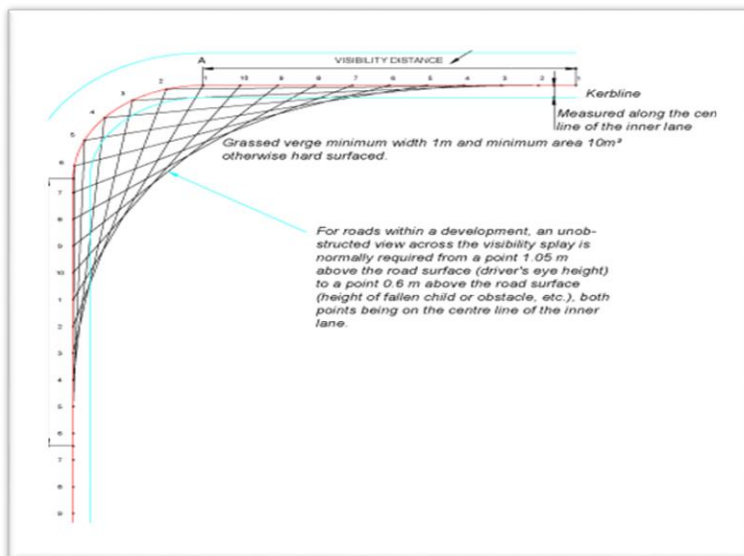


		Main Road				
		Road (street) as defined at appendix L	Residential access road	Residential access way	Major industrial access road	Minor industrial access road
Side Road	Residential access road	2.4m	2.4m	2.4m		
	Residential access way	2.4m	2.4m	2.4m		
Major industrial road		4.5m			4.5m	4.5m
Minor industrial road		4.5m – 2.4m			4.5m – 2.4m	4.5m – 2.4m

* Set back will depend on scale and nature of proposed development

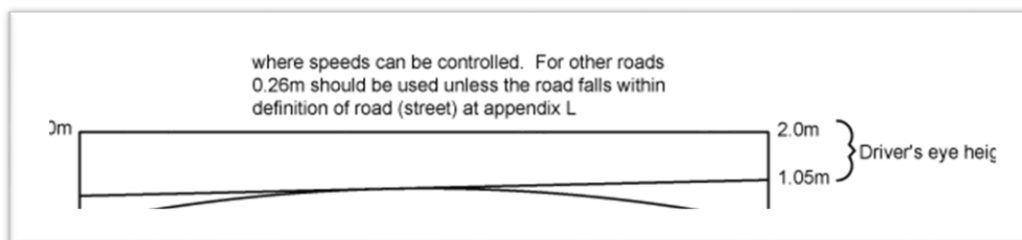
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Figure DG2b Bends



Note: For all road types within a development, visibility (at junctions, bends or crests) in the vertical plane should normally be measured from a driver's eye-height of no less than 1.05m above the road surface to a point no less than 0.6m above the road surface. This is as set out in the Manual for Streets documents. On roads outside of the development, for example at the site access, the visibility should normally be measured from an eye-height of not less than 1.05m to a point not less than 0.26m, in line with the Design Manual for Roads and Bridges. However, if they fall within the definition of a road (street) as defined at appendix L, visibility can normally be measured as if the road lies **within** a development.





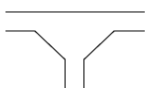





















Figure DG2c Crests in road (brow of hill)



Junction design within a development

3.28 Basic junction forms should be determined at the concept layout (master planning) stage with the more detailed proposals developed as the development proposal evolves. Table DG5 and the accompanying illustrations highlight broad junction types and the corner radii that should normally be provided within developments.

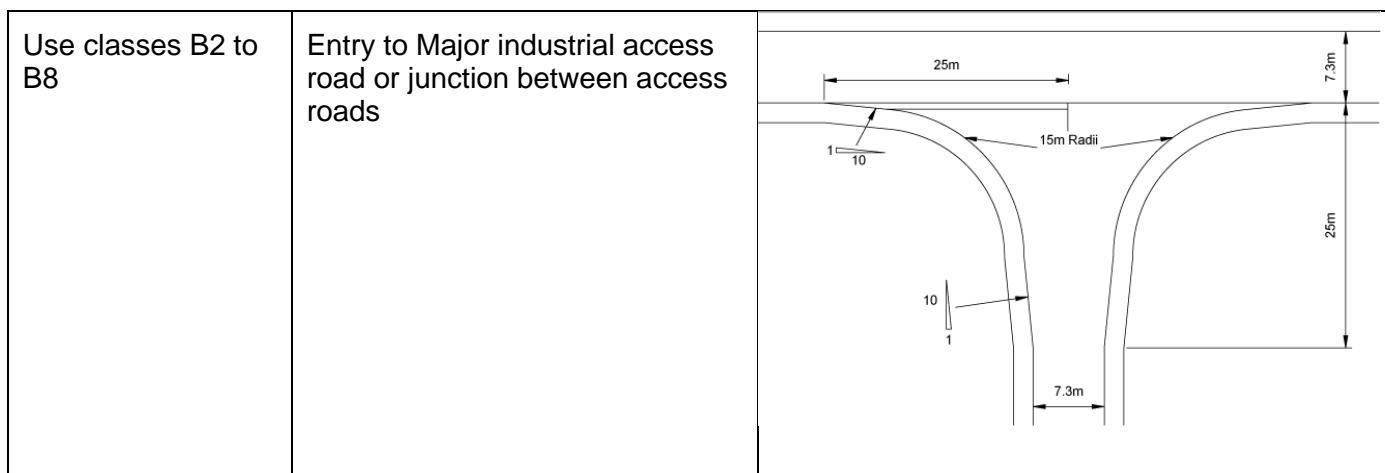
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Nodal form	T	Y	Cross / Staggered	Multi armed	Square	Circus	Crescent
Regular  Irregular	 	   	    	  	    	 	   

This diagram is based upon Figure 7.9 of the Manual for Streets documents. The Manual for Streets is copyright of the Department for Transport and Department of Communities and Local Government.

Development type ^(c)	Road type ^(d)	Corner radii (m) ^{(e) (f) (g)}
Residential	Entry to a Residential access way or road or junction between access ways and roads	6m
Industrial and commercial		
Use class B1 offices	Entry to Minor industrial access road or junction between access roads	6m
Other B1 uses	Entry to Minor industrial access road or junction between access roads	10m

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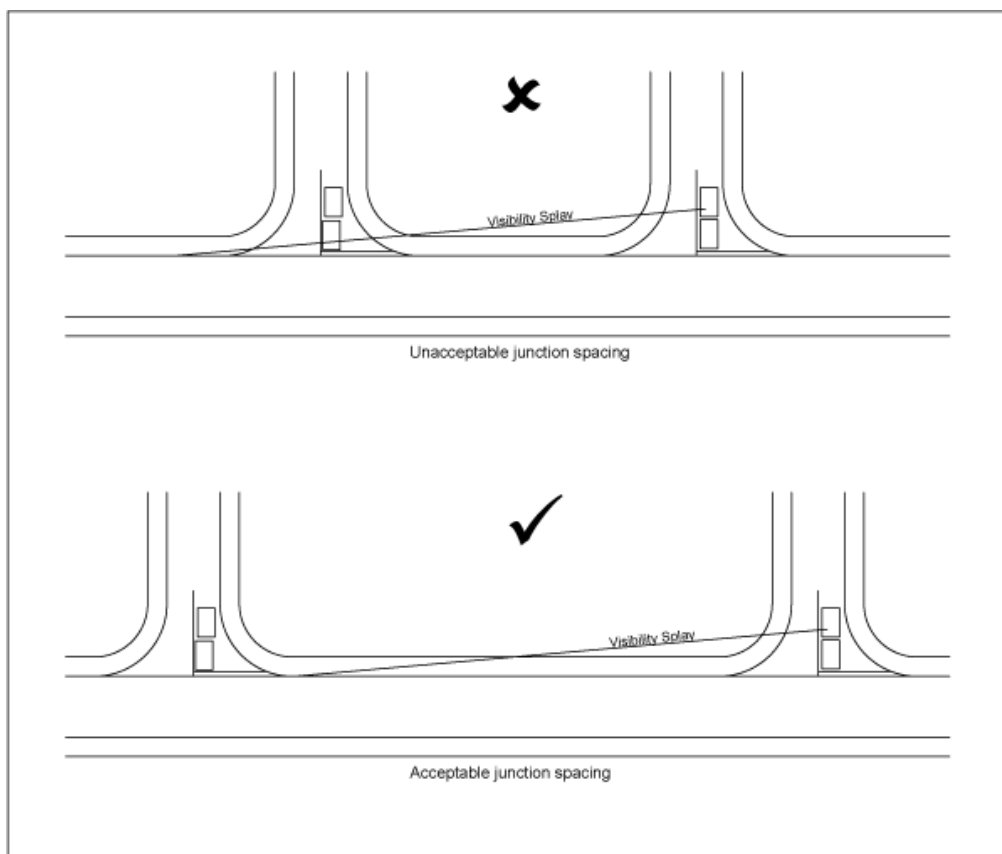


- (a) See paragraph 3.9 for site access junctions.
- (b) See Section DG8 for details on lining and signing.
- (c) Development types not listed will be considered on a site-by-site basis.
- (d) For further details, please paragraph 3.11 onwards.
- (e) Radii based on road widths set out in Table DGF1 and Table DG2, assuming that roads meet at an angle of 90 degrees. For other circumstances (including any proposals for tighter radii), you will be required to provide computer tracking assessments (see paragraph 3.21) of your proposed layout.
- (f) Other factors will also be taken into account in considering your junction proposals. This includes the likelihood of on-street parking problems in the vicinity of the junction and whether or not the roads are likely to form part of a bus route.
- (g) Where a corner radius is less than 7.5m, footway strengthening will be needed. Please see Part 4 paragraph 4.89.

Junction spacing within a development

- 3.29 You should normally avoid priority-controlled ('Give way') crossroads. When a crossroads cannot be avoided, you should provide an appropriate form of control such as a roundabout. Mini-roundabouts will not normally be acceptable to provide access to a development unless they form part of a more comprehensive traffic-calming scheme that is either required to reduce the development's impacts or that has previously been identified.)
- 3.30 You should space road junctions on the same side of a road so that a vehicle waiting to enter the main road at one does not interfere with visibility for a vehicle waiting at another.

Figure DG3 Junction spacing



Private-access restrictions

3.31 There will normally be no accesses for vehicles:

- within the vicinity of the junction;
- on to the corners (radii) of the junction;
- at bus stops or lay-bys;
- close to a pedestrian or cycle refuge;
- close to a traffic-calming feature (accesses should not be sited on the ramp of a road hump or speed table due to the risk of a vehicle grounding as it manoeuvres into or out of the access); and
- close to street furniture.

3.32 Elsewhere, we will normally accept accesses as long as they meet safety considerations and comply with the guidance on the design of private accesses and areas set out in Sections DG17 and DG18.

Widening on bends

3.33 On residential roads serving more than 25 dwellings, carriageways should normally be widened at bends that curve through more than 10 degrees.

Table DG6: Residential roads – widening on bends						
Centre-line radius (m)	20	30	40	50	60	80
Minimum widening	0.60	0.40	0.35	0.25	0.20	0.15

3.34 Bends should be widened in industrial and commercial developments.

Table DG7: Industrial and commercial roads – widening on bends			
Centre line radius (m)	55 to 74	75 to 89	90 to 150
Minimum widening	1.2	0.7	0.6

3.35 For any proposals not conforming to the figures in the above table, you will need to produce computerised vehicle-path assessments to show that the proposed layout can accommodate appropriate vehicles without danger to other road users, including pedestrians and cyclists.

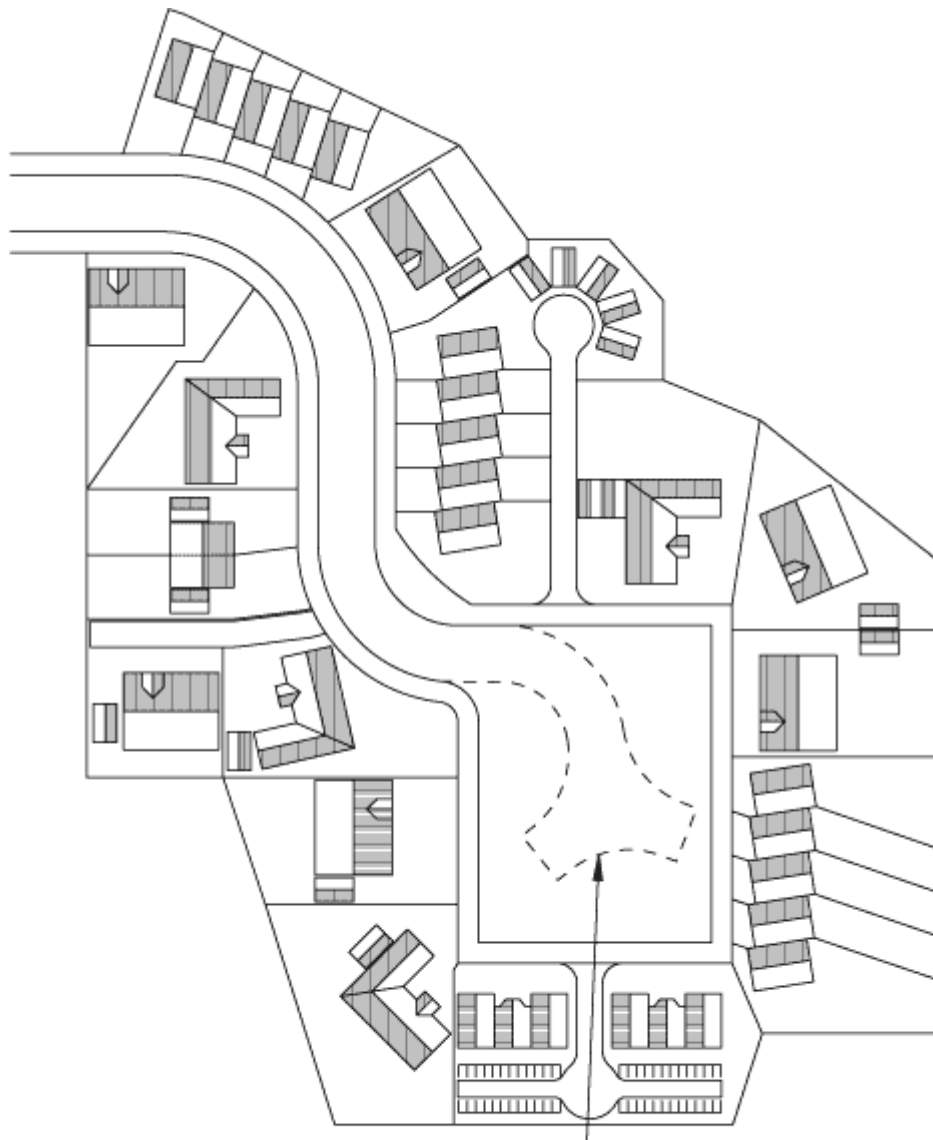
Turning heads

- 3.36 A turning head should normally be provided at the end of all cul-de-sacs or wherever vehicles would otherwise have to reverse over long distances – normally anything over 25m, in line with BS5906:2005. You should also provide turning heads where turning vehicles might damage adjacent verges or footways. Figures DG4a to DG4c shows minimum turning dimensions and areas. It may be necessary to provide tracking details for turning heads to ensure that a specified Waste/Recycling vehicle can negotiate a turning area satisfactorily. Refuse collection vehicle size is determined by the waste collection authority, you will need to contact the District/Boroughs to find out what those requirements are.
- 3.37 You should give careful consideration to the design of the development surrounding the turning head to make sure that its use is not reduced by on-street parking. Where on-street parking is likely to cause problems, we will normally expect you to provide measures to control it (see Section DG13, in particular paragraphs 3.166 onwards).
- 3.38 We will consider larger areas, such as residential squares, which provide the minimum turning dimensions as long as their use as a turning head would not be affected by on-street parking. You would also be required to provide clear details of who is responsible for maintenance. Where it is intended that we adopt any extra areas over the normal minimum, we may require you to pay commuted sums for future maintenance (see Part 4 Section MC18).

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Turning heads

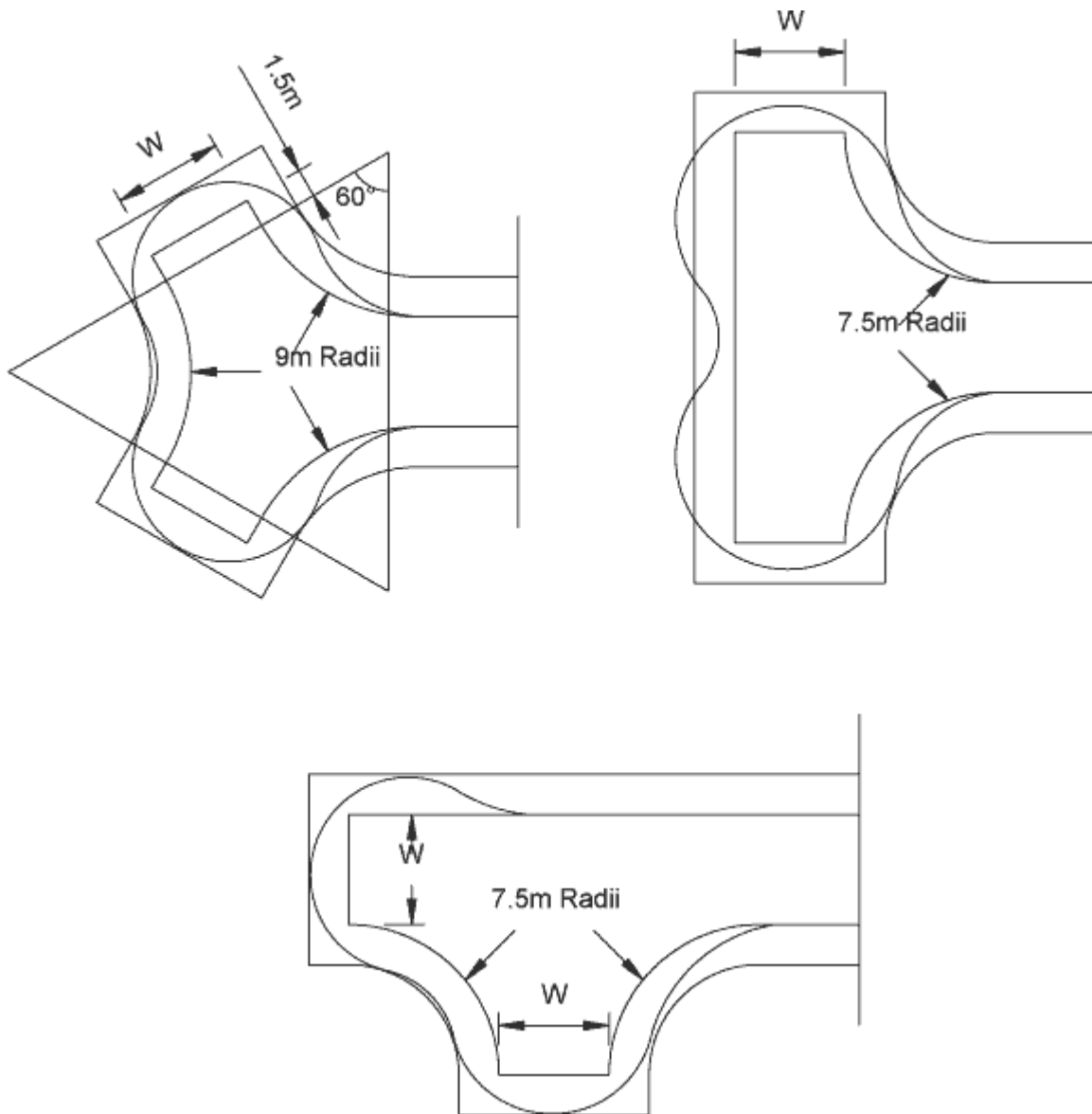
Figure DG4a Example of a turning head within a 'square'



This is an example of a highway square which forms the end of a road and a turning area. The area must be proven through tracking to allow turning. The edge of any turning area need not be demarcated on site.

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Figure DG4b Turning heads for use on residential access roads and minor industrial access roads serving offices

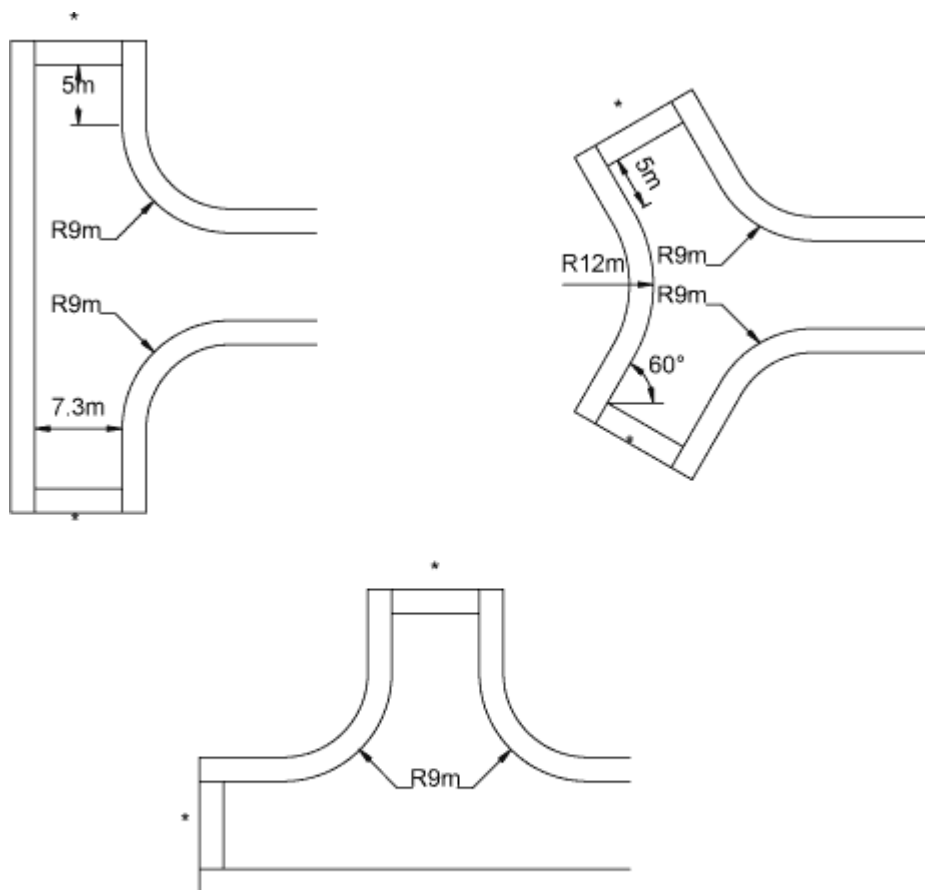


W = 4.8m up to 50 dwellings

W = 5.5m from 50 - 400 dwellings

W = 6m for B1 use class office developments

Figure DG4c Turning heads for use on industrial/commercial estate roads



* Depending upon the type of vehicles likely to use the road, a footway may be required around the end of the turning head.

Materials and construction

- 3.39 Please refer to Part 4. The standard construction requirements and materials set-out in this Part are based on LCC standards and advice used in general for constructing and maintaining highways throughout Leicestershire. They should normally be applied to **all** highway works and have been chosen to make sure the highways function safely and to make sure that they can be maintained in the most cost-effective way. To achieve these ends, we have considered the principles of quality, durability, maintainability and sustainability.

Adopting new roads

- 3.40 We will normally adopt a new road where:
- it serves six or more dwellings or multiple-occupation industrial or commercial development;
 - **all** highway works have been designed and completed to our satisfaction;
 - an agreement under S104 of the Water Industry Act has been signed with the relevant water company for the road's drainage to be adopted, or alternatively we are satisfied to adopt the drainage; and
 - the development served by the road is acceptable in all other highways and transportation respects, for example in terms of parking provision.
- 3.41 Please see Part 5 for details of adopting roads under a Section 38 agreement of the Highways Act. In this Part, Section DG17 gives guidance on the layout of private roads and areas in residential developments and DG18 gives guidance on the layout of industrial and commercial developments.
- 3.42 In some cases, commuted sums may be payable. For example this will normally be for:
- additional areas exceeding usual highway design standards and which are not required for the safe functioning of the highway;
 - materials outside our usual Specification;
 - non-usual or additional street furniture;
 - landscaping within the proposed highway, including trees; and
 - sustainable drainage systems (SUDS), for example, flow-attenuation devices swales and storage areas for highway drainage.

Note:

Where you are proposing SUDS, you must hold discussions with all relevant parties at an early stage (and certainly before any planning application) to agree ownership and responsibility for the facility.

This is not an exhaustive list, and there are other occasions described throughout this document where we require the payment of commuted sums, for example vertical traffic calming.

- 3.43 Please refer to Part 4 for further details of where commuted sums will normally be payable and for details of how they are calculated.

Section DG3: Mixed-use developments

- 3.44 Wherever possible, in the interests of road safety and to reduce environmental impacts, commercial and employment developments that generate larger goods vehicles should be kept separate from residential areas. You should design layouts so this type of commercial and employment traffic does not need to use residential roads. Similarly, Home Zones cannot be used to access these developments.
- 3.45 To support sustainable development, we may accept mixed-use developments that include small developments that generate very few goods vehicles, such as offices or a shop, particularly in or close to town centres.
- 3.46 Where a mixture of residential and commercial traffic is likely to use a road, the design elements, including materials and construction, should be based on the largest vehicles likely to use any particular section of the road.
- 3.47 We will normally adopt road layouts in mixed developments subject to the requirements in paragraph 3.40 onwards.

Section DG4: Speed control

Internal roads

- 3.48 Vehicle speeds within new developments should normally be controlled through the design and layout of the roads and the locations of buildings and not normally by using traffic-calming features (particularly vertical features such as road humps).
- 3.49 Where there are valid reasons why vehicle speeds cannot be controlled through site layout, and traffic calming measures are required, you should consider horizontal measures first and you should use vertical measures only as a last resort. Some examples of measures are shown in Figures DG5a to DG5f. Any traffic calming should normally be in accordance with advice contained in Department for Transport Traffic Advisory Leaflets as listed in Part 9.
- 3.50 Take particular care over choosing any type of traffic-calming measure on a proposed bus route (see Section DG5, in particular paragraphs 3.83 onwards).
- 3.51 You must take particular care on key routes that are used or are likely to be used by the emergency services. While certain types of traffic calming (particularly vertical measures such as road humps) can have potential road safety benefits, they can also adversely affect the response times of emergency vehicles.

85 th percentile design speed (mph)	Maximum distance ^(b) (metres)
30	150
25	100
20	60
15	40

^(a) This is the maximum distance between junctions, 90-degree bends or other speed control feature

^(b) Distance between curves is measured between the tangent points.

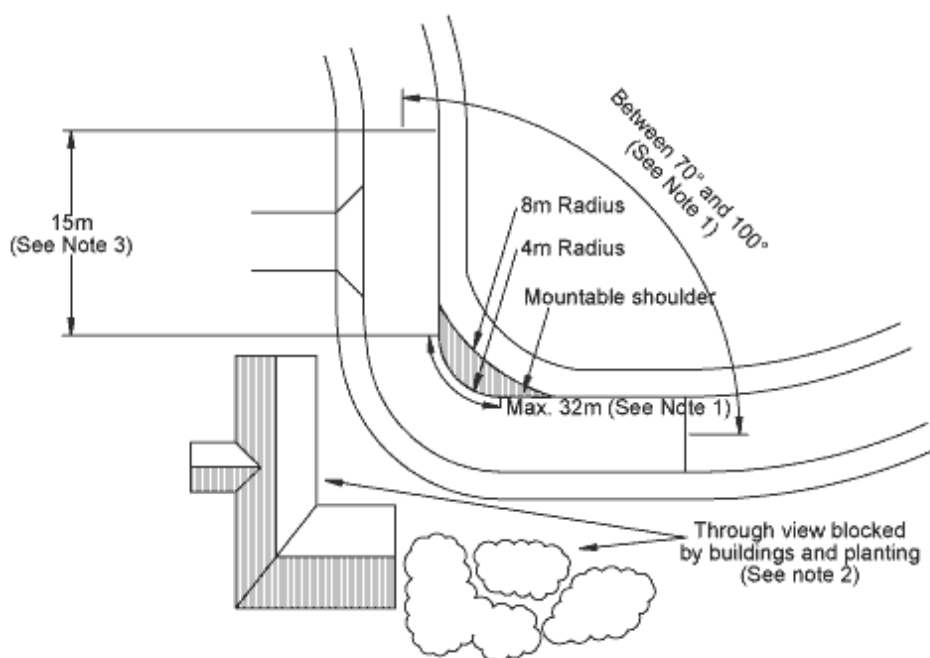
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- 3.52 Where any form of vertical calming feature is proposed, you should not site it within 25m of the edge of a structure, for example, a bridge or culvert. You should also site such features clear of private accesses and driveways to avoid problems of vehicles 'grounding' as they turn into or out of the accesses or drives.
- 3.53 We will be prepared to consider other methods of vehicle speed control in the light of practical experience of their effectiveness and any further research. However, because of problems with noise and vibration, we will not normally accept 'rumble strips'.

Examples of speed control features

Note: Please see our standard drawings on the LHDG web page for junction tables, speed cushions and road humps.

Figure DG5a Speed control bend (please also see Part 4, paragraph 4.84)

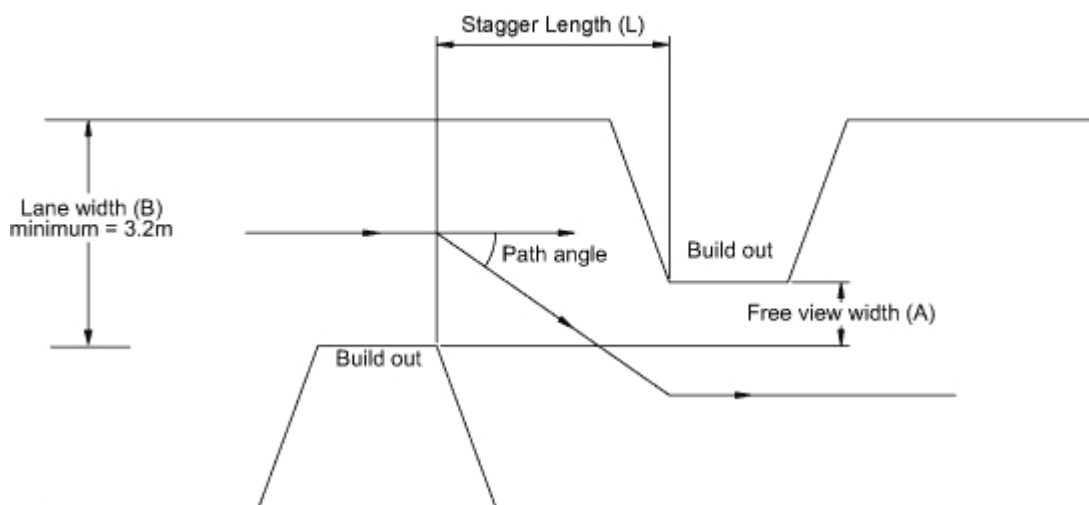


Notes:

- 1. Change in direction to be between 70° and 100° over a maximum distance of 32m measured along the inside kerb.
- 2. The through view beyond the bend on to the approach should be blocked by buildings, walls or dense planting etc.
- 3. A 15m separating straight is required after the speed control bend if the road curves in a reverse direction
- 4. There should be no vehicular accesses over the length of the forward visibility curve

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Figure DG5b Chicane

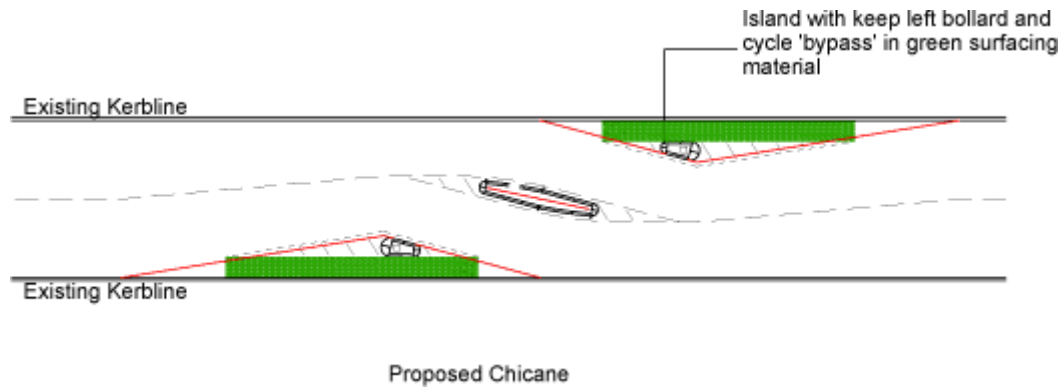


- Free View Width (A)** - The width of the central gap between build outs on opposite sides
- Lane Width (B)** - The average width between the build out and the opposite kerb
- Stagger Length (L)** - The length between the start of the stagger on the offside and the end of the stagger on the nearside
- Path Angle** - The angle through which the traffic lane is displaced. This should be minimum of 20° for design speeds of 15mph and a minimum of 15° for design speeds of 25mph

Stagger length and car speeds				Minimum dimensions of stagger length for larger vehicles			
Lane width 'B' (metres)	Free view width 'A' (metre)	Stagger length 'L' to achieve the required vehicle speed in chicane 15 mph	Stagger length 'L' to achieve the required vehicle speed in chicane 25 mph		Stagger length 'L' (m) needed for a free view width of 0.0m	Stagger length 'L' (m) needed for a free view width of 0.0m	Stagger length 'L' (m) needed for a free view width of 0.0m
3.2	+1.0 0.0 -1.0	6m 9m 12m	14m 18m -	Lane width	3.2m	3.5m	4.0m
3.5	+1.0 0.0 -1.0	- 9m 11m	11m 15m 19m	Artic. lorry	20	15	11
4.0	+1.0 0.0 -1.0	- - -	9m 12m 15m	Rigid lorry	12	9	7
				Single decker bus	13	11	9

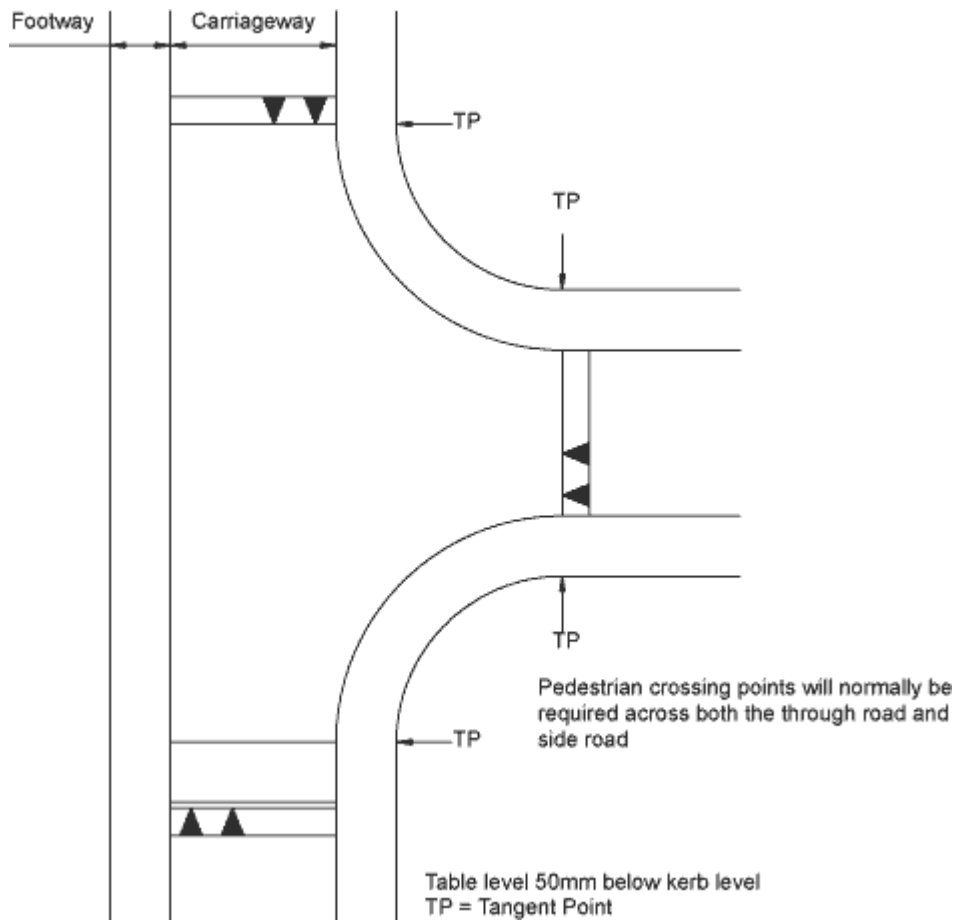
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Figure DG5c Example of chicane including cycle 'bypass'



Note: Length of cycle lane to be agreed

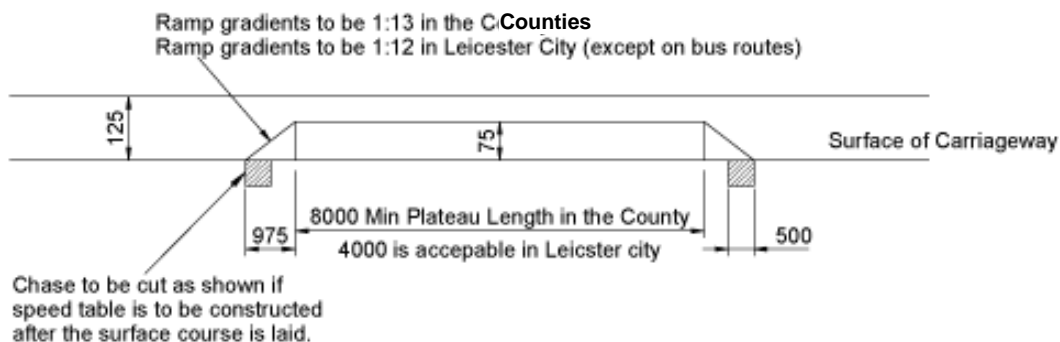
Figure DG5d Junction table (please also see Part 4, paragraph 4.79)



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Figure DG5e Cross section of speed tables with alterations for steep roads shown in lower diagram (please also see Part 4, Paragraph 4.79)

All construction joints to be saw cut and painted with bitumen in accordance with BS594 part 2



Vertical scale exaggerated for illustrative purposes

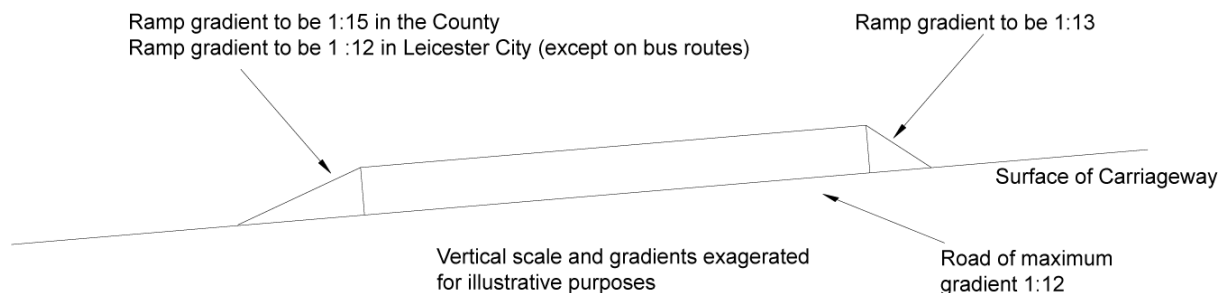
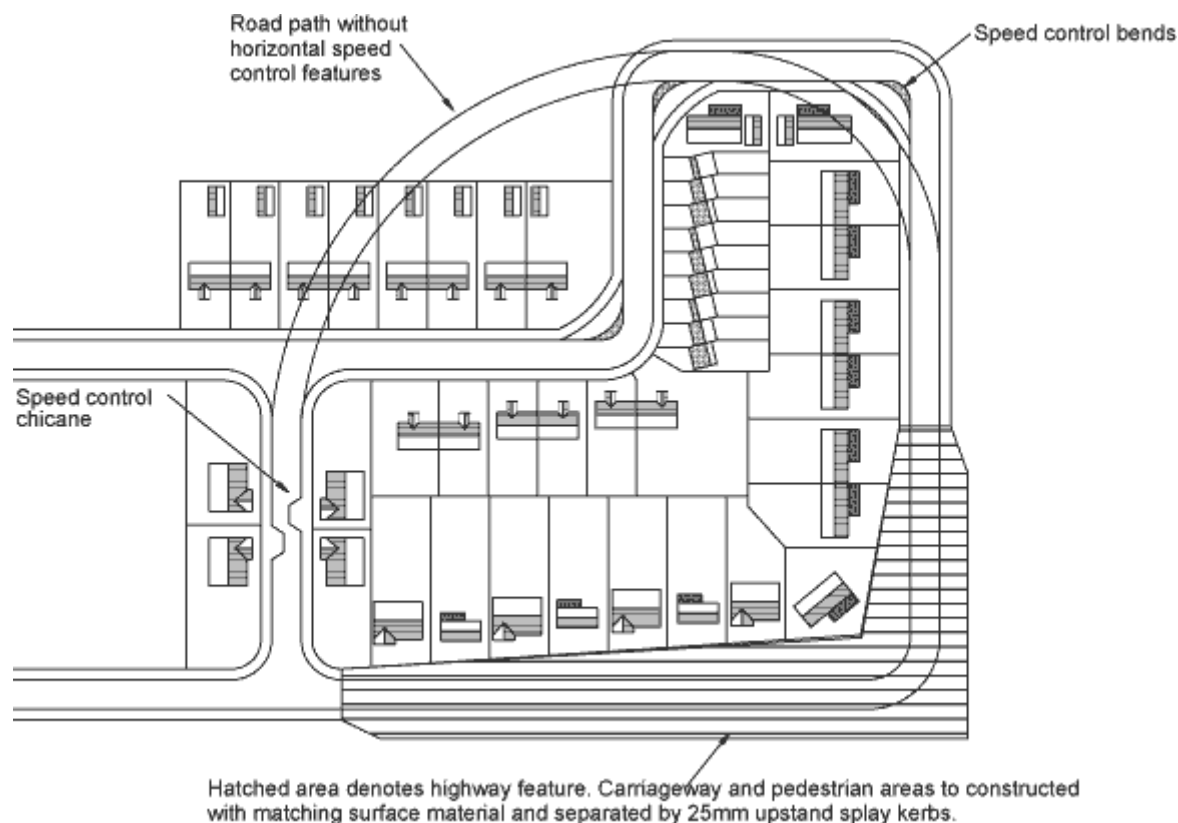


Figure DG5f Example of vehicle speed control by development layout



Note: Please see our standard drawings for junction tables, speed cushions and road humps.

The existing external road network

- 3.54 Where a development requires speed-control measures on the existing external highway network, for example, to help minimise its impacts or to achieve safe site access, there will have to be an additional public consultation separate from the planning process including advertising of features and where appropriate a different speed limit. These separate consultations are required even where the development has received planning permission. Because of problems with noise and vibration, we will not normally accept 'rumble strips'.
- 3.55 These consultations can often be an extensive and lengthy process, particularly where statutory procedures are involved. You will normally be required to fund all costs associated with these consultations.
- 3.56 We will normally seek to secure the speed-control measures and the funding of any associated costs through an appropriate legal agreement.
- 3.57 You should get early advice on the likely timescale and procedures involved for your specific proposals. Take this information into account when you draw up the programme for your proposed development and in any negotiations that you may have with the landowner of the development site.

Speed cushions are normally preferred for residential distributor roads. However, if road humps are the only solution these should be a maximum of 65mm in height (possibly 75mm subject to agreement) and over 7m in length (only on bus routes). All traffic calming installed on the existing road network as part of a s278 agreement should include a speed reduction feature prior to any vertical feature where the 85th percentile approach speed is greater than 30mph.

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Materials and construction

3.58 Please refer to Part 4.

Section DG5: Public transport

Introduction

- 3.59 The National Planning Policy Framework places an emphasis on the delivery of sustainable development.
- 3.60 Particularly if your development requires any form of transport assessment (see Part 2 Table PDP1), you should seek early advice from us and bus operators on:
- existing bus services in the area, and any proposals to upgrade services or facilities, for example, introducing Real Time Passenger Information System (RTPI) (A system which provides waiting passengers with details of when the upcoming departures from that stop and the route number and the route number).
 - how best to serve the proposed development, for example, how appropriate would it be to:
 - operate a bus service through the development; or
 - enhance existing services adjacent to the development and provide improved footway links to the bus stops;
 - where a service is to operate through the development, how best to plan a route and where best to locate bus stops and any lay-bys to encourage maximum use of the service; and
- 3.61 what other measures might be required to improve public transport provision, for example, more frequent services or improvements to existing bus stops. You should discuss these issues and agree the general approach as soon as possible as the outcomes are likely to have a bearing on:
- the development's layout;
 - the transport assessment;
 - any travel plan;
 - any likely highway mitigation works; and
 - parking provision.
- 3.62 Additionally, where a development requires a concept proposal (see Part 2 paragraph 2.17), you should clearly identify and detail any agreed public transport facilities and routes.

Bus services

- 3.63 Where you are proposing public transport as a sustainable alternative to using cars, the service must realistically be capable of delivering a shift away from the car. To achieve any significant shift, it is likely that the service will have to be more frequent than once an hour during the day, Monday to Saturday, with an evening and Sunday service for larger developments.
- 3.64 We will consider developments on a site-by-site basis. We will assess any estimates for likely levels of public transport use included in any transport assessments or draft travel plans, against existing or proposed bus routes, vehicle capacities and timetables. We will need to be satisfied that a public transport service can be provided that is realistically capable of achieving the proposed level of use by the

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development's occupants.

- 3.65 We will also consider any phasing in of services, particularly for larger developments, on a site-by-site basis. Issues that will need to be discussed and agreed include:
- the initial service provision to a development site, for example, taxibuses and demand-responsive transport (services that operate in response to specific requests from residents) to serve the first occupiers of new residential developments;
 - at what stage the growing numbers of houses, employees and shoppers will trigger an increase in the capacity and frequency of services;
 - the need for priming initial services by using subsidised or free bus passes, residents' travel packs and so on; and
 - if and when a new service might become self-funding.
- 3.66 Through the planning process we will normally recommend to planning authorities that developers fund public transport services through a Section 106 agreement which, among other things, specifies the level of support which must be provided to the service and over what time period. While we will seek to work with you to reach a suitable agreement, we will resist (for example by recommending refusal of any planning application) development proposals that do not meet the policies and objectives set out in this document, (see Part 1, paragraph 1.22 onwards).

Pedestrian access to bus routes

- 3.67 Normally walking distances to bus stops in urban areas should be a maximum of 400m and desirably no more than 250m. In rural areas the walking distance should not normally be more than 800m.
- 3.68 You should design pedestrian routes to bus stops to be as direct, convenient and safe as possible to encourage use of passenger transport you should design the routes in line with principles set out in paragraph 3.88.

They should:

- enjoy good natural observation from neighbouring buildings;
- be well lit; and
- be carefully designed to minimise opportunities for crime.

You should place bus stops in employment or commercial areas near building entrances and avoid locations where passing traffic speeds are high. In rural areas there should always be at least a footway from any proposed development to the nearest bus stop.

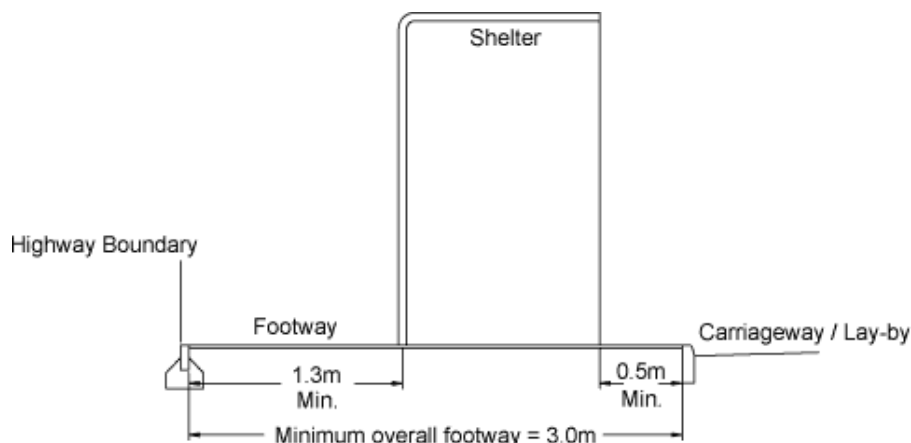
- 3.69 Where there is a footway on the opposite side of the road, a pedestrian crossing point should normally be provided next to a bus stop and designed in line with the appropriate standard drawing. The crossing point should be located as close as is possible to the stop, bearing in mind safety considerations.

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Bus stop location and design

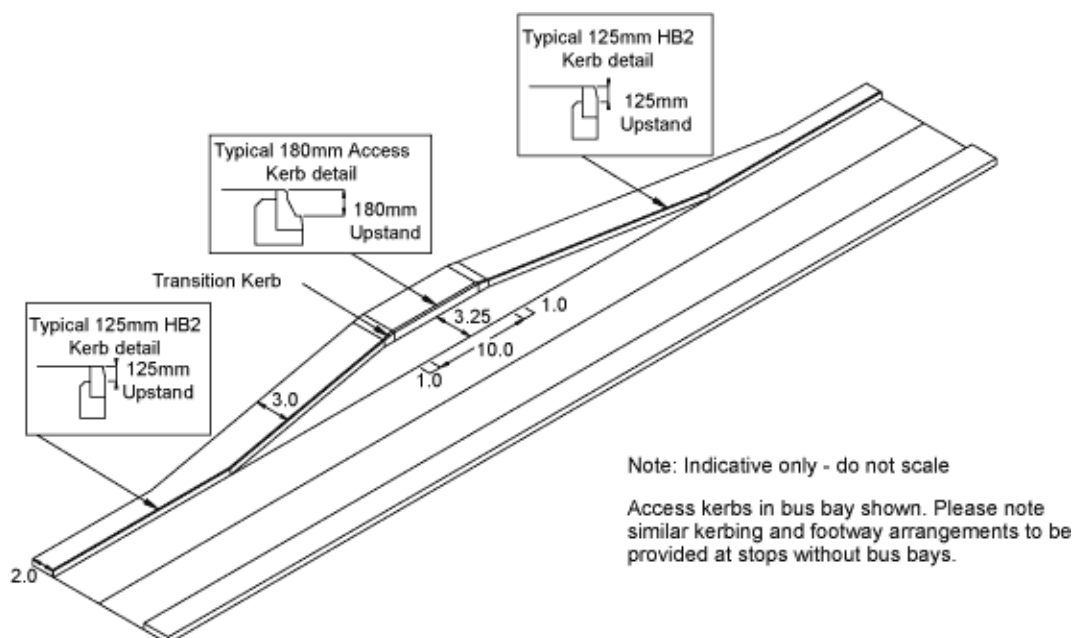
- 3.70 You should think carefully about the proposed layout of the development in the immediate vicinity of a bus stop to:
- make sure bus drivers and passengers waiting at the stop have ample time to see each other;
 - make sure vehicles overtaking a stationary bus have satisfactory forward visibility;
 - make sure bus stop pairs are staggered and not sited directly opposite each other;
 - prevent parked vehicles blocking bus stops;
 - avoid safety conflicts with road junctions, pedestrian or cycle crossings and so on;
 - avoid interference with accesses to properties;
 - make sure there is satisfactory drainage where raised kerbing is installed (see paragraph 3.74);
 - minimise risks to personal safety and opportunities for crime, in line with principles similar to those set out in paragraph 3.88; and
 - protect bus stops from obstruction.
- 3.71 You should not site bus stops within 30m of vertical traffic-calming features (including domed mini roundabouts). This is to minimise the risk of passengers waiting to get off the bus being thrown about the inside of the bus, and to allow boarding passengers time to sit down.
- 3.72 To erect a new bus stop or relocate an existing bus stop on an existing public highway you need to get agreement from:
- local highway authority;
 - the police;
 - the local parish council (if appropriate) / local ward councillors; and
 - bus operators.
- 3.73 The minimum footway width at a bus stop should normally be 3m. Where a shelter is to be provided (see paragraph 3.77), there should be at least 0.5m clearance between any part of the shelter and the edge of the carriageway. There should be a clear footway of at least 1.3m between the shelter and the rear edge of the footway (both for cantilever-style shelters where the roof extends beyond the support and enclosed shelters). Where you cannot achieve this, but there are no alternative locations to site the shelter, then we will consider site-specific shelter designs.

Figure DG6 Bus shelter siting



- 3.74 Accessible raised kerbing to a height of 180mm will be required at all stops. The length of raised kerbing should normally be 6m in the county (plus 1m transition kerbs at either end), with a minimum run of 3m (plus transition kerbs). The stop should be located and laid out so a bus can stop parallel to and close to the raised kerbing.
- 3.75 At sites with difficult gradients, access kerbs with an upstand of 160 mm shall be considered.
- 3.76 Where raised access kerbs are to be provided at a particular bus stop, access kerbs should also be provided at the 'opposite' stop.

Figure DG7 Raised kerbing at bus stops

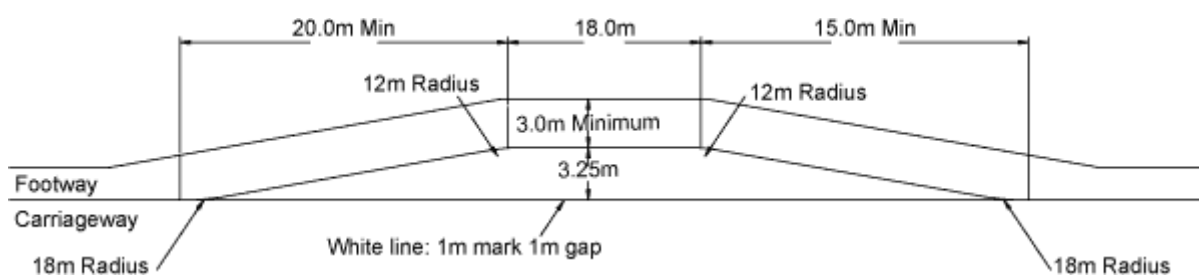


- 3.77 Shelters will usually be required at key access points where there are likely to be higher passenger flows, for example, near:
 - high-density housing;
 - business parks;

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- local shops, schools, hospitals or other significant community facilities; or
 - in rural areas where public transport services are infrequent and people may have to wait some time for a bus.
- 3.78 Where we will not own a bus shelter, you will need a licence from LCC to erect it. Where shelters will display advertising, you will also need planning permission from the planning authority. We will also need to be satisfied that appropriate arrangements are in place for the shelter's future maintenance.
- 3.79 We will consider how bus service information will be provided at bus stops on a site-by-site basis. Depending on the nature and size of the development, the information provided could consist of:
- a simple timetable;
 - a more comprehensive display including a bus route map and a plan showing pedestrian links to surrounding facilities; or
 - real-time bus information at key stops.
- 3.80 Where lay-bys are to be provided, they should normally be designed to accommodate 15m long buses as indicated in Figure DG8 below.

Figure DG8 Bus lay by



- 3.81 We will normally require a commuted sum payment to cover future maintenance of bus stop facilities that we are to maintain will be required. Please see Part 4 for further details.

Designing Passenger Transport Routes

- 3.82 Where a development is likely to be accessed using public transport, any roads which buses are likely to run along should normally be at least 6m wide (subject to tracking assessment) and should be reasonably straight. A more generous swept path is also likely to be required to take account of where vehicles might park on-street, for example.
- 3.83 Any horizontal speed-control features, including 90-degree bends and horizontal traffic calming measures (for example, chicanes), should normally be designed to accommodate the swept path of a 15m long rigid bus (the largest vehicle size now permissible). You should discuss and agree design details jointly with us and the bus operators. You will need demonstrate tracking assessments of vehicle swept paths to demonstrate that your proposals will work in practice.
- 3.84 You should not use vertical traffic calming on bus routes unless there is no other speed control solution. If there is no suitable alternative you should:
- use round-top humps, 5m long with a sinusoidal profile as described in TRL information note 417 (and possibly 377);
 - build any tables to a minimum length of 9m with 1:13 maximum ramp slopes;

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- keep humps or tables no higher than 75mm. Bus companies prefer lower heights and we will consider these on a site-by-site basis, as long as any reduction in height does not significantly affect speed control in the development; and
- consult with bus operators (at the earliest opportunity).

Note: Please see our standard drawings for junction tables, speed cushions and road humps.

Public-transport interchanges

3.85 It may be appropriate for particularly large developments which generate high passenger numbers, and which are located at key points on the road network, to provide a public-transport interchange with comprehensive facilities. Examples of developments and locations might include:

- major retail parks;
- hospitals;
- business parks;
- significant new housing estates;
- extensions to an existing major development where it will help to encourage greater use of public transport;
- developments at locations where bus routes intersect; and
- where major orbital and radial roads intersect.

3.86 Examples of facilities might include:

- a waiting room or mini bus station;
- comprehensive timetable and route information, including real-time bus information;
- secure facilities for leaving luggage;
- toilets;
- refreshment facilities; and
- secure cycle parking.

3.87 We will consider development proposals and maintenance responsibilities on a site-by-site basis

Section DG6: Pedestrians and cyclists

Introduction

3.88 Walking and cycling can offer real alternatives to journeys by car particularly over shorter distances. In the interests of sustainability, new developments must make appropriate, high-quality provision for pedestrians and cyclists and where it is necessary to break a road link in order to discourage through traffic, it is recommended that links for pedestrians and cyclists are maintained. For cyclists this includes providing appropriate parking and supporting facilities (for example showers and lockers) as detailed in Section DG15.

General geometry

3.89 Table DG9 sets out general geometry for pedestrian-only routes, including footways and footpaths. Routes for joint use by pedestrian and cyclists, or by cyclists only, are covered in Table DG10. Surfaces used by pedestrians should be free from hazards that could cause them to trip.

Table DG9: Pedestrian-only routes				
Location	Width	Minimum width past an obstacle ^(a)	Longitudinal gradient	Crossfall
Normal residential, commercial and industrial sites	2m	1.2m. Maximum length of an obstacle: 6m	Minimum: 1:100 Maximum: 1:20 ^{(b)(c)}	1:35
Shopping areas	4m			
Bus stops	3m			
Outside schools ^(d)	3m			

^(a) Includes things such as bollards, sign posts, guard railing, lamp columns and utility equipment (for example gas, water, cable TV). You should liaise with utility providers to achieve this for equipment installed while the development is being built. The clearance should be increased to 2m where pedestrian flows may be heavy, in the region of 500 an hour. Please see Section DG10 for more guidance on locating utility equipment.

^(b) Taking into account the needs of people with impaired mobility, we may be prepared to consider a relaxation to 1:12 on sites with particularly difficult topography.

^(c) Crossovers to private drives and parking should be carefully designed so as not to create inconvenient cross-falls for pedestrians.

^(d) Includes higher and further education facilities.

Table DG10: Joint use of cycle and pedestrian routes and cycle-only use					
Type ^(a)	Width ^(b)	Centre-line radius	Forward visibility	Crossfall ^(d)	Longitudinal gradient
Joint use with pedestrians	3.0m ^(e)	6m	20m	1:35 (no adverse camber)	Min: 1:100 Max: 1:20
Cycle only	2m ^(e)				

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- (a) Normally provide joint use, except where cyclist and pedestrian flows are likely to be high, for example, outside a school or in a shopping area. Where cyclists and visually impaired pedestrians could meet, you should provide warning surfaces to standard drawings.
- (b) Minimum width past an obstacle as in Table DG9 above, including accompanying note.
- (c) A 50mm white line should be provided, offset 500mm from the kerb and parallel to it.
- (d) Crossovers to private drives and parking areas should be carefully designed so as not to create inconvenient cross-falls for pedestrians.
- (e) Where a route is bounded (for example by a wall, fence or bridge parapet) you should normally add an additional 0.25m for each side bounded where the boundary height does not exceed 1.2m, and an additional 0.5m for each side bounded where the boundary height exceeds 1.2m.

3.90 Porch roofs, awnings, garage doors, bay windows, balconies or other building elements should not oversail (project over) footways at a height less than 2.6m; the headroom over routes used by cyclists should normally be 2.7m. If any part of a building projects over the adoptable highway, you will need to apply to us for a licence under Section 177/178 of the Highways Act before we adopt your roads. If you do not apply for a licence, we may not adopt your roads. Where a route runs alongside a road, its rear edge should normally coincide with the rear of visibility splays at junctions and on bends so the splay is clear and pedestrians and cyclists do not impede visibility. You should achieve this either by widening the footway or providing a verge. Grassed verges should be at least 1m wide and minimum area of 10sqm, otherwise you should use hard landscaping.

3.91 Separate routes should normally meet the following criteria.

- They should be in the open wherever possible. Where this is not possible, buildings should be designed with windows overlooking the route. You should avoid blank walls or close-boarded fences and so on.
- Routes should be as short, straight and direct as is possible, ideally with each end being clearly visible from the other.
- Routes should be well lit.
- Within 2m either side of the route, any planting should be low, ground-cover only for at least 1m, grading to no more than 1m high. Plants should not have thorns. If a route is curved or has corners, you should increase the 2m distance to maintain satisfactory visibility.
- You should take care to make sure that any planting, particularly trees, would not reduce illumination from the lighting.

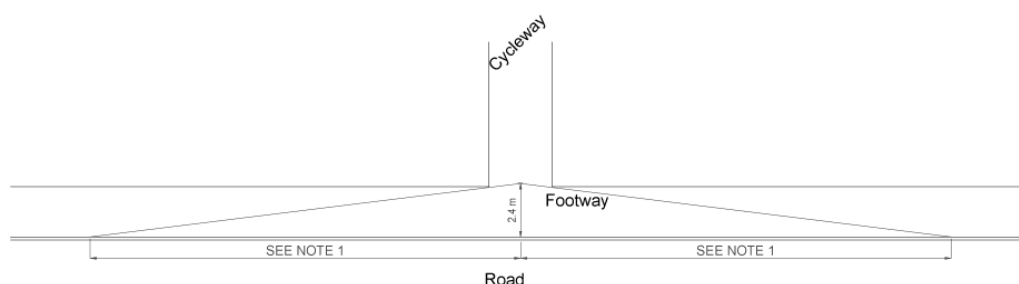
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Figure DG9 Examples of a poor pedestrian link (left) and a good pedestrian link (right)



- 3.92 Where a separate route joins another pedestrian or cycle route which runs alongside a carriageway (vehicle route), you should design its junction with the road network:
- so the route joins at 90 degrees to the traffic flow;
 - to include barriers as in our standard drawings to prevent users, particularly children, from proceeding straight out into the road and also to stop use by vehicles; and
 - to include visibility splays for cycle routes so that cycles emerging from the route can see and be seen. Visibility should normally be provided as indicated below.

Figure DG10 Visibility splays at junctions for cyclists



NOTE 1: Length depends upon speed of vehicles on road.
For distances, see table DG4

Road crossings

- 3.93 The guidance on road crossings applies both to where pedestrians or cyclists are travelling:
- across a road; or
 - along a road and they cross a side-road junction which includes any access more than a simple footway crossing.
- 3.94 In either case, appropriate crossing facilities will normally be required. You should agree requirements for specific sites with us in the early stages of preparing your development proposals.
- 3.95 The normal basic requirement is to provide dropped kerbs with buff- coloured tactile paving as in our standard drawings. Where a refuge in the middle of the road is required, you should provide this to standard drawings with:
- a 2m width for pedestrian-only use and 2.5m where it will be used by cyclists; and

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- a 3.2m clearance to the carriageway edge on either side.
- 3.96 In very large developments it may be necessary to consider some form of controlled crossing to provide safe and attractive routes for pedestrians and cyclists.
- 3.97 Whatever the crossing type, if you need to provide guard railing to guide pedestrians or cyclists, it should be high-visibility railing as in our standard drawings.

Signing for routes

- 3.98 Direction signing can help to highlight and promote the use of a route, although you should take care to minimise clutter and visual disruption. You should identify any requirements for specific sites and agree them with us in the early stages of preparing your development proposal. Any signing and lining you provide should be designed in line with the guidance in Part 4 and our best practice document.

Materials and construction

- 3.99 Please refer to Part 4.

Adopting new routes

- 3.100 Where new footways and cycleways are located alongside roads that we are adopting, we will usually adopt them as publicly-maintained footways and cycleways as long as they have been as per LCC standards.
- 3.101 We may also consider adopting other routes where they serve a strategic purpose, for example, where they form part of a wider network (existing or planned) or provide a more direct link to:
- major employment or a shopping centre;
 - a school or other community or leisure facilities; or
 - passenger transport stop;
- providing that the routes have been constructed and lit to LCC standards.
- 3.102 Part 5 provides details on procedures for adopting new routes under Section 38 agreements. Part 6 covers works on the existing public highway under Section 278 agreements.
- 3.103 We will not normally adopt routes:
- that serve only private properties, public open spaces, play areas and so on;
 - where there is already an existing satisfactory alternative adopted route; and
 - where any adjacent routes they might link to are not adopted, or are of a poor standard.
- 3.104 You should discuss adoption issues with us in the early stages of preparing your development proposals.

Existing rights of way

- 3.105 A guidance note for designers, developers and planners on Development and Public Rights of Way (“Rights of Way Guide”) has been adopted by Leicestershire County Council and can be viewed as a companion document on the LHDG webpage.
- 3.106 You cannot obstruct or divert an existing right of way without obtaining the consent from the local highway authority (even if planning permission has been granted). You should accommodate an existing footpath on its existing right of way wherever possible. If, however, the local highway authority agrees in principle to a diversion, you will need a diversion order. The planning authority usually processes applications to divert rights of way using powers under the Town and Country Planning Act 1990.

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- 3.107 In all cases, the route of existing rights of way should normally be designed in line with the guidance set out in the Rights of Way Guide. You should take particular care to design bridleways to prevent their misuse by motor vehicles.
- 3.108 Where a development requires highway rights to be extinguished (removed), for example, to stop-up a length of road, this also should normally be done by the planning authority under the Town and Country Planning Act. You should get our agreement to your proposals to extinguish highway rights before you submit a planning application.
- 3.109 The procedures involved in making diversion orders or orders to extinguish existing highway rights can be very lengthy. You should get advice on the likely timescale and take this into account when you programme your proposals. Whether or not any order is successfully made, you will normally be responsible for paying all costs associated with processing it.

The existing and planned cycle route network

- 3.110 We are working along with organisations such as Sustrans and other highway authorities to provide a safe and convenient cycle network throughout our areas. Where a site stands close to this network, you will normally be expected to provide links to it as part of your proposals. You will also be expected to contribute towards its completion where it is reasonable to ask you to do so.

Providing cycle parking and other facilities for cyclists

- 3.111 Please see Section DG15.

Section DG7: Horse riders

- 3.112 Horse riders are entitled to use bridleways, all-purpose roads and byways open to all traffic. You should consider them in the design and safety audit of all developments which either:
- affect an existing or future bridleway; or
 - affect an existing or future all-purpose road that carries horse riders.
- 3.113 The guidance in this section relates generally to lower-speed single carriageway roads. For facilities for horse riders in other circumstances, please refer to TA57/87 Roadside Features, section 11.
- 3.114 Bridleways carry horse riders, cyclists and pedestrians, and you should take the needs of all these groups into account.
- 3.115 For horses, a blinded crushed stone surface is often best, being hard wearing without being as hard on hooves as asphalt.
- 3.116 Where a new junction is formed between a bridleway and a road, a Pegasus crossing facility should be provided. In addition, a bridleway sign should be erected.
- 3.117 New roads likely to carry significant horse traffic (more than 100 passages a week) may need verges suitably surfaced for horses. For particularly well-used routes, for example, near a riding school, you should consider providing a separate horse trackway beyond the verge, possibly separated from vehicles by fencing or a hedge.

Section DG8: Lining, signing and traffic regulation orders

- 3.118 You will normally be required to provide all road markings and traffic signs both on the internal development roads and on the surrounding road network where necessary. Occasionally, this may involve signing at some distance from the development, for example, for routing HGVs.
- 3.119 At your developments' site access, lining and signing should be provided in accordance with Traffic Signs Regulations and General Directions 2002 (TSRGD). For priority junctions within developments, junction lining and signing:
- will not normally be required in residential developments;
 - will not normally be required in B1 use class office developments; but
 - will be required in all other employment and commercial developments, provided in accordance with TSRGD.

Other types of development will be considered on a site-by-site basis.

- 3.120 In addition to markings at junctions as indicated above, carriageway centre-line markings will:
- not normally be required in residential developments;
 - will not normally be required in B1 use class office developments; but
 - will be required in all other employment and commercial developments, provided in accordance with TSRGD.

Other types of development will be considered on a site-by-site basis.

- 3.121 Signing and lining, in accordance with TSRGD, should also be provided at all road humps/tables, at any entry ramps to side roads and at any other traffic calming features. Where parking bays are not clearly defined, markings will be required to segregate them from the carriageway.
- 3.122 Wherever signing and road markings are required, you should normally provide them in line with the requirements set out in Part 4, Section MC12, including the need for illumination. You should establish at an early stage in the detailed design process which signs will require illumination to make sure that appropriate electrical supplies are installed during construction work.
- 3.123 Where a development requires changes to an existing traffic regulation order (TRO) or a new order is required, you will normally be required to pay all costs associated with this, including all consultation and legal costs. TROs are subject to statutory procedures and consultations. This can be a very lengthy process and a successful outcome is not guaranteed. You should get advice on the likely timescale and take this into account when you programme your proposals.

Section DG9: Street lighting

- 3.124 We normally require a suitable system of street lighting on all adoptable roads, which we will normally design for you in areas to be adopted. This is important for both road safety and to help promote personal safety and minimise crime opportunities.
- 3.125 It is also important that you plan the lighting at the same time as you design the street layout. Also, to encourage pedestrians to use a route and to feel safe, it is important that lighting levels are maintained at the same standard along a route, whether a route is adopted or not. There are also wider design issues. When you prepare development proposals, you should consider the purpose of the lighting, its scale and the proposed width of the street and height of any buildings.
- 3.126 For more details on street lighting, please see Part 4.

Section DG10: Utility equipment

- 3.127 Early in your planning process you should consider the location and installation of utility equipment both above and below ground, particularly where surface areas are shared. Normally, private equipment should not be located in the highway* but utility company's equipment should be. Utility equipment should be installed in accordance with National Joint Utilities Group, (NJUG), volumes 1 and 2. Where a shared-surface layout is proposed without a separate service margin or where a development layout is not explicitly covered by this guidance, you should hold early discussions with utility providers and supply us with details of proposed locations for utility equipment. This will enable us to consider the layout, for example, in terms of safety and accessibility.

* This can be difficult to achieve with layouts where houses are located very close to the highway boundary. However, if you do not deal with this matter, it may lead to problems in future with us adopting your road.

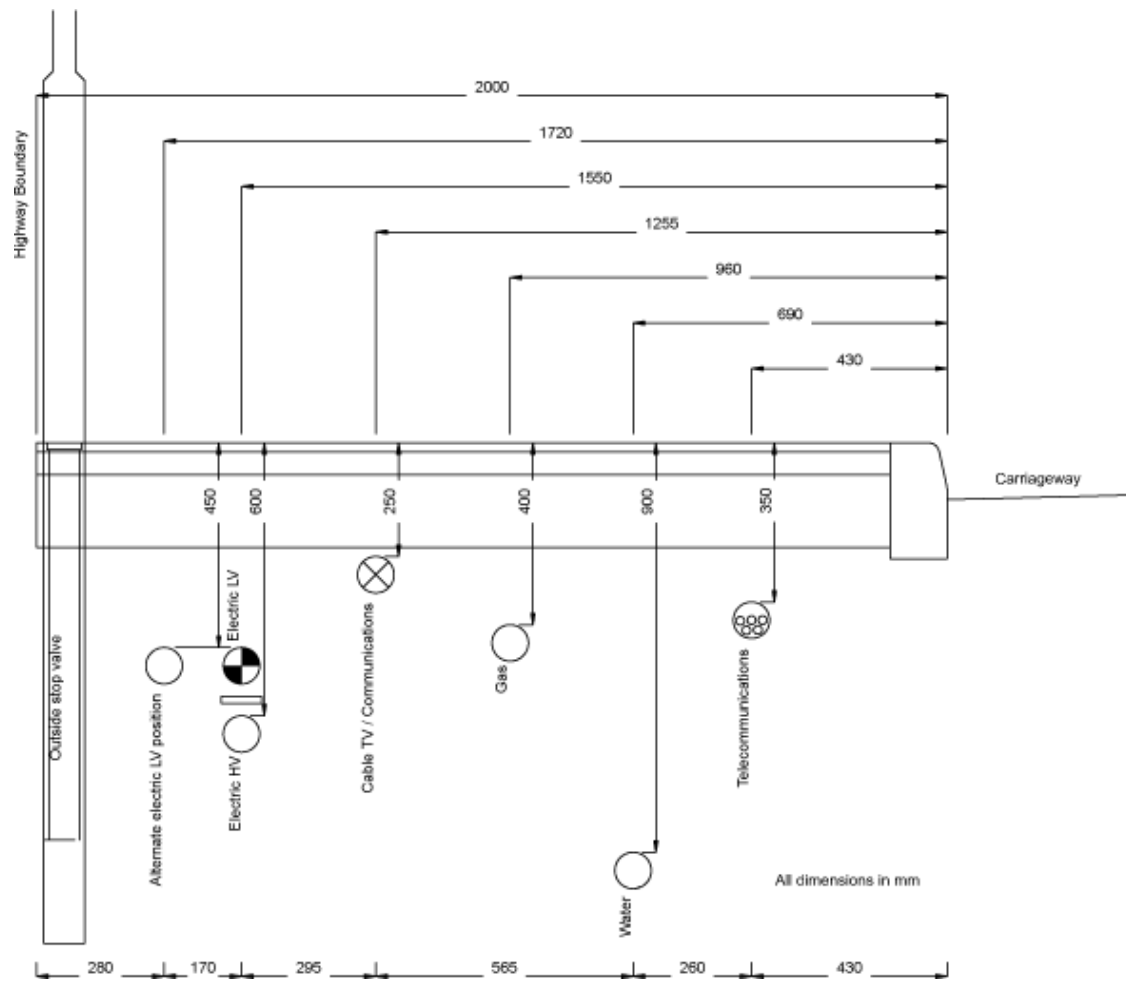
- 3.128 Any separate service margin should be at least 2m wide. And any utility equipment that is above ground, for example, cabinets, boxes, pillars and pedestals should be sited so that it:
- does not constitute a danger to the public or to staff working on it;
 - does not obstruct a drivers' view, for example, by siting it in visibility splays;
 - does not obstruct pedestrians, wheelchairs, prams, pushchairs and so on. You should provide at least 1.2m clearance increased to 2m in areas of high pedestrian flows (500 pedestrians an hour);
 - is not located within 5m of any other street furniture that would create a double obstruction to pedestrians. Any item within 5m must be in line;
 - does not provide a means of illegal access to adjacent premises or property, for example, you should avoid sites alongside a high wall so the equipment cannot be used to climb over the wall;
 - does not offend visual amenity (spoil the view) by restricting the outlook from the window of a house, intruding into areas of open- plan front gardens or disrupting the line of low boundary walls;
 - does not spoil the view of a Grade I or Grade II listed building; or
 - does not result in 'visual clutter' by being in an inappropriate place.

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- 3.129 All apparatus above the ground should:
- be positioned so there is enough access for the equipment and the surrounding highway to be maintained and cleaned;
 - not be located within any tactile paving (in the case of surface covers);
 - allow space for associated jointing chambers;
 - take account of known highway alterations;
 - allow for future surfacing work, for example, by using raised plinths and allowing for spare cable if the boxes are raised in future; and
 - meet the licence requirements for listed buildings and conservation areas. You need to give special consideration to cabinet design in conservation areas.
- 3.130 Where equipment is to be located in a proposed adoptable highway, you should locate cabinets and so on in the verge where possible. You should leave at least 1m between the cabinet and the edge of the carriageway in rural areas and 1.5m in urban areas. Access doors should always open to the footway. If there is no verge, you must position cabinets and so on at the back of footway and keep:
- a minimum distance of 1m between the edge of an open access door and the edge of the carriageway where pedestrian flows are low; or
 - a minimum distance of 2m between the edge of an open access door and the edge of the carriageway where pedestrian flows are heavy (500 pedestrians an hour at any time).
- 3.131 We may consider adopting any additional small areas so above- ground apparatus can meet locational requirements. If, however, you cannot meet the requirements within adoptable areas, you should locate cabinets and so on off the proposed adoptable highway. You may need an easement to allow utility equipment providers access in future for maintenance purposes.
- 3.132 You should locate equipment below ground in line with NGU7. You should locate any access chambers that are on the surface to:
- minimise disruption to pedestrians and provide adequate access for installing and maintaining equipment, and recovery operations;
 - avoid expensive pavings as far as possible, for example, tactile paving;
 - avoid other utility providers' equipment;
 - allow for using mechanical equipment during construction and installation, maintenance and recovery operations at the site;
 - take into account any known highway alterations;
 - make sure the type and construction of underground boxes allows us to raise covers and frames when we carry out resurfacing work; and
 - avoid potential archaeological features, including foundations to listed buildings.

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Figure DG11 Arrangement of below ground service equipment



3.133 Where developments include central recycling points, you should site these also in line with the above guidance.

Section DG11: Drainage

3.134 We have a duty to make sure that developments include satisfactory arrangements for draining the adoptable highway. This should normally be achieved by one of the following methods.

- All highway water should be drained direct into a piped system adopted by a water company. Please see Part 7 for contact details. This is the method we prefer.
- If the above method is not possible, water should be drained by a piped highway-drainage system (minimum pipe size 225mm) running to an out-fall adopted by a water company or an out-fall to a ditch or watercourse agreed by the Environment Agency. We will normally adopt a piped highway-drainage system like this where we are adopting the road.

All highway drains should be located within land that we are adopting. Only in exceptional circumstances will we permit them in land that is to remain private. You must cover any adoptable highway drain outside the limits of the adoptable highway by an easement agreement. This should be in place before, or be a condition of, the Section 38 or 278 agreement.

3.135 We will consider alternative highway-drainage systems, including SUDS, flow attenuation (reduction) or retention systems (including oversized pipes) and so on, on a site-by-site basis. Where there are valid reasons for providing systems like these, and where they would present us with extra maintenance liability over a piped system, we will require you to pay commuted sums. Please see Part 4, Section MC18 for further details on our commuted sums policy.

3.136 We will not adopt a road unless its associated drainage is to be adopted either by a water company or by us.

3.137 We will not normally accept drainage of other non-adopted areas into any highway system. In general, the drainage of most other areas of a development are matters for water companies. You should normally design these drainage systems in line with the water companies' specifications and requirements (which you may treat as complementary to this document) and they should be adopted by them.

3.138 Please refer to Part 4 for more details on highway drainage design and to Part 4 Section MC18 for more details on commuted sums.

Section DG12: Landscaping

3.139 Soft or hard landscaping within highway areas can be as important in determining the character of the development and integrating it into its surroundings as landscaping elsewhere within the site. You should not underestimate how important it is to create an attractive environment. Planning authorities are unlikely to favour developments that lack quality design and layout.

3.140 Areas we are prepared to adopt as highway should be concentrated into larger areas, to provide economies of scale and to avoid small or remote areas which are difficult to maintain. Small and remote areas can actually result in the very opposite of what is intended of creating an attractive and well-cared-for environment.

3.141 You should prepare landscaping proposals at the pre-planning application stage so we can consider their suitability in good time and so the utility providers (for example, gas, water, cable TV) can be consulted over the proposals. We must approve the landscaping proposals within the development whether or not they form part of a landscaping scheme that you have submitted to the planning authority for approval. (Please see Part 4 for further information).

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- 3.142 While planting and trees can enhance the street scene, you must take care when you are selecting and positioning trees, shrubs and so on to make sure that building frontages and parking areas can still enjoy good natural observation from areas of potential activity such as roads and footways. Where trees outside of the highway boundary are planted within close vicinity of the highway boundary, root deflectors or root protection barriers may need to be considered.
- 3.143 We will require the payment of a commuted sum for any proposed planting, trees, shrubs and so on that we are prepared to adopt. Please see Part 4, Section MC18 for further details on our commuted sums policy.

Section DG13: Vehicle parking and making provision for service vehicles

- 3.144 This section sets out off-street parking standards and gives guidance on the design of parking in residential and employment and commercial developments. It covers vehicle parking, provision for service vehicles, motorcycle parking and cycle parking.
- 3.145 We will be considering parking standards further with District, Borough and City Councils as they prepare their development plans. In particular:
- in urban areas we will be seeking to identify more specific areas where the various parking standards will normally be applied; and
 - we will be considering appropriate standards for rural areas.

We will review the standards in the light of any further national guidance or research. The Chartered Institution of Highways and Transportation (CIHT) and the Institute of Highways Engineers (IHE) have published (April 2012) a guidance note on residential parking. This can be viewed at https://www.ciht.org.uk/media/4395/guidance_note_-_residential_parking.pdf. In the meantime, the normal starting point for determining off-street parking provision is set out in the following paragraphs and tables. Where you are in doubt about which type of area a development falls into, you should discuss this with us and the planning authority at the earliest opportunity. Parking provision should be considered in relation to any transport assessment and travel plan associated with a development proposal. Please refer to Section DG16.

- 3.146 Parking provision should be considered in relation to any transport assessment and travel plan associated with a development proposal. Please refer to Section DG16.
- 3.147 Where you do not provide suitable parking arrangements within a development, we may refuse to adopt the development roads.

Off-street parking standards (excluding residential see 3.168)

- 3.148 The normal maximum vehicular parking standards shown in Table DG11 below are taken from RPG8. For developments below the threshold, Leicestershire County Council will continue to apply the standards contained in the previous guidance document 'Highway Requirements for Development' (HRfD) for the time being as the normal maximum standards. In certain circumstances, for example, where there are road safety or amenity issues that cannot be satisfactorily resolved, we may require a higher level of parking provision.

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Table DG11: Normal maximum parking standards in Leicestershire ^{(a)(b)}		
Use ^(c)	Normal maximum parking standard based on one space for every square metre (m ²) of gross floorspace unless otherwise stated	Threshold for applying the standard (gross floorspace) ^(d)
Food retail	One space for every 14m ²	1000m ²
Non food retail	One space for every 20m ²	1000m ²
B1 offices	(see note e) Urban town centre or edge of centre One space for every 60m ² Rest of urban town One space for every 35m ² Rural town centre or edge of centre One space for every 40m ² Rest of rural town One space for every 30m ² Out of any town One space for every 30m ²	2500m ²
B1 Non-office and B2 General industry ^(f)	(see note e) Urban town centre or edge of centre One space for every 130m ² Rest of urban town One space for every 80m ² Rural town centre or edge of centre One space for every 90m ² Rest of rural town One space for every 65m ² Out of any town One space for every 55m ²	2500m ²
B8 Warehousing	(see note e) Urban town centre or edge of centre One space for every 300m ² Rest of urban town One space for every 180m ² Rural town centre/edge of centre One space for every 200m ² Rest of rural town One space for every 150m ² Out of any town One space for every 120m ²	2500m ²
Cinemas and conference facilities	One space for every five seats	1000m ²
D2 (other than cinemas, conference facilities and stadia)	One space for every 22m ²	1000m ²
Higher and further education	One space for every two staff plus one space for every 15 students ^(g)	2500m ²
Stadia	One space for every 15 seats ^(h)	1500 seats

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- (a) You should provide parking for people with disabilities as in paragraph 3.150 onwards.
 - (b) Please refer to paragraph 3.155 onwards for details on sizes of parking spaces and the design of car-park layouts.
 - (c) Please see paragraph 3.148 onwards for standards for residential parking.
 - (d) Please see paragraph 3.144 for developments below the thresholds shown or otherwise not listed.
 - (e) RPG8 defines Leicestershire urban towns as Oadby, Wigston, Hinckley, Earl Shilton, Barwell, Burbage, Loughborough and Shepshed. We will work with district councils to establish where within and around these towns the various levels of parking standards will specifically apply. It will also work with the district councils to agree standards for rural towns, which are not defined in RPG8.
 - (f) We will recommend that restrictions are imposed to prevent changes to B1 office use where no allowance has been made for the higher parking levels associated with offices.
 - (g) The figure for students relates to the total number of students rather than full-time equivalent figures.
 - (h) You should provide parking spaces for coaches in addition to the above, to be agreed for each specific site. Coach parking should be designed and managed so that it will not be used for car parking.
- 3.149 In Leicestershire, where no parking standard is given for a particular development (either in Table DG11 or in our previous document HRfD or in paragraph 3.148 for residential developments), we will consider the provision required taking certain factors into account including:
- the control of on-street parking in the area;
 - the development's exact nature and likely use;
 - its geographical location;
 - the standard of the surrounding road network and the traffic and parking conditions on it; and
 - how accessible the development is using other methods of transport, including public transport, walking or cycling.

Off-street parking standards - residential

- 3.150 The Department for Communities and Local Government (DCLG) has published a research paper on residential car parking. It sets out a method for calculating total demand for parking for a proposed housing development based on a number of factors including:
- car ownership levels;
 - size and type of housing (that is owner-occupied, rented and so on); and
 - whether the parking spaces are to be allocated to particular houses or unallocated.

Depending on the scale of your proposed development, we will normally expect you to apply this method.

- 3.151 **Developments of 1 to 5 houses:** You have the choice of either applying the following standards or using the DCLG paper method referred to in paragraph 3.145. (Please see paragraph 3.148 if you intend to use the DCLG method.)
- One space for each dwelling:

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- where car ownership may be low, such as town centres and other locations where services can easily be reached by walking, cycling or public transport.
- Two spaces for each dwelling:
 - urban locations with poor access to services and poor public transport services;
 - three-bedroom dwellings in suburban or rural areas; and
 - other locations where car ownership is likely to be higher than locations that are better served by public transport.
- Three spaces for each dwelling:
 - four-bedroom dwellings in suburban or rural areas; or
 - other locations where car ownership is likely to be higher than locations that are better served by public transport.

3.152 **Developments over 5 dwellings:** We will normally expect you to apply the DCLG paper method.

3.153 Where you are using the DCLG paper method, we will normally expect you to provide your initial estimate of parking demand before you submit a planning application. We will also expect you to supply details of how that demand will be met, that is the mix of on-plot parking*, on-street parking and parking courts**. When you calculate parking demand, you should remember that the counties are both geographically and economically diverse, which can influence levels of car-ownership. They range from rural areas to the more densely developed suburbs.

Notes:

*See section on “Garages and Gated Access” paragraph 3.195.

**Experience with recent developments is that many residents make little or no use of parking courts. This results in wasteful use of land as well as on-street parking which the road layout has not been designed to accommodate. Where you are proposing a development that includes communal parking courts*, we would only consider a lower level of parking provision on the site where:

- parking courts are designed to take account of the principles set out in paragraph 3.156; and
- there would be no conflicts with the objectives of our ‘highways development control policy’

(*Note: A communal court is a parking area available for general use by residents and visitors in, for example, a development of flats. This guidance does not apply to a parking court allocated to an individual property or allocated parking spaces grouped together to serve several properties, such as rear parking courts that are becoming increasingly common in new developments.)

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Figure DG12a May be prepared to consider a lower level parking provision

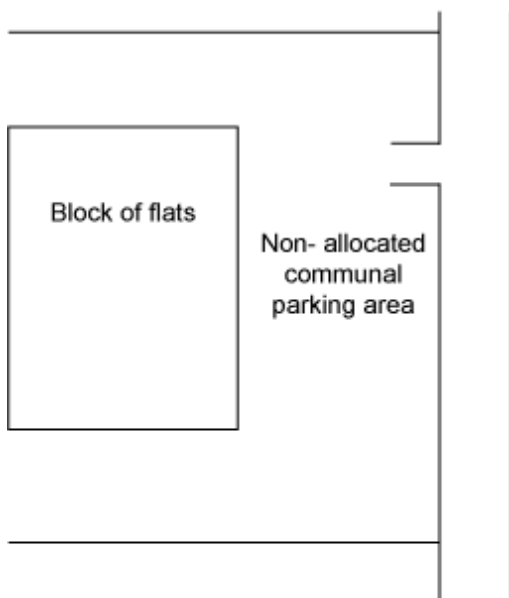
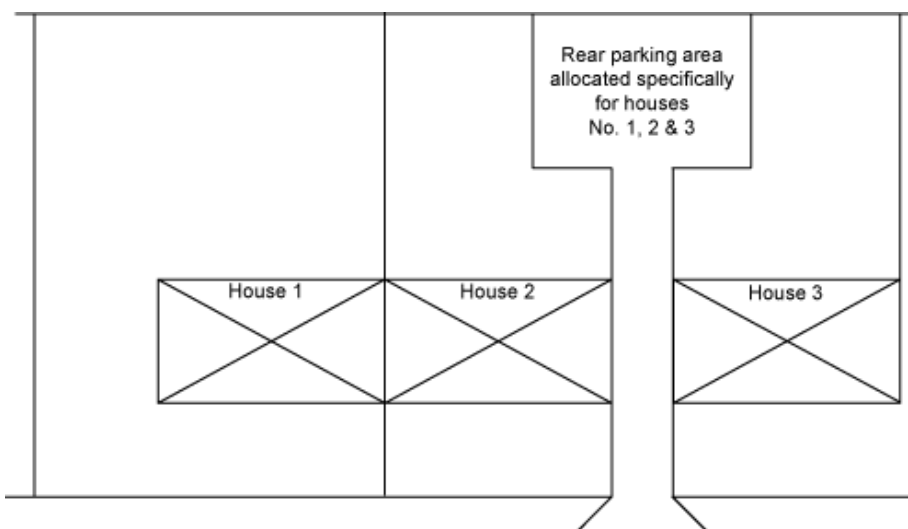


Figure DG12b Reduced parking provision would not normally be considered



For details of garage design and layout please refer to Section DG17, paragraph 3.195 onwards. Garages will not normally be counted as a parking space for the purpose of calculating parking provision, unless:

- the garage meets the minimum dimensions given in Section DG17;
- planning conditions are imposed to control use of the garage; or
- restrictions are placed on converting the garage to a room that can be lived in.

If a dwelling has no separate parking for cycles, it may affect whether we consider that the garage should be counted towards parking provision.

3.154 Where satisfactory levels of off-street parking are not provided, measures may be required in line with Section on “Garages and Gated Accesses” paragraph 3.166 onwards to minimise the risk of problems caused by on-street parking, including providing wider roads.

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Disabled parking

- 3.155 Many disabled people rely on the car for getting about. Whether they drive themselves or travel as a passenger, reaching their destination with ease is almost always determined by where the car can be parked. It is very important that proper parking provision is made in new developments.
- 3.156 For all non-residential developments, you should provide disabled parking to the minimum standards shown in Table DG12. This provision should be in addition to general parking provision. Parking for disabled people should be located as close as possible to the main entrance of a building.

Car park used for	Car park size	
	Up to 200 spaces	Over 200 spaces
Employees and visitors to business premises	Individual bays for each disabled employee plus two bays or 5% of total parking spaces whichever is greater	Six bays plus 2% of total parking spaces
Shopping, recreation and leisure	Three bays or 6% of total parking spaces whichever is greater	Four bays plus 4% of total parking spaces
Schools and higher and further education	At least one bay regardless of car park size	

^(a) Please refer to paragraph 3.158 onwards for details on sizes of parking spaces and design of car park layouts.

- 3.157 You should monitor how reserved bays are used to make sure:
- other motorists do not abuse their use; and
 - the number of spaces continues to meet the full demand.

Standards for servicing provision

3.158 Servicing provision for various types of development are given in Table DG13.

Use class	Description of land use	Normal servicing provision
A1	Shops	Stores above 5000m ² One goods bay space for every 1000m ² Stores between 3000m ² to 5000m ² One goods bay space for every 750m ² Stores between 300m ² to 3000m ² You must make provision within the site for service and delivery vehicles to be loaded and unloaded clear of the highway.
A3, A4	Restaurants, cafes and drinking establishments	You must make provision within the site for service and delivery vehicles to be loaded and unloaded clear of the highway.
B1	Light industry, Research and development	One lorry space for every 500m ²
B2	General industrial	One lorry space for every 400m ²
B8	Storage and distribution	One lorry space for every 400m ²

^(a) Please refer to paragraph 3.155 onwards for details on sizes of parking spaces and design of car-park layouts.

General design principles for off-street parking

- 3.159 **Residential:** Off-street parking areas should be close to the dwellings that they serve to make sure that they are fully used. This will minimise the possibility of on-street parking problems. Separate parking areas which are remote from some or all of the properties that they serve, and which cannot be easily observed, can result in on-street parking problems and also crime, anti-social behaviour and maintenance problems which discourage their use and affects the overall quality and appearance of a development.
- 3.160 You should involve us, the planning authority and the relevant police force Architectural Liaison Officer (ALO) in finding parking solutions. But, as general guidance to avoid potential problems, remote parking areas should normally:
- be located near to the main entrances to the properties that it serves, with as short and direct a walking route as is possible between the parking court and the property;
 - be secure, including enjoying good natural observation from neighbouring buildings and not be surrounded by blank walls or close-boarded fences and so on;
 - be well lit;
 - limit planting to low ground cover only;
 - be suitably surfaced and drained, and you will be expected to provide clear details of future maintenance responsibilities (we will not normally adopt off-street parking areas);
 - have clearly designated spaces for individual dwellings; and
 - have open pedestrian routes to the parking area where possible. Where not, they should be designed in line with the guidance on separate routes at paragraphs 3.88 onwards of this document.

The location and overall design should encourage maximum use of the parking areas to minimise the risk of on-street parking problems.

- 3.161 You should consider the needs of people with mobility and visual impairments both in the layout of the parking area and any routes between it and the associated dwellings.
- 3.162 **Industrial and commercial and other large-use car parks (for example for leisure and retail):** We will not normally adopt off-street parking areas in these developments. However, your design should do the following.
- Make sure there is free flow of traffic entering and leaving the car park to minimise the likelihood of tailbacks causing safety problems and delays on the surrounding road network. This may require one-way systems with control ramps or flaps at entrances and exits and appropriate signing in larger car parks.
 - Provide safe pedestrian and cycle routes across the car park to building entrances, following natural paths wherever possible. In larger car parks you should consider segregated routes with raised crossing points on main vehicle routes. Any routes should be in the open wherever possible. Where not, you should design them in line with the guidance on separate routes at paragraphs 3.88 onwards of this document.

- 3.163 You should also design such off-street parking areas to:
- minimise the number of entry and exit points to the public highway;

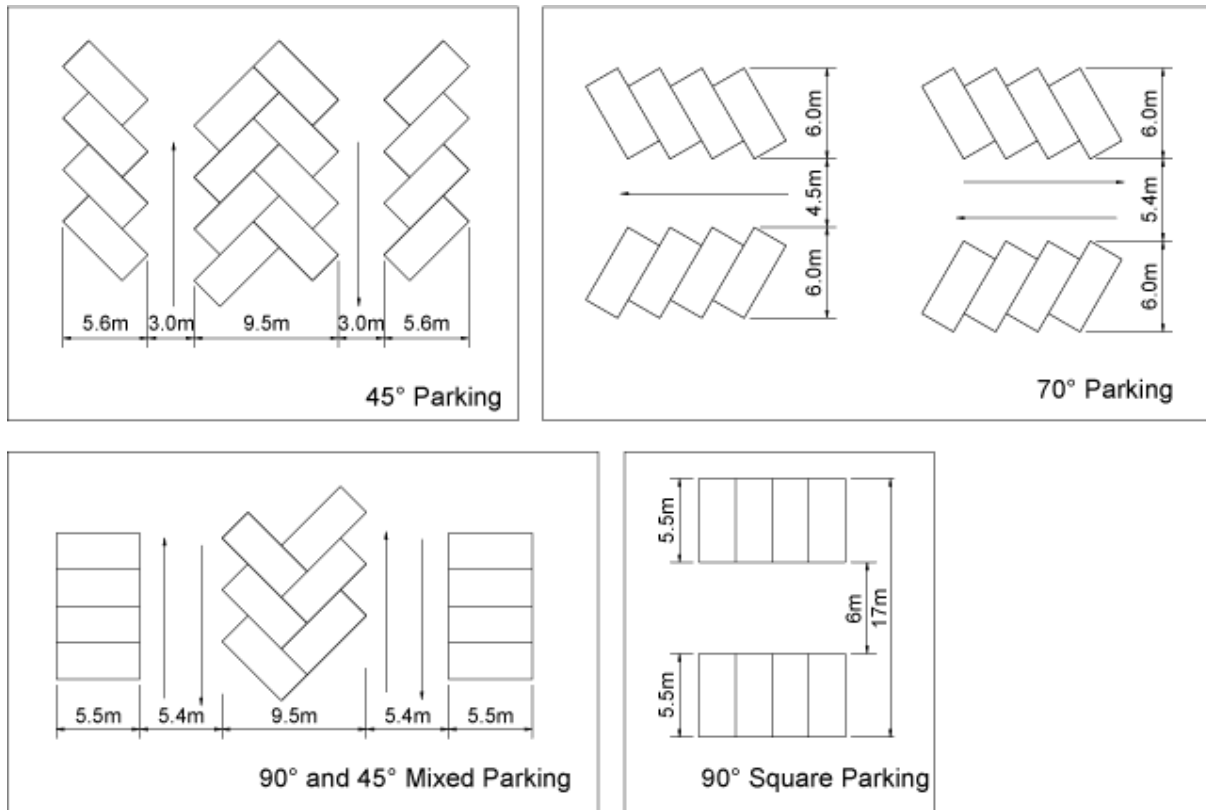
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- provide visibility splays appropriate to likely vehicle speeds and 'road' widths, and corner radii appropriate to likely vehicle sizes and manoeuvres;
- be well lit;
- be well landscaped, although any planting should be kept to low ground cover only;
- be suitably surfaced and drained;
- take into account and complement relevant measures included in any travel plan associated with the development, for example, car- share spaces located closest to the building entrance; and
- make appropriate provision for those with mobility and visual impairments in line with Traffic Advisory Leaflet 5/95. This includes locating parking spaces in larger car parks as follows.

Disability	Distance (metres)
Visually impaired	150
Wheelchair users	150
Ambulatory without walking aid	100
Stick users	50

- 3.164 For more information about designing and locating disabled parking spaces, please consult Traffic Advisory Leaflet 5/95 Parking for Disabled and Building Regulations Part M (2004 Edition), particularly with regard to the design of any payment or ticket machines or car park access-control systems.
- 3.165 Minimum parking space sizes and aisle widths are shown in Figure DG13. Minimum parking size 2.4m x 5.5m, add 0.5m if bounded by a wall, fence, hedge, line of trees or other similar obstructions on 1 side, 1m if bounded on both sides.

Figure DG13 Size and layout of parking spaces.

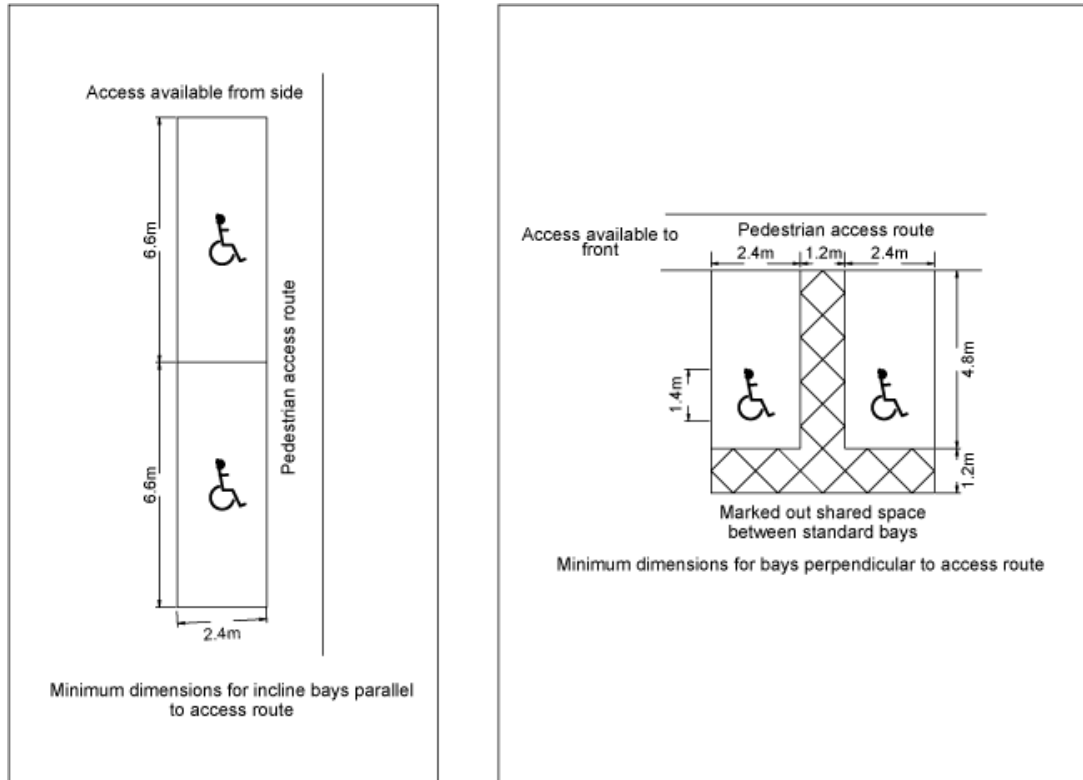


Examples of typical parking layouts

Minimum parking spaces 2.4m x 5.5m add 0.5m if bounded by a wall, fence, hedge, line of trees or other similar obstruction on 1 side, 1m if bounded on both sides.

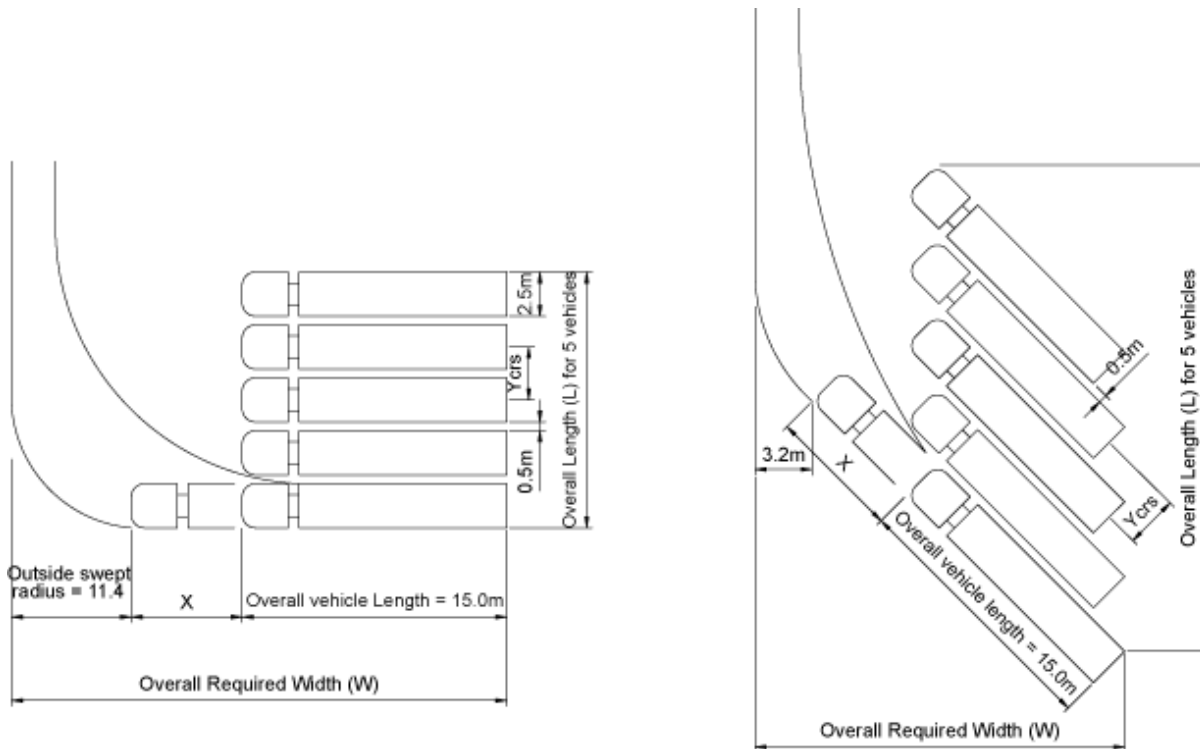
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Example disabled parking layouts



Disabled parking spaces layout

Lorry parking and loading bays - head-on and Lorry parking and loading bays - 45° for largest vehicles



Notes:
X = Draw forward before turning distance

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Lorry parking and loading bays - head-on				Lorry parking and loading bays - 45° for largest vehicles			
X draw forward	Y centres	W o/a width	L o/a length for 5	X draw forward	Y centres	W o/a width	L o/a length for 5
1	5.0	27.4	22.5	4	4.8	18.4	39.5
2	4.4	28.4	20.1	5	4.5	19.1	37.8
3	4.0	29.4	18.5	6	4.2	19.8	36.1
4	3.7	30.4	17.3	7	3.9	20.5	34.4
5	3.4	31.4	16.1	8	3.6	21.2	32.7
6	3.0	32.4	14.5	9	3.4	21.9	31.6
				10	3.2	22.6	30.5
				11	3.1	23.4	29.9
				12	3.0	24.1	29.3

On-street parking

3.166 Research we have carried out has shown that a main concern of Leicestershire residents is on-street parking. National research, including that by the New Homes Marketing Board and Halifax PLC, also highlights on-street parking as a real problem. Where on-street parking provision is poorly designed, it can:

- impair road safety
- obstruct access for vehicles, including for service vehicles, the emergency services and buses;
- obstruct footways and be a hazard to cyclists and pedestrians, including those with mobility or visual impairments;
- make a development look cluttered and unattractive;
- be a source of crime; and
- cause friction between occupiers where private accesses are blocked.

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Figure DG14 Examples of on-street parking problems

Parking in turning head and obstructing access to private drives



'Unsightly' parking obstructing a junction



Parking obstructing a footway - hazard to pedestrians



Access for service vehicle restricted by parking



Parking causing vehicles to cross on to wrong side of the road



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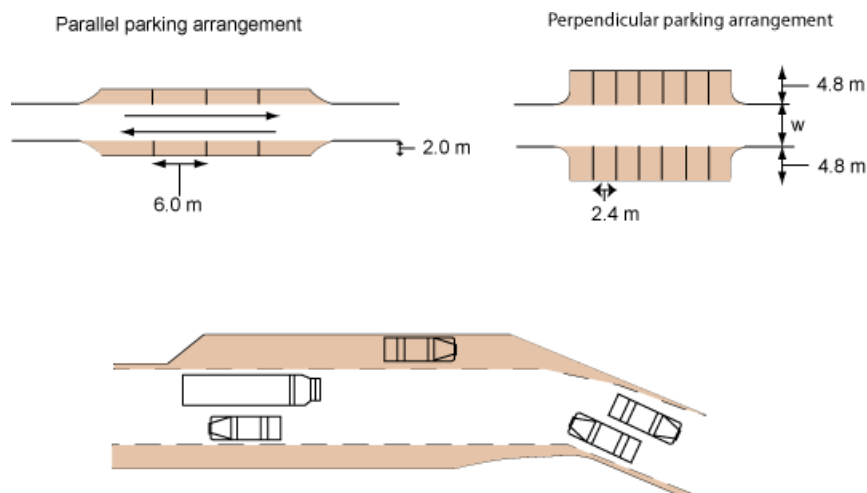
- 3.167 In the interests of the safety of all road users, including pedestrians and cyclists, and of maintaining efficient flow of traffic, we will look for developments that include well-designed parking layouts (on-street and off-street) that minimise the likelihood of on-street parking problems. For parallel parking to a road, each vehicle will normally need an area of about 2m wide x 6m long. For echelon (wedge shaped) parking and perpendicular (end on to the road) parking, individual bays should normally be indicated or marked. Bays should normally be about 2.4m wide and a minimum 4.8m long and they should be arranged so that drivers are encouraged to reverse into them. Figure DG15a shows some suggested on-street parking arrangements, and also sets- out how to calculate the necessary width needed to access echelon parking.
- 3.168 Where it appears that on-street parking could cause problems, we will ask you for computerised tracking assessments of appropriate vehicle paths (these are likely to include refuse lorries, pantechincons, fire tenders and buses if the development is to be served by public transport). Where the assessment demonstrates that it is necessary to provide extra width to accommodate on-street parking, you should normally achieve this either by:
- providing parking bays as illustrated below (bays should not be designated to particular properties); or
 - increasing the overall carriageway width. We can accept localised width variations - it is not necessary for a road to have a constant width and parallel kerb lines throughout.

Figure DG15a Good examples of on-street parking bays



Figure DG15b Suggested on-street parking bays, parallel and perpendicular parking (top) and widening of carriageway to create on-street spaces (bottom).

This Figure is based upon Figures 8.18 and 8.19 and paragraph 8.3.5.1 of the Manual for Streets documents. The Manual for Streets is copyright of the Department for Transport and Department of Communities and Local Government.



- 3.169 Where we adopt additional areas to accommodate on-street parking, you will have to pay commuted sums to cover future maintenance. Please see Part 4, Section MC18 for further details on our commuted sums policy.
- 3.170 You may also be required to provide measures to prevent parking in unsuitable areas and to make sure parking bays are used correctly. This might include providing bollards, fencing and landscaping. These should be integrated with the design of the overall development proposal and may also require the payment of commuted sums to cover their future maintenance. You may also need to adjust proposed building and plot layouts to avoid locating pedestrian accesses at points where they may cause problems if someone left their vehicle parked on-street while in the building.
- 3.171 In certain circumstances, traffic regulation orders may be needed to control on-street parking, including waiting restrictions and residents' parking schemes either within the development or on the surrounding highway network. Where this is so, you will normally be required to pay all costs associated with making the orders. (Please also see Section DG8).

Section DG14: Parking for motorcycles

- 3.172 Motorcycles and mopeds can provide an alternative to the private car for certain trips. There is a growth in the popularity of motorcycles and mopeds both for leisure and as a means of transport especially where public transport is limited and walking or cycling is unrealistic. Motorcycles can provide environmental benefits over single-occupancy cars. If people switched from walking, cycling and public transport to riding motorcycles and mopeds, the environmental benefits would be less clear.
- 3.173 The parking standard for motorcycles and mopeds is:
 - one space, plus an additional space for every 10 car parking spaces.
- 3.174 Parking spaces should normally be:

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- 2.5m x 1.5m with a 1m space between each bike.
- 3.175 The design of the parking area should allow motorcycles and mopeds to be secured to the ground while parked.
- 3.176 Parking provision should be considered in relation to any travel plan associated with a development proposal. Please refer to Section DG16.

Section DG15: Parking for cycles

- 3.177 As the Manual for Streets emphasizes, providing well-located, safe and secure cycle parking is a major factor in encouraging people to cycle as an alternative to using the private car. So, the parking standards in Table DG14 below are the normal minimum requirements.
- 3.178 Where it is not possible to provide cycle parking spaces on site, you will normally be expected to make a financial contribution towards providing public facilities where this provision is possible.

Table DG14: Minimum provision for cycle parking^(a)		
Use class	Description of land use	Provision
A1 and A3	Shops and restaurants, pubs and clubs	One space per 500m ² up to 4000m ² gross floor area (GFA) for staff and operational use. Parking to be secure and under cover. One space for every 1000m ² GFA for customer use to be in the form as shown in Figure DG16. Parking to be located in a prominent and convenient location.
A2 and B1	Financial and professional services, and research and development and offices	One space per 400m ² GFA for staff and operational use. Parking to be secure and under cover. Customer parking to be assessed on a site-by-site basis.
B2 to B8	General industry and storage and distribution	One space per 400m ² GFA. Parking to be secure and under cover.
C3	Dwelling houses ^{(b)(c)}	For developments with common facilities, such as flats, one space for every five dwellings. Parking to be under cover and secure. Where spaces are allocated, there should be one space for each dwelling.
D1 and D2	Non-residential institutions, assembly and leisure	Staff parking to be assessed on a site-by-site basis. Sufficient cycle racks to accommodate five percent of the maximum number of visitors expected to use the facility at any one time. Racks to be in the form as shown in Figure DG16 and to be located in a prominent and convenient location.

^(a) Developments or circumstances not covered in the table will be assessed on a site-by-site basis.

^(b) If cycle parking is not provided for residential developments, it may affect the way we consider the use of garages, i.e. whether they should count towards parking provision.

^(c) If cycle parking is provided on upper floors, such as in flats, lifts that can take bikes should be provided.

3.179 All cycle parking must:

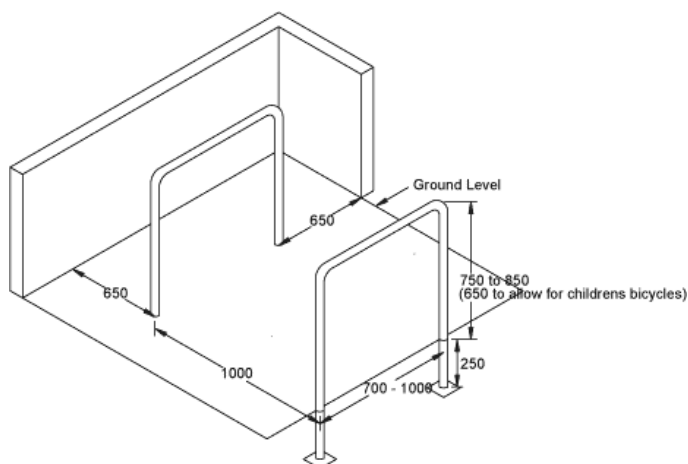
- be secure and normally with weather protection provided at least for employee parking;

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- be conveniently located at entrances to buildings;
- enjoy good natural observation;
- be well lit; and
- be located so it does not obstruct pedestrian and cycle routes.

3.180 Normally you should provide Sheffield stands as illustrated in Figure DG16 below. Stands that grip only the front wheel do not provide adequate support or security. When placed 1m apart and 0.5m from the wall, Sheffield stands can accommodate two bicycles. Where more than two stands are required, you may need to provide a 'toast rack' facility.

Figure DG16 Sheffield stand - inset 'toast rack' type. Sheffield stands can accommodate two cycles provided that stands are placed 1m apart and at least 500mm from any wall



- 3.181 Parking provision should be considered in relation to any travel plan associated with a development proposal. Please refer to Section DG16.
- 3.182 Please refer to Traffic Advisory Leaflet 5/02 for further information on cycle parking.

Section DG16: Considering parking provision together with transport assessments and travel plans

- 3.183 You should not consider vehicle, motorcycle or cycle parking provision in isolation from travel plans. The level and design of on-site parking and any proposed travel plan measures should reflect and complement each other. Guidance on developing travel plans and case study examples can be found at www.choosehowyoumove.co.uk.
- 3.184 For employment developments and other developments where travel plans are required, we will normally expect the development to include complementary facilities for motorcyclist and cyclists, for example, secure lockers (for storing clothes, and so on), showers and changing rooms.

Section DG17: Residential developments served by private drives and areas

3.185 This section provides design guidance on private drives and areas. For guidance on the Advance Payments Code (APC), please see Part 5, Section ANR2.

Principles

3.186 For developments of more than five dwellings, we will encourage developers to create, whenever possible, 'road' layouts that are to an adoptable standard and that will be offered for adoption. We will not normally adopt developments of five or fewer.

3.187 For developments of six or more dwellings, you should remember the implications both for yourself and house purchasers if we do not adopt the roads, for example:

- future maintenance liabilities;
- public liabilities
- street cleansing;
- lack of specific pedestrian facilities;
- lack of or poor standard of lighting, drainage and so on;
- we have no powers under the Highways Act; and
- the police have no powers to remove obstructions.

Poorly-maintained private areas can also detract from the quality and appearance of a development.

3.188 Private developments should normally be in the form of a cul-de-sac. You should try to avoid private 'through' routes as they are more likely to be used by the general public, possibly adding to the liabilities and future problems for residents.

3.189 For private developments of six dwellings or more, we will normally serve a notice on you with an assessment of the cost of the proposed roadworks under the Advance Payments Code (APC), to protect frontagers' interests. The cost of this will reflect the cost of the proposed street works and you should construct the works to an appropriate standard. However, because APCs have been served and money has been paid or retained, we are not indicating any future intention to adopt and maintain the street works at public expense. Please see Part 5, Section ANR2 for more information.

3.190 If you clearly indicate that the development roads are to be private, we may also require:

- you to deposit a map with us under Section 31 (6) of the Highways Act 1980 identifying the roads which are to remain private (and any to be adopted too as appropriate);
- you to erect road signs indicating that the roads are unadopted and to maintain the signs for as long as the roads remain unadopted, all at your expense;
- evidence that you have made clear to potential purchasers of the dwellings on unadopted roads what the status of the road will mean to them in practice;
- evidence that you have secured future maintenance of the roads, for example, a unilateral undertaking by you under Section 106 of the Town and Country Planning Act to set up a maintenance company;
- you to indemnify us against future petitioning by residents to adopt their road

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under Section 37 of the Highways Act 1980, where the road joins together two adopted highways*; and

- the boundary between the private road and the publicly- maintained highway to be clearly marked by a concrete edging, boundary posts or similar.

*Note: The indemnity should normally be a legal covenant placed on the properties to prevent petitioning. We must approve the wording of the covenant.

General geometry for site access to the external road network

3.191 **Note:** In all cases, the proposed development and its location must be acceptable to the Highway Authority in principle and safety of all highway users must not be compromised.

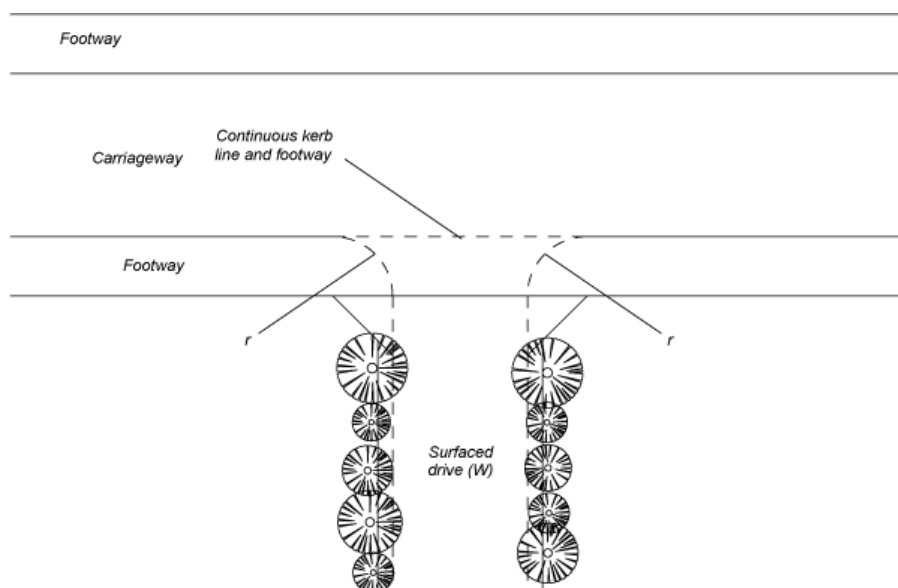
- On roads with a speed limit of 40mph speed limit or higher, or where vehicle speeds are more than 40 mph:
- we will encourage a development to be served by a road with an adoptable layout and access designed in line with the appropriate section of the Design Manual for Roads and Bridges see glossary; or
- where we accept that there is good reason why an adoptable layout cannot be achieved, the private drive and site access must be purpose-designed to a standard acceptable to us.

For all roads where the speed limit or recorded vehicle speeds is less than 40mph, even where you can demonstrate that you cannot achieve any form of adoptable layout or you do not want your development roads to be adopted (despite the implications in paragraph 3.183 above), you must still design the site access point to make sure that it does not affect the safety and efficient functioning of the highway or otherwise affect road users. (It will normally need to be designed in accordance with the Manual for Streets 1 and 2 or other standard acceptable to us.) Please see appendix E for more information.

3.192 You should provide the site access point in line with either Figure DG17 or Figure DG18, depending on the scale of the development. The access will only be acceptable if you have a maintenance agreement planned or in place.

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Figure DG17 Unadopted shared drive serving up to 25 dwellings



Minimum effective width (a)	<p>Single dwelling = 2.75m</p> <p>Two to five dwellings = 4.25m for a minimum distance of 5m behind the highway boundary.</p> <p>Six to 25 dwellings = 4.8m for a minimum distance of 5m behind the highway boundary(a)</p> <p>(In all cases add 0.5m if bounded by a wall, fence, hedge, line of trees or other similar obstruction on one side, 1m if bounded on both sides. See also paragraph 3.193 about access for refuse collection and 3.194 about access for emergency vehicles.)</p> <p>Add 0.5m if bounded by a wall on one side, 1m if bounded on both sides. See also paragraph 3.193 about access for refuse collection and 3.194 about access for emergency vehicles</p>									
Minimum drop crossing (b)	<p>For lightly trafficked residential streets (c). For classified or highly trafficked streets (d)</p> <table border="0"> <tr> <td>Single dwelling</td> <td>4 dropped kerbs (3.7m)</td> <td>7 dropped kerbs (6.4m)</td> </tr> <tr> <td>2 to 5 dwellings</td> <td>6 dropped kerbs (5.5m)</td> <td>8 dropped kerbs (7.3m)</td> </tr> <tr> <td>6 to 25 dwellings</td> <td>8 dropped kerbs (7.3m)</td> <td>10 dropped kerbs (9.2m)</td> </tr> </table>	Single dwelling	4 dropped kerbs (3.7m)	7 dropped kerbs (6.4m)	2 to 5 dwellings	6 dropped kerbs (5.5m)	8 dropped kerbs (7.3m)	6 to 25 dwellings	8 dropped kerbs (7.3m)	10 dropped kerbs (9.2m)
Single dwelling	4 dropped kerbs (3.7m)	7 dropped kerbs (6.4m)								
2 to 5 dwellings	6 dropped kerbs (5.5m)	8 dropped kerbs (7.3m)								
6 to 25 dwellings	8 dropped kerbs (7.3m)	10 dropped kerbs (9.2m)								
Vehicle visibility splays	As in Table DG4, measured from a set back of 2.4m									
Pedestrian visibility splays	Normally 1m x 1m both sides (no planting permitted) unless there are local circumstances which apply e.g. a significant pedestrian traffic generator is located in the vicinity (such as a school, playground or playing fields etc) in which case 2m x 2m is required									
Gradient	Preferably not greater than 1:20 for first 5m, (for 6-25 dwellings not greater than 1:30 for the first 10m), and should never exceed 1:12m									
Surfacing	Bound material, for example, bituminous or concrete, or block paving for at least the first 5m									

(a) If the driveway length is more than 25m, its minimum width should be 5m (plus any widening where bounded by walls) to enable access by refuse vehicles

(b) In certain circumstances, such as when parked vehicles restrict access, it will be necessary for a longer drop crossing to be provided. You may need to demonstrate an access is suitable by providing an appropriate vehicle swept path assessment.

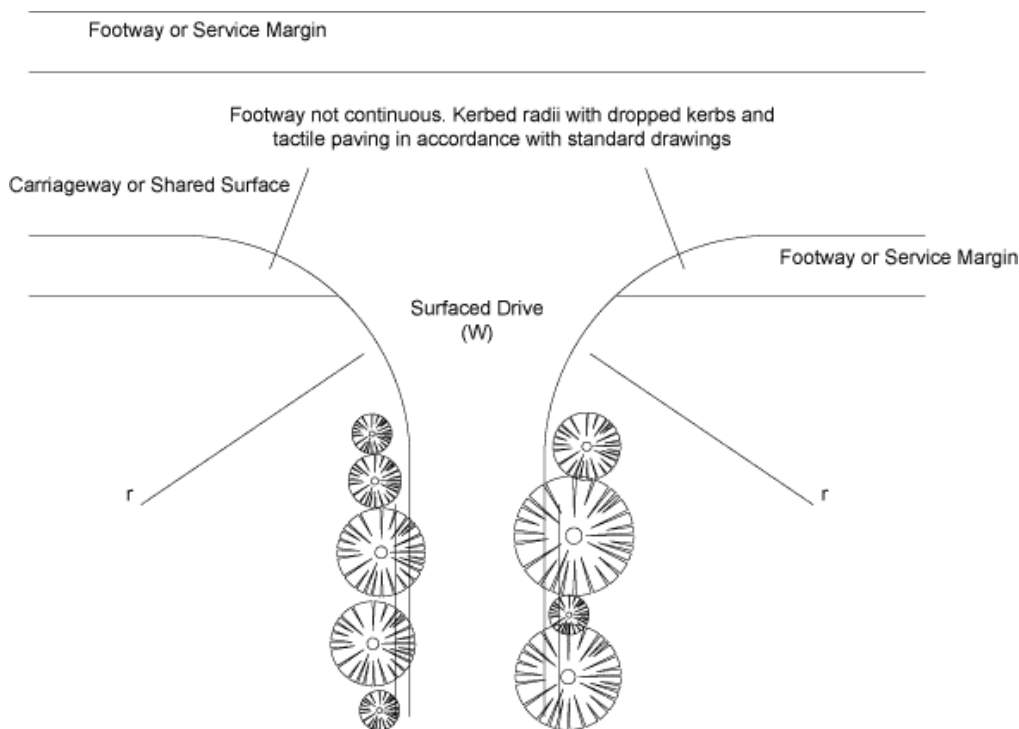
(c) Typically this includes streets which primarily serve a place function and have 85th

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percentile speeds of 30mph or less and where encroachment on the opposite traffic lane when exiting the site is not considered to create a safety hazard.

(d) Typically this includes streets which primarily serve a movement function and have 85th percentile speeds of 40 mph or less and where encroachment on the opposite traffic lane when exiting the site should be minimised.

Figure DG18 Unadopted shared drive serving more than 25 dwellings



	Access serving more than 25 dwellings
Minimum effective width (w)	5.5m
	Add 0.5m if bounded by wall on one side, 1m if bounded on both sides. See also paragraph 3.193 about access for refuse collection and 3.194 about emergency vehicles.
Minimum kerbed radii (r)	6m
Vehicle visibility splays	As in Table DG4, measured from a set back of 2.4m
Pedestrian visibility splays	2m by 2m both sides (no planting permitted)
Gradient	Preferably not greater than 1:20 for the first 5m and should never exceed 1:12
Surfacing	Bound material, for example, bituminous or concrete, or block paving for at least the first 5m

3.193 Any gates should be set back at least 5m from the highway boundary and should open inwards only.

3.194 If you cannot achieve layouts to Figure DG17 and Figure DG18, we may advise refusal in the interests of highway safety.

General layout of a private residential development

3.195 Even if a road is not to be adopted, you should still seek to make sure that:

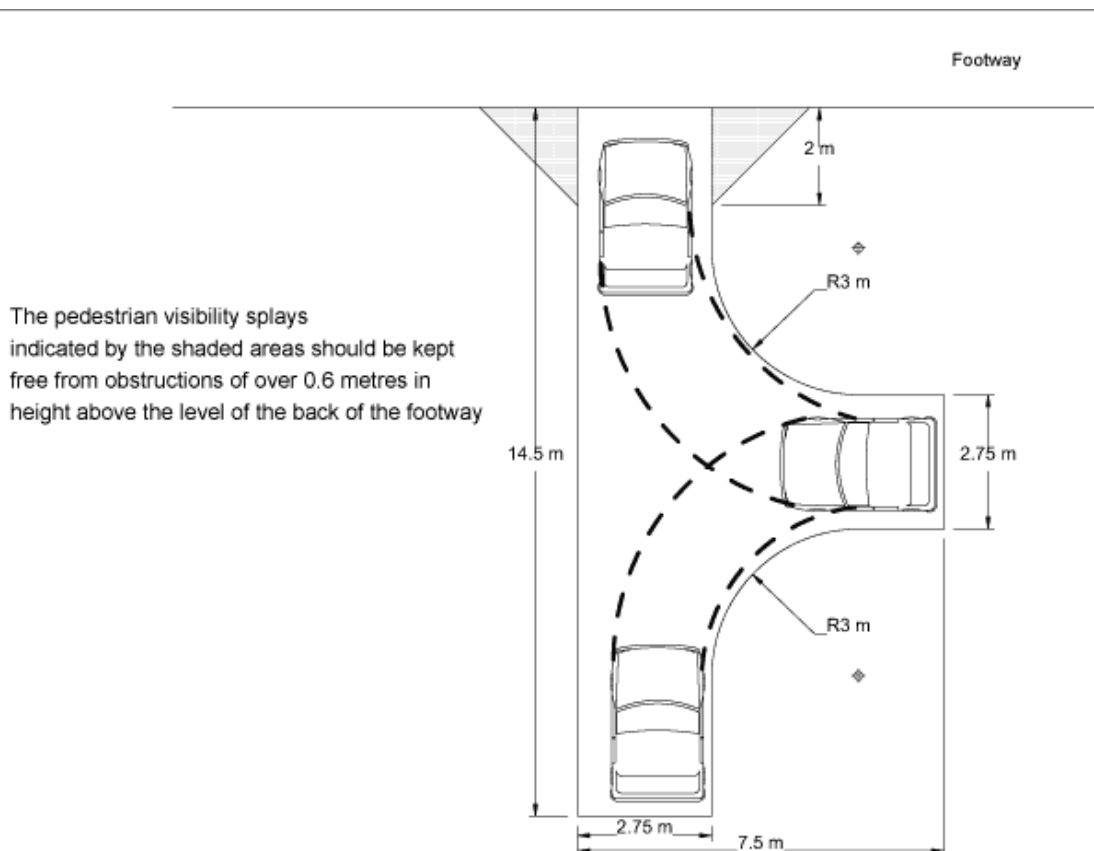
- your layouts are safe (both in terms of road safety and personal safety);
- your layouts are accessible to all likely users, including those with mobility impairments; and
- suitable long-term maintenance arrangements are in place. Turning facilities will

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- be required;
- where a proposed development takes access from a road with a speed limit above 40 mph; or
- for roads subject to speed limits less than 40 mph on any road carrying 300 vehicles per hour at its peak.

Elsewhere, turning facilities will not normally be required unless road safety would be compromised.

Figure DG19 Private drive turning facilities – typical example



3.196 For long drives and accesses, you should consult BS5906, 2005, which sets out maximum carry distances of 25m for refuse collection. Where this distance is exceeded, the British Standard recommends:

- a minimum drive width of 5m;
- providing turning heads within the site; and
- constructing the drive so it can carry a refuse vehicle.

The layout of the development should include measures to make sure that parked vehicles do not stop the use of any turning heads. Where 'wheelie bin' collection methods are used, you should consider providing a communal collection point within the site, close to the highway.

3.197 Where a development is situated more than 45m from the highway, you must cater for emergency vehicles by constructing the drive and any turning areas so they can cater for a commercial or service vehicle. The minimum width for access should be at least 3.7m (between kerbs) and fire vehicles should not have to reverse more than 20m. Your development must be in line with British Standard BS5906, 2005 and Building Regulations Approved Document B, Fire Safety 2006. You should also take into account the comments about parking in paragraph 3.191.

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Construction standards for private drives

3.198 The construction standards for drives serving up to and including 5 dwellings should normally be in accordance with that for footway vehicular and field accesses as shown in standard drawing SD/11/5A. In other cases, they should normally be in line with Table DG15. Contact us for permeable pavement design.

Table DG15: Private road construction depths

		Road less than 25m long serving 6 to 25 dwellings	Road more than 25m long serving 6 to 25 dwellings	Road serving more than 25 dwellings
Bituminous	Surface course CGM	30mm	30mm	40mm
	Binder course DBM	85mm	60mm	60mm
	Base DBM	-	110	150
	Sub-base & Capping	270mm Type 1 GSB ^(a)	See Table MC4	
Block Paving	Blockwork	60mm	80mm	80mm
	Bedding sand (compacted)	30mm	30mm	30mm
	Base DBM	90mm	110	150mm
	Sub-base & Capping	270mm Type 1 GSB ^(a)	See Table MC4	

Key

CGM = Close graded macadam

DBM = Dense bitumen macadam

^(a)The sub-base is to be increased to 365mm for CBR's of 2% or less

Garages and gated accesses

3.199 On plot garages to individual properties should be located so:

- cars can park in front of the garage doors: and
- the garage doors can be opened while the car is on the drive (see Table DG16);
- without the cars obstructing the highway, including any footway or turning facilities.

Where an access is to be gated, the gates should be set back 5m where they open inward and 6m where they open outwards. This is to ensure that the public highway (particularly areas used by pedestrians) is not obstructed if a vehicle is parked on the access in front of the gates.

Garage door type	Minimum distance from highway boundary
Roller-shutter, sliding or inward opening	5.5m
'Up-and-over'	6.1m
Hinged, outward opening	6.5m

3.200 Garages should preferably have the following minimum internal dimensions.

- Standard single = 6m x 3m, with minimum door width of 2.3m
- Use by disabled = 6m x 3.3m with minimum door width of 2.8m

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- Double = 6m x 6m, with minimum door width of 4.2m.

If a dwelling has no separate parking for cycles, it may affect whether we consider that the garage should be counted towards parking provision.

Section DG18: Employment and commercial developments served by private drives and areas

Principles

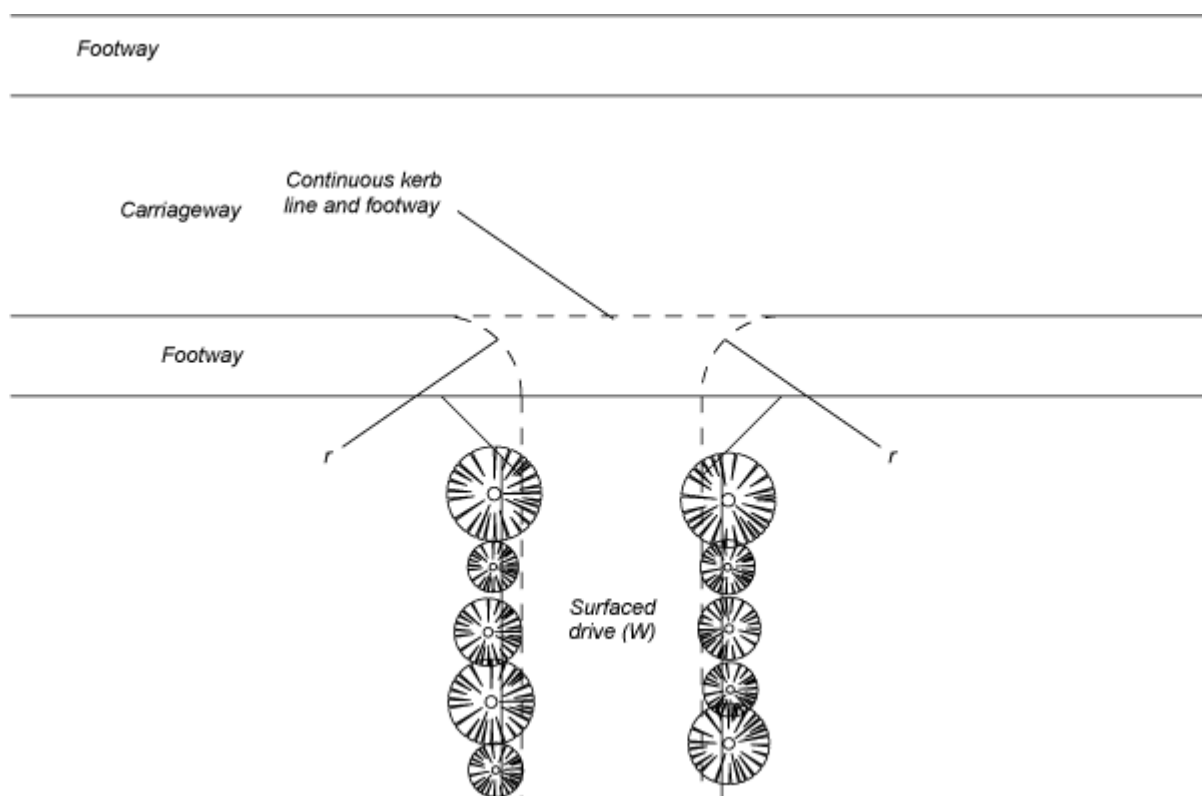
- 3.201 For multiple-building, multiple-occupation developments (developments occupied by more than one company) we will encourage you to provide road layouts that are to an adoptable standard and offer them for adoption whenever possible. We will not normally adopt single-occupancy developments.
- 3.202 Except for exempted developments, we will serve notice under the Advance Payment Code (APC) for all industrial and commercial developments to protect frontagers' interests. The cost of this will reflect the cost of the proposed street works and you should construct the works to an appropriate standard. However, because APCs have been served and money has been paid or retained, we are not indicating any future intention to adopt and maintain the street works at public expense. The requirements of paragraph 3.186 may also apply.

General geometry for site access to the external road network

- 3.203 Even where you can demonstrate that you cannot achieve a form of adoptable layout or you do not want your development roads to be adopted, you should still design the site access point to make sure that it does not affect the safety and efficient functioning of the highway or otherwise affect road users.
- 3.204 You should normally design site access in line with the appropriate parts of the Design Manual for Roads and Bridges and our Specification and standard drawings, unless the road to which your development connects falls within the definition of a road (street) as set out in appendix L.
- 3.205 Office developments (use class B1) up to 3000m² gross floor area (GFA) may be served by a dropped-kerb access arrangement as shown in Figure DG20. However, if you choose this option, you should note that we will recommend imposing planning conditions that restrict any change of use to general employment (use class B2 to B8). Depending on the scale of the development, you will need to obtain our specific approval for the construction details of the access.

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Figure DG20 Unadopted access serving up to 3000m² GFA of offices



Minimum effective width (w)	6m (Add 0.5m if bounded by a wall on one side, 1m if bounded on both sides.)
Minimum control radii (r)	6m
Vehicle visibility splays	As in Table DG4, measured from a set back of 2.4m
Pedestrian visibility splays	2m by 2m both sides. No planting permitted
Gradient	Preferably not greater than 1:20 for first 15m, and should never exceed 1:12
Surfacing	Bound material, for example, bituminous or concrete, or block paving for at least the first 15m

- 3.206 Regardless of the access type, you should provide separate footways or pedestrian routes within the site to minimise the safety risks of pedestrians coming into contact with HGVs. This could be in the form of footways or routes marked on the ground and segregated by bollards or railings.
- 3.207 Where any gates are to be provided, they should open inwards and be set back a distance appropriate to the type of vehicle likely to require access to the development.

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General layout of a private industrial or commercial development

- 3.208 Even if a road is not to be adopted you should still seek to make sure that:
- their layouts are safe (both in terms of road safety and personal safety);
 - they are accessible to all likely vehicles and other users, including those with impaired mobility; and
 - suitable long-term maintenance arrangements are in place.
- 3.209 You must also take into account the requirements of BS5906 2005 and Building Regulations Approved Document B, Fire Safety 2006, with regard to access for refuse collection and emergency vehicles (see paragraphs 3.193 and 3.194). You should design and construct any turning areas within 50m of the access junction to the adoptable design guidance to minimise the risk of vehicles having to reverse out of the development on to the public highway. The layout of the development should include measures to make sure that parked vehicles do not reduce the use of any turning heads or areas.

Section DG19: Marking the highway boundary

- 3.210 Wherever the extent of the adoptable highway is not clear – for example there is no wall, fence, or footway edge – you must install an agreed form of boundary marking.