MAGNA PARK Extension

HYBRID APPLICATION:

15/01531/OUT

Traffic & Transport:
Update of the Environmental Statement and Supplemental Information

4 March 2016

IDI Gazeley
Brookfield Logistics Properties

www.brookfieldlogisticsproperties.com

MAGNA PARK
LUTTERWORTH

IDI Gazeley
Brookfield Logistics Properties

IDI Gazeley Brookfield Logistics Properties

Magna Park Extension: Hybrid Application

ES Chapter 6: Traffic and Transport
Update of the Environmental Statement and Supplemental Information

Page intentionally blank

Author/Amended by:	Authorised by	Date:	Version:
Sean O'Connell	Jon Ashcroft	28/09/2015	1
Sean O'Connell	Jon Ashcroft	04/03/2016	2

Contents

6 Traffic and Transport

6.1 Introduction

6.1.1 This chapter of the Environmental Statement (ES) assesses the likely significant effects of the Proposed Development on the environment with respect to traffic and transport. In the original version of this chapter, car and HGV trip generation and distribution on the highway network surrounding the Proposed Development was based on a manual assessment of the traffic impact. The methodology is presented in detail in Section 6 of the TA (Ref 6-1). This updated version of the Traffic and Transport chapter is based on traffic flows obtained from the Leicester and Leicestershire Integrated Transport Model (LLITM), and the methodology is described in detail in the Second Supplementary Transport Assessment (Ref 6-7).

6.1.2 This chapter details relevant Government policies that the Proposed Development is required to comply with at national, regional and local levels. The chapter also provides a description of the baseline highway conditions and details the assessment methodology and significance criteria that will be used to assess the potential effects (both direct and indirect) as a result of the construction and operational phases of the Proposed Development. Mitigation measures are detailed as necessary.

6.1.3 The chapter concludes with a summary of the residual traffic and transportation impacts, along with a discussion regarding potential cumulative impacts on the surrounding highway network associated with the Proposed Development and other agreed consented developments.

6.1.4 This chapter has been prepared by Sean O'Connell (Aecom).

6.2 Policy and Guidance

National Planning Policy Framework

6.2.1 National planning policy in England is contained within the National Planning Policy Framework (NPPF) which was published in March 2012. The specific policies of the NPPF that relate to issues of transport and access are set out below.

6.2.2 **Paragraph 17** of the NPPF states that one of the core planning principles is the need to actively manage patterns of growth to make the fullest possible use of public transport, walking and cycling.

6.2.3 **Paragraph 29** says that the transport system needs to be balanced in favour of sustainable transport modes but that the Government recognises that opportunities to maximise sustainable transport solutions will vary from urban to rural areas.

6.2.4 **Paragraph 31** states that local authorities should work with neighbouring authorities and transport providers to develop strategies for the provision of viable infrastructure necessary to support sustainable development, including rail freight interchanges and other major generators of travel demand within their areas.

6.2.5 **Paragraph 32** states that all developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment. Decisions should take account of whether opportunities for sustainable modes have been taken up (depending on the location and nature of the site); safe and suitable access to the site can be achieved; and that improvements can be undertaken within the transport network to cost effectively limit any significant impacts. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

6.2.6 **Paragraph 35** states that plans should protect and exploit opportunities for the movement of goods or people. Developments should be located and designed where practical to: accommodate the efficient delivery of goods and supplies; have access to high quality public transport facilities; create safe and secure layouts which minimise conflicts between traffic and cyclists; incorporate facilities for charging plug-in and other ultra-low emission vehicles; and consider the needs of people with disabilities.

6.2.7 **Paragraph 36** seeks to ensure that all developments which generate significant amounts of movement should be required to provide a Travel Plan.

Planning Practice Guidance

6.2.8 In March 2014, the Government announced the launch of the Planning Practice Guidance (PPG) website. The PPG is intended to be read alongside the NPPF and we set out below the guidance that is most relevant to considerations of transport and access.

6.2.9 Part ID42 of the PPG provides more detailed guidance in respect of the use of travel plans, transport assessments and statements in decision-taking. Paragraph 002 (ID: 42-002-20140306) states travel plans, transport assessments and statements are all ways of assessing and mitigating the negative transport impacts of development in order to promote sustainable development. They are required for all development which generate significant amount of movements.

6.2.10 Paragraph 014 (ID: 42-014-20140306) states that the need for the scale, scope and level of detail required of a Transport Assessment or Statement should be established as early in the development management process as possible. Key issues to consider at the start of preparing a Transport Assessment or Statement may include the context of the proposal, the study parameters, assessment of public transport capacity, road trip generation and trip distribution, promotion of sustainable travel, safety implications and (where applicable) mitigation measures.

Local Planning Policy

6.2.11 The development plan comprises the adopted Harborough District Core Strategy (2011) and the saved policies of the Harborough District Local Plan (2001). We set out below the relevant local planning policy in respect of transport and access.

Harborough District Core Strategy

6.2.12 **Policy CS5** of the Core Strategy states that future development in the District will seek to maximise the use and efficiency of existing transport facilities and seek to achieve the best overall effect for transport for the district as it looks to a lower carbon future. All significant development proposals should provide for the co-ordinated delivery of transport improvements outlined in the place-based policies of the Strategy. The type of transport enabling and mitigation works provided by each development should be geared to transport improvements that are beneficial to the wider area and which can complement works to be provided by other developments.

6.2.13 **Policy CS14** states that transport interventions associated with additional development in and around Lutterworth will focus on improving air quality and reducing the adverse impacts of traffic flow in the town centre. This will be achieved by measures including resisting development that would result in additional HGVs passing through the town centre and supporting routeing schemes for Magna Park.

Harborough District Local Plan (Saved Policies)

6.2.14 **Policy TR/3** of the Local Plan states that the Council will refuse planning permission for new development where the traffic flow generated by the development would create a substantial adverse effect on the existing road network unless satisfactory and environmentally acceptable improvements can be implemented to alleviate the impacts of the development.

6.2.15 **Policy TR/10** states that parking provision in new development will be kept to the necessary minimum and will be considered against the safety of road users and effects on the character or appearance of the locality.

6.2.16 **Policy TR/11** states the Council will seek to enter into a legal agreement with applicants for planning permission to cover the costs of parking, cycling, pedestrian and/or public transport facilities.

Other Guidance

6.2.17 There are two documents that are particularly relevant to development of this site:

- Department for Transport – Circular 02/2013 'The Strategic Road Network and the Delivery of Sustainable Development' (Ref 6-2)

- A Strategy for the A5 2011-2026 A449 Gailey (Staffordshire) to A508 Old Stratford (Northamptonshire) (December 2013) (Ref 6-3) – Produced by the A5 Transport Group in conjunction with 18 county, district and borough councils including the HA, LCC, Warwickshire County Council and Harborough District Council.

6.2.18 In Circular 02/2013, the two paragraphs that are of particular relevance are 9 and 43.

6.2.19 Paragraph 9 states:

Development proposals are likely to be acceptable if they can be accommodated within the existing capacity of a section (link or junction) of the strategic road network, or they do not increase demand for use of a section that is already operating at over-capacity levels, taking account of any travel plan, traffic management and/or capacity enhancement measures that may be agreed. However, development should only be prevented or refused on transport grounds where the residual cumulative impacts are severe.

6.2.20 Paragraph 43 states:

The Highways Agency will adopt a graduated and less restrictive approach to the formation or intensification of use of access to the remainder of the strategic road network (i.e. not motorway or routes of near motorway standard). However, the preference will always be that new development should make use of existing junctions. Where a new junction or direct means of access is agreed, the promoter will be expected to secure all necessary consents, and to fund all related design and construction works.

6.2.21 In recent years there has been a growing concern from local planning authorities in the East and West Midlands regarding the performance and future role of the A5. This has led to the establishment of an A5 Transport Group of which the principal output is the document 'A Strategy for the A5 2011-2026'. The strategy is designed to set out a clear way forward regarding the future role and the priorities for investment in the A5 over the next 15 years.

6.2.22 The objectives of the A5 Strategy report are:

- To ensure that the A5 is fit for purpose in terms of its capacity and safety, both now and in the future;

- To allow the A5 to play its full and proper role in supporting and facilitating economic activity and growth at a local and national level;
- To promote and facilitate access to leisure and tourism within the area covered by the strategy;
- To assist in identifying the priority improvements along the A5 corridor that are needed to enable growth, reduce congestion, improve safety, improve air quality and deliver a sustainable transport system; and
- To reduce where possible, the impact of traffic on communities along the A5.

6.2.23 The Strategy suggests that the role of the A5 has diminished to more of a distributor role with the opening of the M1, M6 and M6 Toll. It is also recognised that the A5 remains a key artery of movement that supports and provides access to economic activity and growth.

6.3 Assessment Method

6.3.1 Guidance provided by IEMA (Ref 6-4) has been consulted in order to identify significance criteria applicable to the assessment of walking, cycling, public transport and vehicle trips. For a number of effects there are no readily available thresholds of significance, in which case interpretation and judgement has been applied based of knowledge of the site or quantitative data where available.

6.3.2 The significance of operational trips has also taken into consideration mitigation of the effects. The effects have been characterised as either:

- **Beneficial**: meaning that the changes produce benefits in terms of transportation and access (such as reduction of traffic, travel time or patronage, or provision of a new service, access or facility);
- **Negligible**: meaning that their bearing is too small to measure meaningfully; or
- **Adverse**: meaning that changes produce adverse effects in terms of transportation and access (such as increase of traffic, travel time, patronage or loss of service or facility).

6.3.3 Beneficial and adverse effects have been further characterised as:

- **Minor**: slight, very short or highly localised effect of no significant consequence (10% to 30% change);
- **Moderate**: limited effect (by extent, duration or magnitude) which may be considered significant (30% to 60% change); or
- **Major**: considerable effect (by extent, duration or magnitude) of more than local significance or in breach of recognised acceptability, legislation, policy or standards (greater than 60% change).

Table 6-1: Significance Criteria

Impact	Level of Significance			
	Negligible	Minor	Moderate	Major
Change in driver journey time / delay	Change of less than 2 minutes	Change of more than 2 minutes and less than 5 minutes	Change of more than 5 minutes and less than 20 minutes	Change of more than 20 minutes
Change in pedestrian and cyclist journey time / delay	Change of less than 2 minutes	Change of more than 2 minutes and less than 5 minutes	Change of more than 5 minutes and less than 10 minutes	Change of more than 10 minutes
Change in level of accessibility for pedestrian and cyclists	Change of less than 2 minutes in journey time	Change of more than 2 minutes and less than 5 minutes in journey time; Need to cross quiet road	Change of more than 5 minutes and less than 10 minutes in journey time; Need to cross busy road; Closure of one or more points of access to a location	Change of more than 10 minutes in journey time; Need to cross busy major road; Closure of all points of access to a location
Change in pedestrian and cyclist amenity	Change in road traffic or HGVs of less than 30%, or less than 10% if location considered sensitive	Change in road traffic or HGVs of 30% to 49%; Slight increase or decrease in width of footway/ cycleway	Change in road traffic or HGVs of 50% - 99%; Large change in width of footway/ cycleway; Closure or opening up of short stretch (<100m long) of footway/ cycleway	Change in road traffic or HGVs of 100% or more; Closure or opening of long stretch (>100m long) of footway/ cycleway
Public Transport	No change in passenger crowding	Increase in crowding on service below capacity	Increase in crowding on service above or close to capacity	Passenger demand results in crowded conditions

6.3.4 Further to the significance criteria set out above, the IEMA (Ref 6-4) recommends a detailed environmental assessment for highway links where:

- Traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and
- Specific environmental problems may occur (sensitive areas affected by traffic increases of at least 10% unless there are significant changes in the composition of traffic).

6.3.5 Before assessing the effects of the Proposed Development, this assessment establishes the baseline conditions with respect to existing road traffic, highway network and accessibility, and public transport facilities, as well as the parties that might be affected by the development,

6.3.6 Traffic counts were undertaken at a number of junctions in the vicinity of the Proposed Development to collect baseline traffic flow information.

6.3.7 Information gathered during site visits has also been used to establish current baseline conditions in terms of the highway network, accessibility and public transport facilities. This information has been supplemented by information obtained from maps and documents published by various authorities. This includes information on bus routes and timetables and on Public Rights of Way (PRoW) that are or could be affected by the Proposed Development.

6.3.8 For the purposes of this assessment, the Proposed Development has been assessed against a future baseline that includes the traffic and travel movements associated with consented developments (cumulative schemes – refer to Chapter 4: Assessment Methodology of the original ES) in the vicinity of the site. The assessment year for the future baseline is 2026, corresponding to the opening year of the development plus 10 years (refer to Chapter 2: The

Proposed Development of the original ES for further information on the indicative delivery of the Proposed Development).

6.3.9 The baseline data used in the assessment of transport impacts is described below. Baseline data has been derived for two scenarios:

- 2026 to include the Proposed Development; and
- 2026 with the Proposed Development and cumulative schemes.

6.3.10 In addition, an assessment has been undertaken for the construction phase of the project. It is anticipated that the construction phase will last for approximately 10 years. In order to quantify the level of road traffic that will be generated during the construction phases, the information presented in Section 11 of the TA (Ref 6-1) has been used.

6.4 Baseline Conditions

Surrounding Highway Network

6.4.1 Magna Park benefits from a central location within the UK and has excellent connections to the motorway network with Junction 20 of the M1, Junction 1 of the M6 and Junction 1 of the M69, reachable in less than 10 minutes.

6.4.2 The Daventry International Rail Freight Terminal (DIRFT) is situated approximately 13 kilometres (km) south of Magna Park at the junctions of the M1 (Junction 18), the A5 and the A428. The significance of this is that approximately 16% of all HGVs at Magna Park have an origin or destination at DIRFT emphasising the existing relationship between Magna Park and the railhead at DIRFT.

6.4.3 The proposed development site lies to the north west of Mere Lane which is a rural road with a carriageway width of approximately 5.5 metres. It is subject to the National Speed Limit and is unlit. It is also subject to a 7.5 tonne weight restriction except for access, prohibiting its use as a through route for HGVs.

6.4.4 There are four existing points of access on the section of Mere Lane that passes to the north west of Magna Park. They are all simple junctions. Travelling in a north easterly direction from the A5, the first is an access to Bittesby House which is currently occupied by Creative Bridge, a small marketing, public relations and communication business employing around 30 people.

6.4.5 The second is an access to the services farm for Magna Park. This is gated and in occasional use by maintenance vehicles and for environmental inspections.

6.4.6 The third is an access to Bittesby Cottages and the Brick Barn. The Brick Barn is occupied by Holovis International, a sensory experience design company specialising in the entertainment, industrial, retail and military sectors. Holovis currently has around 50 employees. Although the Brick Barn is adjacent to Bittesby House there is currently no vehicular connection between the two sites.

6.4.7 The fourth is a private means of access to Springfields Farm.

6.4.8 At its eastern end Mere Lane forms a crossroads with Lutterworth Road and Ullesthorpe Road. These roads are also rural in nature and to the north west, north and south east provide direct routes to the villages of Ullesthorpe, Ashby Parva and Bitteswell respectively.

6.4.9 At its western end Mere Lane forms a ghost island priority junction with the A5(T). Historically the A5 has provided a strategic route between London and Holyhead through large parts of southern and central England. This role has diminished to more of a distributor role with the

opening of the M1, M6 and M6 Toll. However, the corridor remains a key artery of movement which supports and provides access to economic activity and growth.

6.4.10 The A4303 provides a link between the M1 and the A5 and provides a bypass of Lutterworth to the south of the town. The Lutterworth bypass was provided by IDI Gazeley as part of the original Magna Park development.

6.4.11 The A4303 is a dual carriageway and is subject to the National Speed Limit. At its eastern end it forms a grade separated junction with the M1 at Junction 20. To the east of the motorway the road becomes reclassified as the A4304 and continues as a single carriageway to Market Harborough.

6.4.12 Between the Motorway and the A5 there are four further roundabouts. Travelling in a westerly direction from the Motorway, the first is a four-arm roundabout with the A426. To the south the A426 is a single carriageway which crosses the A5 at the Gibbet Hill roundabout before continuing to provide a direct link to the M6 Motorway at Junction 1.

6.4.13 To the north of the A4303 the A426 is also a single carriageway and provides access to Lutterworth town centre before continuing to provide an alternative to the M1 as a route to Leicester. To the north of the town centre, between the A426 and the M1, there are several industrial estates. These generate a significant number of commercial vehicles including HGVs through Lutterworth town centre.

6.4.14 The next roundabout on the A4303 also has four arms although the southern arm is an access to a mobile home park and is therefore lightly trafficked. Coventry Road/ Brookfield Way forms the northern arm and provides a route to the residential areas that have developed to the west of Lutterworth and also provides an alternative route to the town centre. There is a 7.5 tonne weight restriction on Coventry Road/ Brookfield Way.

6.4.15 The third roundabout is the main access to Magna Park. It has four arms with the northern arm, Hunter Boulevard, providing access to the main part of the Park. Approximately 400 metres to the east there is a secondary access to Magna Park via Shackelton Way. This forms a left in/ left out junction with the A4303.

6.4.16 The southern arm of the Magna Park access roundabout provides access to the Headquarters of George Clothing and to a separate unit occupied by Culina. This would also provide the only access to a consented HGV trailer park that was granted planning permission in 2012.

6.4.17 Two further units that are occupied by Notts Sport UK and TT Electronics and that lie outside the boundary of Magna Park, can also be reached from the southern arm of the roundabout via an access road that passes behind the George building before running parallel with the A4303. These buildings can also be accessed directly from the A4303 via a left in/ left out arrangement just to the east of Shackelton Way.

6.4.18 The final roundabout on the A4303 is the Cross in Hand roundabout, which is where the A4303 forms a junction with the A5. This roundabout has five arms with the A5 forming the northern and southern arms and the A4303 the eastern arm. Two minor roads, the B4207 and Coal Pit Lane form the other arms at the junction. On the approach to the roundabout, the A5 is a single carriageway although both to the north and to the south of the junction there are sections of dual carriageway that provide overtaking opportunities.

6.4.19 Approximately 4km to the south of the Cross in Hand roundabout is the Gibbet Hill roundabout. This also has five arms and is at the junction of the A5 and the A426. On the approach to the roundabout both roads are single carriageway. Some 2km to the south west of the roundabout, the A426 provides a direct link to Junction 1 of the M6 Motorway. This is a large four-arm grade separated junction that has traffic signals on the motorway off-slips and associated circulatory carriageways. The final arm at the Gibbet Hill roundabout is Gibbet Lane, a local route that provides access to a large aggregates plant.

6.4.20 To the north of the A4303, the A5 is a combination of dual and single carriageway. There are two sections of dual carriageway, one between Emmanuel and Lodge Cottages and White House Farm with a length of 2.1km and the other between the settlements of Wibtoft and Smockington with a length of 2.6km.

6.4.21 Junction 1 of the M69 is approximately 10.5km to the north of the A4303. It is a large six-arm grade separated junction which, with the exception of the B4109 in the south west corner of the junction, is controlled by traffic signals. The on and off-slips of the M69, the A5 and the B4109 make up the six arms at the junction. To the north of the junction, the B4109 provides one of the main routes into Hinckley from the south.

Public Transport Facilities

6.4.22 Magna Park is served by a single bus service operated by Arriva (Hinckley Bus). Route 8 operates between Hinckley and Lutterworth via Magna Park where there are bus stops on Hunter Boulevard and Wellington Parkway. From Lutterworth there are connections to Market Harborough as Route 58 and to Leicester as Route X44. Through tickets are available on all services. As part of Route X44, there are also limited school services to Rugby.

6.4.23 Route 8 provides one service per hour between 6am and 7pm. The journey time between Magna Park and Lutterworth is around 10 minutes and between Magna Park and Hinckley is around half an hour. The service operates from Monday to Saturday. There is no service on a Sunday or on Bank Holidays.

6.4.24 Route 58 takes just over half an hour to travel between Lutterworth and Market Harborough. There are six services per day operating approximately every two hours between 7am and 5pm. The service operates from Monday to Saturday. There is no service on a Sunday or on Bank Holidays.

6.4.25 Route X44 takes an hour to travel between Lutterworth and Leicester. There are six services per day to Leicester and four making the return to Lutterworth. The service operates from Monday to Saturday. There is no service on a Sunday or on Bank Holidays

Pedestrian and Cycle Facilities

6.4.26 The location of Magna Park limits its potential to attract large numbers of pedestrians or cyclists and based on the 2001 Census Journey to Work Data for the daytime population in the Ullesthorpe Ward, only around 1% chose either of these modes to travel to work.

6.4.27 The greatest potential for cycling is to encourage trips to and from Lutterworth and there is a segregated shared footway/ cycleway that runs along the north side of the A4303 between Coventry Road and Magna Park. At the access to Magna Park there are uncontrolled crossings together with dropped kerbs and tactile paving on all but the western arm of the roundabout. A sign on Coventry Road just to the north of the A4303, informs cyclists that Magna Park can be reached in 2km.

6.4.28 Based on an average cycling speed of 24.14 km/hr (15mph) it is apparent that Magna Park is within easy cycling distance of Lutterworth, which can be reached in around five minutes.

6.4.29 The distance from the centre of Lutterworth to the site is around 4km while the main residential part of the town, which has grown up to the west of the centre, and some of the surrounding villages are a little closer at around 3km.

6.4.30 The most direct route for pedestrians from Lutterworth is via the shared footway/ cycleway that runs on the north side of the A4303.

6.4.31 There are a number of footpaths and bridleways crossing the site, some of which are permissive under the stewardship scheme. Where practicable, for example the route to the east of the existing lagoon and the route that runs in a north westerly direction between Mere Lane and Bittesby House, these will be maintained. In other cases, for example the route that passes through the centre of the Proposed Development site and the route to the west of the lagoon, these will be diverted to ensure that the exiting level of access is maintained.

6.4.32 There are a number of footpaths and minor roads that provide direct links from Magna Park to Lutterworth and Bitteswell. Woodby Lane is a narrow lightly trafficked road that connects the north east corner of Magna Park to Ullesthorpe Road just to the west of Bitteswell. Woodby Lane is not open to through traffic but cyclists and pedestrians can access Magna Park at its western end. Although not lit, it is part of an attractive route for these modes particularly during the summer months.

6.4.33 In June 2013, LCC undertook cycle counts at two locations. The first was on the cycleway on Coventry Road between the A4303 and Brookfield Way and the second was on the cycleway on Lutterworth Road in the village of Bitteswell. Table 6-2 below summarises the number of cyclists recorded on these routes.

Table 6-2: Average Number of Cyclists on Cycleways Recorded in June 2013

No. Cyclists	Coventry Road			Lutterworth Road, Bitteswell		
	AM Peak	PM Peak	AADT	AM Peak	PM Peak	AADT
Total Two-way	2	6	16	3	5	19

Traffic Flow Characteristics

6.4.34 Peak hour junction turning counts were undertaken in May and June 2014 at the following locations:

- M1 Junction 20;
- A4303/ A426 roundabout;
- A4303/ Coventry Road roundabout;
- A4303/ Shackelton Way roundabout;
- A5/ A4303 roundabout (Cross in Hand roundabout);
- A5/ A426 roundabout (Gibbet Hill roundabout);
- M6 Junction 1;
- A5/ Mere Lane junction; and
- M69 Junction 1.

6.4.35 The scope of the traffic counts was discussed and agreed with the Highways Agency, Leicestershire County Council and Warwickshire County Council.

6.4.36 In addition data was collected at various locations using automatic traffic counters (ATCs). ATCs measure both the number of vehicle movements and speed of vehicles using a particular section of road. They also allow the number of HGVs to be recorded.

6.4.37 ATCs are normally in place for a period of at least one week. They therefore provide a continuous flow of information allowing hourly and daily variations to be reported.

6.4.38 A review of the survey data identified the morning and evening peak flows occurred during the periods 7.30am to 8.30am and 5.00pm to 6.00pm respectively.

6.4.39 In order to assess the environmental effects of the Proposed Development it was necessary to establish a future Base Scenario. This was obtained from the LLITM traffic model, and the methodology is described in detail in the Second Supplementary Transport Assessment (Ref 6-7). The assessment year of 2026 was agreed with Leicestershire County Council.

6.4.40 Peak hour two-way flows on the highway network in the vicinity of the site are set out in the table below together with the proportion of vehicles that are heavy goods vehicles. The location of the flows is shown on a plan provided in Appendix C.4 of Volume 3 of the original ES.

Table 6-3: Future Baseline Peak Hour Two-Way Traffic Flows

Location	AM Peak		PM Peak	
	All Vehs	HGV	All Vehs	HGV
A – Hunter Boulevard	1,586	344	1,016	221
B – A4303 between Hunter Boulevard & A5	2,686	293	2,239	184
C – A5 south of A4303	1,809	226	1,390	111
D – B4027 Lutterworth Road	900	20	1,009	12
E – Coal Pit Lane	524	7	402	6
F – A5 north of A4303	1,706	141	1,719	103
G – A5 north of Mere Lane	1,448	152	1,301	99
H – Mere Lane east of A5	287	10	242	6
I – Mere Lane east of Magna Park	155	6	150	4
J – A4303 between Hunter Bld & Coventry Road	2,344	297	2,344	250
K – Coventry Rd between A4303 & Brookfield Way	1,037	20	1,077	14
L – A4303 between Coventry Road & A426	1,692	283	1,748	249
M – A426 Rugby Road north of A4303	1,894	150	1,876	49
N – A4303 between A426 & M1 J20	3,173	447	3,080	311
O – A4304 east of M1 J20	1,315	79	1,527	70

6.5 Construction Effects and Mitigation

Impact on Local Highway Network

6.5.1 A detailed analysis of the construction phase has been undertaken and is presented in Chapter 2: The Proposed Development of the original ES. It includes an indicative construction programme, predicted construction traffic flows, vehicle routing and access and compound locations.

6.5.2 Construction of the Proposed Development is expected to commence in 2016 and be completed in 2026. Construction will begin in 2016 at Parcel G (DHL) including the associated highway works on the A5 and Mere Lane. This will be followed in 2017 by construction at Parcel F (Holovis) and in 2018 at Parcel E (Magna Park Hub).

6.5.3 From 2019 it is expected that one development parcel will be completed per year starting in the south west corner at Parcel H and moving progressively north westwards towards Parcel L which is programmed for completion towards the end of 2025.

6.5.4 Construction of the rail freight shuttle terminal is programmed to start in 2019 at the same time as Parcel H. This will represent the worst case in terms of traffic impact during the

construction phase and therefore 2019 has been selected as the assessment year for the purposes of this ES.

6.5.5 Construction of the structural landscaped area (Parcels A1, A2 and A3), the principal access corridor (Parcel B), Bittesby Country Park (Parcel C), the Meadowland (Parcel D) and the reed beds and bio discs (Parcels M1 and M2) is programmed to continue throughout the entire construction period. However work on these elements of the development will not be continuous and will occur at the appropriate time as the development progresses. For example, the southern end of the principal access corridor will need to be in place to coincide with the opening of the Magna Park Hub in 2019 whereas the northern end will not be required until the latter stages to serve Parcels J, K and L. Consequently the traffic movements associated with these elements of the development will be spread out throughout the construction period and will not have a significant impact on the external highway network.

6.5.6 In order to minimise disruption to existing businesses and residents and minimise the impact on the surrounding highway network, general construction site operations will, as far as practicable, take place between 07:30 and 18:30 (Monday to Friday) and 08:30 to 14:30 (Saturday). Dispensation to work outside these hours will require prior approval from the relevant authorities. The core construction working hours will ensure that construction employee traffic will generally arrive and depart outside the peak hours.

6.5.7 Permitted routes for construction traffic will be agreed with LCC prior to the commencement of construction on site. The relevant highway authorities will be consulted about providing direction signage on the surrounding roads to avoid vehicles using inappropriate routes to reach the site. Appointed contractors will be required to adhere to the existing Magna Park routing agreement to ensure that all construction related traffic uses principal and strategic routes to access the site.

6.5.8 It is envisaged that at the start of the construction period there will be a need for three site compounds, one for the construction of Parcel G (DHL) and two for the proposed highway works. The position of the compounds has not been finalised although it is expected that the one for Parcel G will be on the area allocated for car parking while the compounds for the highway works will be adjacent to the A5 and Mere Lane.

6.5.9 Temporary haul roads will be required to provide access to the compounds from the existing highway network. It is envisaged that for the construction of development within and to the south of the Magna Park Hub (Parcels E to I), all construction related traffic will access the compounds from Mere Lane.

6.5.10 There is a 7.5 tonne weight restriction on Mere Lane although the Traffic Regulation Order has an exemption for loading. LCC has acknowledged that subject to an acceptable Construction and Environmental Management Plan (CEMP) there is no reason in principle why Mere Lane should not be used for access to the site compounds.

6.5.11 For development to the north of the Hub (Parcels J, K and L) it is envisaged that access will be taken from the proposed roundabout on the A5 at the northern end of the development. This will require the A5 roundabout to be constructed prior to work commencing on these parcels for which a temporary site compound and haul road will be required. It is assumed that the haul road would extend northwards from the Hub allowing access to the compound for the A5 highway works. Once the roundabout is complete, construction traffic for Parcels J, K and L would access the site at this point avoiding the need for it to pass the Hub and the units to the south that will by that time be fully operational.

6.5.12 Access to the site of the rail freight shuttle terminal will be from the southern arm of the existing roundabout on the A4303 that serves the main part of Magna Park. The southern arm currently serves two existing plots occupied by Culina and George.

6.5.13 The likely peak level of HGVs will be in the order of 200 movements per day, split equally between Parcel H on the main part of the site and the rail freight shuttle terminal to the south of the A4303.

6.5.14 Over an 11 hour working day this results in an average two-way flow of 18 HGVs per hour, with 9 accessing the site via Mere Lane and 9 via the southern arm of the existing roundabout on the A4303 that serves the main part of Magna Park. This level of activity is expected to continue for a period of eight weeks (weeks 23 to 30).

6.5.15 A reasonable proportion of construction traffic movements will be generated by construction workers travelling to/from work and by the delivery of materials. These trips will mainly occur in cars and light goods vehicles (LGVs).

6.5.16 The likely peak level of car/LGV traffic will be in the order of 220 vehicles per day. This level of activity is expected to continue for a period of one week (week 35). During the previous four weeks (weeks 31 to 34) the level of activity will be in the order of 120 cars/LGV movements per day.

6.5.17 Based on the anticipated working hours, the vast majority of journeys to/ from work will avoid the peak hours on the highway network. Deliveries will be evenly spread throughout the day.

6.5.18 The peak periods of activity for cars/LGVs and HGVs will not coincide, with the peak period of activity for cars and LGVs occurring towards the end of the construction period by which time the number of HGVs will have reduced by half. However, for the purposes of this assessment, it has been assumed that the peak periods of activity for the different vehicle types will coincide ensuring a robust assessment of the construction impacts.

6.5.19 An indication of the peak construction traffic flows during the AM and PM peak hours is set out in the table below. The locations are shown on a plan provided in Appendix C4 of Volume 3 of the original ES.

Table 6-4: Two-Way Traffic Flows Generated During Construction

Location	AM Peak		PM Peak	
	All Vehs	HGV	All Vehs	HGV
A – Hunter Boulevard	0	0	0	0
B – A4303 between Hunter Boulevard & A5	20	10	20	10
C – A5 south of A4303	12	6	12	6
D – B4027 Lutterworth Road	0	0	0	0
E – Coal Pit Lane	0	0	0	0
F – A5 north of A4303	20	9	20	9
G – A5 north of Mere Lane	13	6	13	6
H – Mere Lane east of A5	19	9	19	9
I – Mere Lane east of Magna Park	0	0	0	0
J – A4303 between Hunter Bld & Coventry Road	16	8	16	8
K – Coventry Rd between A4303 & Brookfield Way	0	0	0	0
L – A4303 between Coventry Road & A426	16	8	16	8
M – A426 Rugby Road north of A4303	0	0	0	0
N – A4303 between A426 & M1 J20	16	8	16	8
O – A4304 east of M1 J20	0	0	0	0

6.5.20 The impact of the traffic generated during the construction phase is presented in the following two tables.

Table 6-5: Impact of Proposed Development During Construction Phase in AM Peak

Location	2016 Baseline		Construction		Total		% Increase	
	All Vehs	HGV	All Vehs	HGV	All Vehs	HGV	All Vehs	HGV
A	1,586	344	0	0	1,586	344	0.0%	0.0%
B	2,686	293	20	10	2,706	303	0.7%	3.4%
C	1,809	226	12	6	1,821	232	0.7%	2.7%
D	900	20	0	0	900	20	0.0%	0.0%
E	524	7	0	0	524	7	0.0%	0.0%
F	1,706	141	20	9	1,726	150	1.2%	6.4%
G	1,448	152	13	6	1,461	158	0.9%	4.0%
H	287	10	19	9	306	19	6.6%	86.5%
I	155	6	0	0	155	6	0.0%	0.0%
J	2,344	297	16	8	2,360	305	0.7%	2.7%
K	1,037	20	0	0	1,037	20	0.0%	0.0%
L	1,692	283	16	8	1,708	291	0.9%	2.8%
M	1,894	150	0	0	1,894	150	0.0%	0.0%
N	3,173	447	16	8	3,189	455	0.5%	1.8%
O	1,315	79	0	0	1,315	79	0.0%	0.0%

Table 6-6: Impact of Proposed Development During Construction Phase in PM Peak

Location	2016 Baseline		Construction		Total		% Increase	
	All Vehs	HGV	All Vehs	HGV	All Vehs	HGV	All Vehs	HGV
A	1,016	221	0	0	1,016	221	0.0%	0.0%
B	2,239	184	20	10	2,259	194	0.9%	5.4%
C	1,390	111	12	6	1,402	117	0.9%	5.4%
D	1,009	12	0	0	1,009	12	0.0%	0.0%
E	402	6	0	0	402	6	0.0%	0.0%
F	1,719	103	20	9	1,739	112	1.2%	8.8%
G	1,301	99	13	6	1,314	105	1.0%	6.1%
H	242	6	19	9	261	15	7.8%	145.0%
I	150	4	0	0	150	4	0.0%	0.0%
J	2,344	250	16	8	2,360	258	0.7%	3.2%
K	1,077	14	0	0	1,077	14	0.0%	0.0%
L	1,748	249	16	8	1,764	257	0.9%	3.2%
M	1,876	49	0	0	1,876	49	0.0%	0.0%
N	3,080	311	16	8	3,096	319	0.5%	2.6%
O	1,527	70	0	0	1,527	70	0.0%	0.0%

6.5.21 Construction phase traffic will result in an increase in traffic on the short section of Mere Lane between the A5 and the site access of 6.6% and 7.8% in the AM and PM peaks respectively. The corresponding increase in HGV traffic is 87% and 145%. Elsewhere on the local network the maximum increase in traffic is 1.2%, and the maximum increase in HGV traffic is 8.8%.

6.5.22 This section of Mere Lane is currently subject to a 7.5 tonne weight restriction, and as such the number of HGVs is very low (10 in the AM peak and 6 in the PM peak). A relatively small increase in the number of HGVs therefore appears to have a very significant impact, albeit the actual increase as a result of the construction phase is only an additional 9 HGVs in both peaks.

6.5.23 Construction traffic is not expected to result in any capacity issues on the local network, or have a significant effect on journey times. Therefore, based on the criteria in Table 6-1, the impact of construction traffic on the local network is expected to be **negligible**.

Impact on Public Transport

6.5.24 The potential effects on the existing bus route serving Magna Park (Route 8) of additional patronage could be:

- Crowding on buses;

- Congestion at bus stops; and
- Congestion on footpaths on routes to bus stops.

6.5.25 It is not anticipated that many construction staff will travel to the site by bus and therefore the existing service will be able to accommodate the small additional demand. Although bus passenger numbers have not been obtained from the bus operator, observations made on site indicate that as it passes through Magna Park Route 8 has ample spare capacity.

6.5.26 Therefore the effect of additional construction staff on the capacity of the existing bus route is expected to be **negligible**.

Impact on Pedestrians and Cyclists

6.5.27 As shown in Table 6-6 and 6-7, construction phase traffic will result in an increase in peak hour traffic of up to 7.8% on the section of Mere Lane between the A5 and the new roundabout linking the existing Magna Park to the Proposed Development. On the same section of road, HGV flows are expected to increase by up to 145%.

6.5.28 This section of Mere Lane is currently subject to a 7.5 tonne weight restriction and as such the number of HGVs is very low (10 in the AM peak and 6 in the PM peak). A relatively small increase in the number of HGVs therefore appears to have a very significant impact albeit the actual increase as a result of the Proposed Development is only an additional 9 HGVs in both the AM and PM peaks.

6.5.29 The most significant impact of the predicted increases in traffic flows on Mere Lane will be on existing users of the route including employees and visitors of the two businesses located at Bittesby House and the Brick Barn.

6.5.30 Construction phase traffic is therefore expected to have a **short term major adverse** impact on pedestrian and cyclist amenity on this section of Mere Lane.

6.5.31 Elsewhere on the local network the maximum increase in traffic is 1.2%, and the maximum increase in HGV traffic is 8.8%. Therefore, based on the criteria set out in Table 6-1, the impact of construction traffic is **negligible**.

6.6 Operational Effects and Mitigation

6.6.1 This section considers the scale and potential impact of the additional traffic that would be generated after completion of the Proposed Development.

Impact on Local Highway Network

6.6.2 In the original version of this chapter, car and HGV trip generation and distribution on the highway network surrounding the Proposed Development was based on a manual assessment of the traffic impact. This update is based on traffic flows obtained from the Leicester and Leicestershire Integrated Transport Model (LLITM), and the methodology is described in detail in the Second Supplementary Transport Assessment (Ref 6-7).

6.6.3 The LLITM model runs used in the assessment included traffic generated by cumulative developments in the future year baseline scenario. In order to remove this traffic from the baseline case the cumulative scheme traffic calculated in the original manual assessment was subtracted from the LLITM model baseline flows.

6.6.4 The estimated peak hour trip generation at the locations shown on the plan provided in Appendix C4 of Volume 3 of the original ES is summarised in the table below.

Table 6-7: Two-Way Traffic Flows Generated by Proposed Development During Operational Phase

Location	AM Peak		PM Peak	
	All Vehs	HGV	All Vehs	HGV
A – Hunter Boulevard	-57	-43	-42	-26
B – A4303 between Hunter Boulevard & A5	-273	-18	-284	-2
C – A5 south of A4303	69	23	28	21
D – B4027 Lutterworth Road	33	-1	31	-1
E – Coal Pit Lane	-70	-1	20	1
F – A5 north of A4303	-85	-4	-159	1
G – A5 north of Mere Lane	489	64	478	59
H – Mere Lane east of A5	443	56	474	38
I – Mere Lane east of Magna Park	85	0	75	0
J – A4303 between Hunter Bld & Coventry Road	98	20	111	30
K – Coventry Rd between A4303 & Brookfield Way	-43	-5	-38	-3
L – A4303 between Coventry Road & A426	124	33	154	45
M – A426 Rugby Road north of A4303	0	6	10	11
N – A4303 between A426 & M1 J20	161	13	114	37
O – A4304 east of M1 J20	14	-1	5	0

6.6.5 The impact of the traffic generated by the Proposed Development on the above locations in the AM and PM peaks is presented in table 6-9 and 6-10 below.

Table 6-8: Impact of Proposed Development During Operational Phase - AM Peak

Location	2026 Baseline		Development		Total		% Increase	
	All Vehs	HGV	All Vehs	HGV	All Vehs	HGV	All Vehs	HGV
A	1,586	344	-57	-43	1,529	301	-3.6%	-12.6%
B	2,686	293	-273	-18	2,413	275	-10.2%	-6.1%
C	1,809	226	69	23	1,878	249	3.8%	10.2%
D	900	20	33	-1	933	19	3.6%	-4.8%
E	524	7	-70	-1	454	5	-13.4%	-20.5%
F	1,706	141	-85	-4	1,620	137	-5.0%	-2.9%
G	1,448	152	489	64	1,938	216	33.8%	42.4%
H	287	10	443	56	730	67	154.3%	542.2%
I	155	6	85	0	240	6	54.8%	0%
J	2,344	297	98	20	2,442	317	4.2%	6.8%
K	1,037	20	-43	-5	994	15	-4.2%	-24.8%
L	1,692	283	124	33	1,816	316	7.3%	11.8%
M	1,894	150	0	6	1,895	157	0.0%	4.3%
N	3,173	447	161	13	3,333	461	5.1%	3.0%
O	1,315	79	14	-1	1,329	78	1.1%	-0.8%

Table 6-9: Impact of Proposed Development During Operational Phase - PM Peak

Location	2026 Baseline		Development		Total		% Increase	
	All Vehs	HGV	All Vehs	HGV	All Vehs	HGV	All Vehs	HGV
A	1,016	221	-42	-26	974	194	-4.1%	-12.0%
B	2,239	184	-284	-2	1,955	182	-12.7%	-1.3%
C	1,390	111	28	21	1,418	132	2.0%	18.7%
D	1,009	12	31	-1	1,040	11	3.0%	-7.8%
E	402	6	20	1	422	7	4.9%	19.5%
F	1,719	103	-159	1	1,560	104	-9.3%	1.1%
G	1,301	99	478	59	1,780	158	36.8%	59.9%
H	242	6	474	38	716	44	195.9%	611.7%
I	150	4	75	0	225	4	50.0%	0%
J	2,344	250	111	30	2,454	280	4.7%	11.8%
K	1,077	14	-38	-3	1,040	11	-3.5%	-22.5%
L	1,748	249	154	45	1,902	294	8.8%	18.0%
M	1,876	49	10	11	1,887	59	0.5%	22.4%
N	3,080	311	114	37	3,194	348	3.7%	12.0%
O	1,527	70	5	0	1,532	70	0.4%	0.0%

6.6.6 Average delay per vehicle during the AM and PM peaks at each of the junctions assessed is set out in Table 6-11 and 6-12 below, with and without the Proposed Development traffic. As noted above, the LLITM model runs used in the assessment included traffic generated by cumulative schemes in the future year baseline scenario. It was not possible to determine delays due to the baseline traffic only (i.e. excluding the cumulative scheme traffic), and therefore the delays shown in the tables below are based on data from the original manual assessment.

Table 6-10: Average Driver Delay - AM Peak

Junction		Average delay per vehicle (sec)		
		2026 Base	2026 Base + Dev	Change
1	M1 Junction 20	3.0	3.6	+0.6
2	A4303/A426 roundabout	25.2	6.6	-18.6
3	A4303/Coventry Road roundabout	4.8	6.0	+1.2
4	A4303/ Shackleton Way junction	1.2	1.2	0
5	A4303/ Hunter Boulevard roundabout	3.6	4.2	+0.6
6	A5/ A4303 (Cross in Hand) roundabout	5.4	6.6	+1.2
7	A5/ Mere Lane junction	0.6	4.8	+4.2
8	M69 Junction 1	46.0	68.9	+22.9
9	A5/ A426 (Gibbett Hill) roundabout	7.2	8.4	+1.2
10	M6 Junction 1	20.7	21.1	+0.4
11	Mere Lane/ site access	0	3.0	+3.0
12	A5/ site access	0	6.6	+6.6

Table 6-11: Average Driver Delay - PM Peak

Junction		Average delay per vehicle (sec)		
		2026 Base	2026 Base + Dev	Change
1	M1 Junction 20	3.0	3.0	0
2	A4303/ A426 roundabout	7.2	4.2	-3.0
3	A4303/ Coventry Road roundabout	3.0	4.2	+1.2
4	A4303/ Shackleton Way junction	1.8	2.4	+0.6
5	A4303/ Hunter Boulevard roundabout	2.4	3.0	+0.6
6	A5/ A4303 (Cross in Hand) roundabout	4.2	4.8	+0.6
7	A5/ Mere Lane junction	0.6	3.6	+3.0
8	M69 Junction 1	49.5	54.1	+4.6
9	A5/ A426 (Gibbett Hill) roundabout	7.8	8.4	+0.6
10	M6 Junction 1	18.6	17.3	-1.3
11	Mere Lane/ site access	0	3.0	+3.0
12	A5/ site access	0	4.2	+4.2

6.6.7 Total delays along three main routes through the local network have also been calculated, by summing the delay at each junction along the route. The delays shown in the tables below are based on data from the original manual assessment. The delay at each junction relates to the particular turning movement involved. The routes assessed are as follows:

- M6(W) to M1(N), via junctions 10 – 9 – 2 – 1;
- A5(N) to M1(S), via junctions 8 – 7 – 6 – 5 – 4 – 3 – 2 – 1;
- Lutterworth to Rugby, via junctions 2 – 9 – 10.

Table 6-12: M6(W) to M1(N) Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base	2026 Base + Dev	2026 Base	2026 Base + Dev
10	M6 Junction 1	33.3	34.9	39.4	39.9
9	A5/ A426 (Gibbett Hill) roundabout	5.4	6.0	5.4	5.4
2	A4303/A426 roundabout	10.8	6.0	9.0	4.2
1	M1 Junction 20	2.4	3.0	3.0	3.0
Total		51.9	49.9	56.8	52.5
Change		-2.0		-4.3	

Table 6-13: M1(N) to M6(W) Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base	2026 Base + Dev	2026 Base	2026 Base + Dev
1	M1 Junction 20	2.4	2.4	2.4	2.4
2	A4303/A426 roundabout	6.0	9.0	3.6	3.6
9	A5/ A426 (Gibbett Hill) roundabout	7.2	7.8	5.4	6.0
10	M6 Junction 1	11.3	13.0	7.7	8.9
Total		26.9	32.2	19.1	20.9
Change		+5.3		+1.8	

6.6.8 The Proposed Development results in reduced journey times for drivers travelling from the M6 to the M1(N), due to the proposed improvements to the A4303/A426 roundabout and the associated reduction in driver delay. For drivers travelling between the M1(N) and the M6, journey times will increase by between 2 to 5 seconds.

Table 6-14: A5(N) to M1(S) Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base	2026 Base + Dev	2026 Base	2026 Base + Dev
8	M69 Junction 1	57.0	145.1	48.5	56.8
7	A5/ Mere Lane junction	0	5.4	0	3.0
6	A5/ A4303 (Cross in Hand) rbt	7.2	7.8	3.0	4.2
5	A4303/ Hunter Boulevard rbt	4.2	4.2	2.4	3.0
4	A4303/ Shackleton Way junction	0	0	0	0
3	A4303/ Coventry Road rbt	2.4	2.4	3.0	4.8
2	A4303/ A426 roundabout	4.2	3.6	5.4	4.8
1	M1 Junction 20	2.4	3.0	3.0	3.0
Total		77.4	171.5	65.3	79.6
Change		+94.1		+14.3	

Table 6-15: M1(S) to A5(N) Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base	2026 Base + Dev	2026 Base	2026 Base + Dev
1	M1 Junction 20	3.0	3.6	2.4	2.4
2	A4303/ A426 roundabout	6.0	9.0	3.6	3.6
3	A4303/ Coventry Road rbt	4.2	6.6	3.0	3.0
4	A4303/ Shackleton Way junction	0	0	0	0
5	A4303/ Hunter Boulevard rbt	3.0	4.8	2.4	3.0
6	A5/ A4303 (Cross in Hand) rbt	3.6	4.8	3.6	3.6
7	A5/ Mere Lane junction	0	4.2	0	4.8
8	M69 Junction 1	42.8	50.1	48.5	54.4
Total		62.6	83.1	63.5	74.8
Change		+20.5		+11.3	

6.6.9 The Proposed Development will result in an increase in journey times in both directions and during both peaks. The maximum increase in journey time is on the route from the A5(N) to the M1(S), with journey times expected to increase by 89 seconds in the AM peak. Most of this delay occurs at the M69 Junction 1.

Table 6-16: Lutterworth to Rugby Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base	2026 Base + Dev	2026 Base	2026 Base + Dev
2	A4303/ A426 roundabout	13.2	5.4	13.2	5.4
9	A5/ A426 (Gibbett Hill) roundabout	7.2	7.8	5.4	6.0
10	M6 Junction 1	12.1	13.1	8.4	8.8
Total		32.5	26.3	27.0	20.2
Change		-6.2		-6.8	

Table 6-17: Rugby to Lutterworth Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base	2026 Base + Dev	2026 Base	2026 Base + Dev
10	M6 Junction 1	11.4	11.9	10.8	10.8
9	A5/ A426 (Gibbett Hill) roundabout	9.0	10.8	13.8	15.0
2	A4303/ A426 roundabout	10.8	6.0	9.0	4.2
Total		31.2	28.7	33.6	30.0
Change		-2.5		-3.6	

6.6.10 The Proposed Development results in reduced journey times for drivers travelling in both directions during both the AM and PM peaks. There are small increases in driver delay at the A5/A428 and A4303/A426 junctions, but these are more than compensated for by the reduction in delay at the A4303/A426 roundabout due to the proposed improvements.

6.6.11 The maximum average delay at any individual junction is approximately 23 seconds (M69 J1), and the maximum increase in journey time on the selected routes is 89 seconds (A5(N) to M1(S)). Based on the significance criteria set out in Table 6-1, the impact on users of the local highway network is considered **negligible**.

Proposed Mitigation

6.6.12 As part of the Proposed Development, the section of Mere Lane between the A5 and the new roundabout linking the existing Magna Park to the Proposed Development is being realigned and widened to accommodate the predicted increase in traffic. A new roundabout is also proposed at the A5/ Mere Lane junction to replace the existing priority junction. This provides the necessary additional capacity to accommodate the operational phase traffic and provides a safer connection with the A5.

6.6.13 As part of the scheme the dual carriageway on the A5 will be extended from Emmanuel Cottages to the new roundabout over a distance of approximately 500m.

6.6.14 Access to Bittesby House will be maintained through the provision of a new junction from Mere Lane. The existing access to Bittesby Farm and the Brick Barn, which is occupied by Holovis International, will be closed. Access will be maintained by vehicles sharing the first part of the DHL access road and by the formation of a new vehicular connection extending in a north westerly direction from the end of the DHL access road.

6.6.15 The highway improvements proposed in support of this application will be designed to accommodate the increase in HGVs. They will provide the necessary capacity and the new roundabout on the A5 will make it easier and safer for HGVs to join the Trunk Road.

6.6.16 It is also proposed to relocate the existing weight restriction to the north east of the new roundabout on Mere Lane to prevent HGVs from using Mere Lane as an alternative route to Lutterworth and the A426. Employees at the Proposed Development will also be discouraged from using Mere Lane for the journey to and from work and this message will be reinforced in the Travel Plan (Ref 6-5). The Travel Pan is provided in Appendix C2 of Volume 3 of the original ES.

6.6.17 The new roundabout on the A5 will allow some traffic from the existing Magna Park to use a new access route via Mere Lane and Argosy Way thus avoiding the A5/ A4303 (Cross In Hand) roundabout completely. This helps to mitigate the impact of the Proposed Development traffic on this junction, with average delay per vehicle increasing by just 1.2 seconds in the AM peak and 0.6 seconds in the PM peak.

6.6.18 Capacity improvements are proposed at the A4303/ A426 roundabout. Full details of the scheme are provided in Section 8 of the TA (Ref 6-1) but in summary each entry arm has been increased to three lanes and road markings have been added to the circulatory carriageway to help guide vehicles through the roundabout.

6.6.19 During the AM peak, the average delay per vehicle at this junction will reduce from 25.2s without development to 6.6s with development and with improvements. The corresponding reduction in average delay per vehicle in the PM peak is 7.2s to 4.2s.

6.6.20 There is a committed scheme as part of DIRFT III to upgrade the Gibbet Hill junction to a signalised roundabout. The DIRFT III scheme includes carriageway widening, improved carriageway markings and the signalisation of the approach and circulatory carriageways of the A426 north, A5 north and A5 south.

6.6.21 IDI Gazeley is proposing to partially signalise the Gibbet Hill roundabout to accommodate the proposed extension at Magna Park. A description of the scheme and a copy of the proposed layout are presented in the Second Supplementary Transport Assessment (Ref 6-7).

6.6.22 A Travel Plan (Ref 6-5) has been prepared for the Proposed Development and submitted in support of the application. The Travel Plan (Ref 6-5) identifies measures to encourage more sustainable means of transport, and includes targets for modal change away from single

occupancy car use and a financial commitment to monitor progress towards achieving these targets.

6.6.23 The Travel Plan (Ref 6-5) focuses on the promotion of car sharing through the establishment of a car sharing scheme that will be available to all employees and by encouraging cycling through the provision of covered, well-lit and secure cycle parking and the offer of interest free loans or subsidies for employees who cycle to work to purchase a bicycle.

6.6.24 IDI Gazeley has recently implemented the Magna Park website in part to encourage and enable all employees to communicate to identify car sharing opportunities and other forms of transport sharing. As it evolves the website will also include information on public transport services, ticketing arrangements and links to maps showing recommended cycle and pedestrian routes.

6.6.25 As well as reducing the impact of the Proposed Development, the website also has the potential to encourage existing Magna Park employees to switch to sustainable means of transport thus reducing the impact of the whole site on the local highway network.

Impact on Public Transport

6.6.26 A description of the bus services operating in the vicinity of the Proposed Development was set out in the baseline conditions. In summary, Magna Park is served by one bus per hour between 6am and 7pm operating between Hinckley and Lutterworth. Bus stops are provided throughout the park on Hunter Boulevard and at the junction of Wellington Parkway and Harrier Parkway.

6.6.27 Observations indicate that there is currently ample spare capacity on the bus as it passes through Magna Park.

6.6.28 The Proposed Development is expected to employ approximately 6,000 people. The breakdown between uses is as follows:

- B1 use, Logistics Institute 666
- B8 logistics & warehousing 5,342
- Total 6,008

6.6.29 The Framework Travel Plan (Ref 6-5) includes a target modal split for the proportion of employees using the bus at the Proposed Development of 2.9%. Assuming a 3 shift system for the B8 staff, approximately 1,781 staff would be working per shift and therefore at shift changeover times there would be approximately 52 arrivals and 52 departures by bus. Staff from the B1 uses and the Logistics Institute would generate approximately 19 arrivals in the AM peak and 19 departures in the PM peak.

6.6.30 Staff from the B8 uses and the B1/Logistics Institute are likely to be arriving and departing at different times. Therefore the maximum impact on bus services will be at shift changeover times. The existing service provides one bus per hour. The additional demand on the bus service is likely to cause crowded conditions on the existing service, and therefore the Proposed Development is expected to have a **major adverse** impact on public transport.

Proposed Mitigation

6.6.31 As part of the detailed application for DHL that was submitted in June 2015, bus stops were proposed to the south east of the new roundabout on Mere Lane on the section of Hunter Boulevard that will be extended between existing Plots 1400 and 1500. Shelters, seating and

timetable information will be provided and the potential to provide real-time information is being discussed with LCC.

6.6.32 Providing a connection into Magna Park from Mere Lane will allow the existing bus route to divert into Magna Park from Mere Lane thus avoiding the need to join the A5 and negotiate the Cross in Hand roundabout. Footways will be provided to enable direct pedestrian routes into the site and at-grade uncontrolled crossings will be provided at the splitter islands of the new roundabout to ensure that pedestrians can cross Mere Lane and the extension to Argosy Way safely.

6.6.33 Since the hybrid application was submitted in October 2015 there has been significant progress towards improving the public transport offer at Magna Park. Following a meeting with Arriva on 4 February 2016 it was confirmed that they will be introducing a new bus service between Leicester and Magna Park from the beginning of April 2016. Route X45, which will operate between Thurmaston and Magna Park via Leicester city centre and Lutterworth High Street, will in the first instance operate one return service at each shift changeover at 6am, 2pm and 10pm. A route map and timetable for the X45 are presented in Appendix O of the Second Supplementary Transport Assessment (Ref 6-7).

6.6.34 In discussion with Arriva it is apparent, however, that should the service prove to be successful there is scope to operate additional services both to satisfy additional demand at the shift changeover if it exists and to extend the service to other parts of the day, most notably the traditional peak hours. There may also be opportunities to introduce other new services and/or to enhance the existing Route 8 between Hinckley and Lutterworth. One option that was discussed in relation to Route 8 was providing an extension to Nuneaton where based on Census data and on recent surveys undertaken at Magna Park, a significant proportion of the Magna Park workforce resides.

6.6.35 On 2 March 2016 there was a meeting with Stagecoach to discuss public transport improvements at Magna Park. Stagecoach confirmed that it will be introducing a new bus service between Rugby and Magna Park from the beginning of May 2016. The service will be introduced on a trial basis for a minimum of six months. The details of the service are still to be finalised but Stagecoach has produced a draft timetable which is presented in Appendix P of the Second Supplementary Transport Assessment (Ref 6-7). The draft timetable indicates that the service will be focused on the main shift changeover times with the potential to provide additional services to cater for the more traditional peak hours.

6.6.36 In common with the new Arriva service it was suggested by Stagecoach that should the service prove to be successful there is scope to operate additional services from Rugby and the potential of introducing services from other locations such as Nuneaton and Coventry.

6.6.37 In order to promote the new service Stagecoach indicated that it would also be willing to offer introductory concessions for any new employee using the service. A typical example would be a half price weekly ticket for the first week of employment.

6.6.38 To support the public transport improvements at Magna Park, IDI Gazeley is currently reviewing the bus stop provision with a view to providing additional stops and to upgrade existing facilities. As a minimum the intention is for each stop to have a flag, a pole and updated timetable information together with shelters and seating. IDI Gazeley will work closely with the bus operators and LCC to ensure that bus stops are located in optimum locations and that the most appropriate facilities are provided.

Impact on Pedestrians and Cyclists

6.6.39 As shown in Table 6-9 and 6-10, operational phase traffic will result in an increase in peak hour traffic of up to 196% on the section of Mere Lane between the A5 and the new

roundabout linking the existing Magna Park to the Proposed Development. On the same section of road, HGV flows are expected to increase by up to 612%.

6.6.40 This section of Mere Lane is currently subject to a 7.5 tonne weight restriction and as such the number of HGVs is very low (10 in the AM peak and 6 in the PM peak). A relatively small increase in the number of HGVs therefore appears to have a very significant impact, albeit the actual increase as a result of the Proposed Development is only an additional 56 HGVs in the AM peak and 38 in the PM peak.

6.6.41 The most significant impact of the predicted increases in traffic flows on Mere Lane will be on existing users of the route including employees and visitors of the two businesses located at Bittesby House and the Brick Barn.

6.6.42 Based on the significance criteria in Table 6-1, operation phase traffic is expected to have a **major adverse** impact on pedestrian and cyclist amenity on this section of Mere Lane.

6.6.43 Increases of between 30-49% in HGV traffic will occur on the A5 (north of Mere Lane). Operational traffic is therefore expected to have a **minor adverse** impact on pedestrian and cyclist amenity at this location.

6.6.44 Elsewhere on the network impacts are below 30% and are therefore considered **negligible**.

Proposed Mitigation

6.6.45 There are number of infrastructure and routing improvements that will have beneficial impacts. These include the provision of direct and safe routes connecting the Proposed Development to the existing Magna Park and the diversion of existing permissive bridleways that cross the site to ensure that access to the network of bridleways to the north west of the Proposed Development is maintained.

6.6.46 The redundant section of Mere Lane will be stopped-up under Section 247 of the Town and Country Planning Act 1990 (Ref 6-6). The proposal is for to be reclassified as a public footpath providing an informal link to an existing public footpath on the west side of the A5.

6.6.47 Pedestrian and cycle facilities will be incorporated into the Proposed Development including a new footway and safe crossing points linking the proposed bus stops on Argosy Way to the Proposed Development, a shared bridle/ pedestrian crossing of the access road serving the Proposed Development and secure, covered and well-lit cycle parking facilities within the car park of the Proposed Development.

6.7 Residual Effects

Construction – Impact on Local Highway Network

6.7.1 The introduction of a Construction Environmental Management Plan (CEMP) including an access strategy for the site will help to minimise the impact of construction traffic on all modes of transport. This will be committed through a condition to the planning permission, and the appointed contractor will be responsible for implementation of the CEMP.

6.7.2 HGV movements to the site will be managed to ensure that disruption to existing residents and local businesses will be kept to a minimum. The appointed contractor will be required to adhere to the existing Magna Park routing plan to ensure that all HGVs use the strategic and principal road network for access.

6.7.3 The residual impact on the local highway network during the construction phase is therefore predicted to be of **negligible** significance.

Construction – Impact on Public Transport

6.7.4 The residual impact of additional construction staff on the capacity of the existing bus route is expected to be **negligible**.

Construction – Impact on Pedestrians and Cyclists

6.7.5 Impacts on pedestrian and cyclist amenity will be minimised through the CEMP. The residual impact is considered to be of **short term major adverse** significance on Mere Lane, and of **negligible** significance elsewhere.

Operational – Impact on Local Highway Network

6.7.6 The maximum average delay at any individual junction is approximately 23 seconds (M69 J1), and the maximum increase in journey time on the selected routes is 89 seconds (A5(N) to M1(S)).

6.7.7 Application of the Travel Plan (Ref 6-5) will help to reduce the volume of traffic generated by the Proposed Development and over time this will help to offset the impact on the surrounding highway network.

6.7.8 Based on the significance criteria set out in Table 6-1, the residual impact on users of the local highway network is considered **negligible**.

Operational – Impact on Public Transport

6.7.9 The new bus services to be introduced by Arriva and Stagecoach will be sufficient to accommodate the additional demand generated by the Proposed Development, and also offer a better service for existing employees within Magna Park. There will also be improvements to the existing bus stop facilities

6.7.10 The residual impact on Public Transport is considered to be **moderate beneficial**.

Operational – Impact on Pedestrians and Cyclists

6.7.11 The redundant section of Mere Lane will be stopped-up and reclassified as a public footpath, providing an informal link to an existing public footpath on the west side of the A5. The new section of public footpath will be approximately 500m long. Therefore the residual impact on this section of Mere Lane is considered to be **major beneficial**.

6.7.12 Pedestrian and cycle facilities will be incorporated into the Proposed Development including a new footway and safe crossing points linking the proposed bus stops on Argosy Way to the Proposed Development, a shared bridle/ pedestrian crossing of the access road serving the Proposed Development and secure, covered and well-lit cycle parking facilities within the car park of the Proposed Development.

6.7.13 Overall, pedestrian amenity will improve with the Proposed Development. Although there is one road (A5 north of Mere lane) that will experience an increases in HGV traffic of more than 30%, this will in part be balanced by the pedestrian and cycleway facility improvements, and the residual impact on pedestrians and cyclists is considered to be **negligible**.

6.8 Cumulative Effects

Other Developments Accounted For

6.8.1 Developments for which cumulative impacts need to be considered are described in detail in the TA (Ref 6-1), including information on trip generation and distribution on the local highway network.

Construction Phase

6.8.2 The expectation is that the Proposed Development will be constructed over a period of approximately 11 years. Construction of the schemes considered in the cumulative impact assessment is expected to take place over a period of one to 15 years. There is likely to be some overlap between construction of these schemes and the Proposed Development, but this is unlikely to significantly change the impact of construction traffic on the local highway network, which is expected to remain **negligible**.

Operation Phase – Impact on Local Highway Network

6.8.3 Trip generation for the schemes considered in the cumulative impact assessment is presented in detail in the TA (Ref 6-1) and is summarised in Table 6-18 below.

Table 6-18: Two-Way Traffic Flows Generated by Cumulative Schemes

Location	AM Peak		PM Peak	
	All Vehs	HGV	All Vehs	HGV
A – Hunter Boulevard	43	6	38	3
B – A4303 between Hunter Boulevard & A5	155	19	152	22
C – A5 south of A4303	167	26	228	34
D – B4027 Lutterworth Road	6	0	8	0
E – Coal Pit Lane	31	2	52	4
F – A5 north of A4303	211	15	248	21
G – A5 north of Mere Lane	211	15	244	21
H – Mere Lane east of A5	0	0	0	0
I – Mere Lane east of Magna Park	0	0	0	0
J – A4303 between Hunter Bld & Coventry Road	174	21	168	22
K – Coventry Rd between A4303 & Brookfield Way	94	0	97	0
L – A4303 between Coventry Road & A426	126	21	121	22
M – A426 Rugby Road north of A4303	121	0	110	0
N – A4303 between A426 & M1 J20	358	26	285	30
O – A4304 east of M1 J20	28	0	26	0

6.8.4 The impact of the traffic generated by the cumulative schemes at the locations identified above is presented in Table 6-19 and Table 6-20 below.

Table 6-19: Cumulative Impact – Two-way Traffic Flows 2026 AM Peak

Location	2026 Base + Dev		Cumulative		Total		% Increase	
	All Vehs	HGV	All Vehs	HGV	All Vehs	HGV	All Vehs	HGV
A	1,529	301	43	6	1,572	307	2.8%	2.0%
B	2,413	275	155	19	2,568	294	6.4%	6.9%
C	1,878	249	167	26	2,045	275	8.9%	10.5%
D	933	19	6	0	939	19	0.6%	0.0%
E	454	5	31	2	485	8	6.9%	40.6%
F	1,620	137	211	15	1,831	152	13.0%	10.9%
G	1,938	216	211	15	2,149	231	10.9%	6.9%
H	730	67	0	0	730	67	0.0%	0.0%
I	240	6	0	0	240	6	0.0%	0.0%
J	2,442	317	174	21	2,616	338	7.1%	6.6%
K	994	15	94	0	1,088	15	9.5%	0.0%
L	1,816	316	126	21	1,942	337	6.9%	6.6%
M	1,895	157	121	0	2,016	157	6.4%	0.0%
N	3,333	461	358	26	3,692	486	10.7%	5.6%
O	1,329	78	28	0	1,357	78	2.1%	0.0%

Table 6-20: Cumulative Impact – Two-way Traffic Flows 2026 PM Peak

Location	2026 Base + Dev		Cumulative		Total		% Increase	
	All Vehs	HGV	All Vehs	HGV	All Vehs	HGV	All Vehs	HGV
A	974	194	38	3	1,012	197	3.9%	1.5%
B	1,955	182	152	22	2,107	204	7.8%	12.1%
C	1,418	132	228	34	1,646	166	16.1%	25.4%
D	1,040	11	8	0	1,048	11	0.8%	0.0%
E	422	7	52	4	474	12	12.4%	57.2%
F	1,560	104	248	21	1,808	125	15.9%	20.6%
G	1,780	158	244	21	2,024	180	13.7%	13.5%
H	716	44	0	0	716	44	0.0%	0.0%
I	225	4	0	0	225	4	0.0%	0.0%
J	2,454	280	168	22	2,622	302	6.8%	7.9%
K	1,040	11	97	0	1,137	11	9.3%	0.0%
L	1,902	294	121	22	2,023	316	6.4%	7.5%
M	1,887	59	110	0	1,997	59	5.8%	0.0%
N	3,194	348	285	30	3,479	379	8.9%	8.7%
O	1,532	70	26	0	1,558	70	1.7%	0.0%

6.8.5 Average delay per vehicle during the AM and PM peaks at each of the junctions assessed is set out in 6-22 and 6-23 below, with and without the cumulative scheme traffic.

Table 6-21: Average Driver Delay - AM Peak

Junction		Average delay per vehicle (sec)		
		2026 Base + Dev	2026 Base + Dev + Cumulatives	Change
1	M1 Junction 20	3.6	4.2	+0.6
2	A4303/A426 roundabout	6.6	10.8	+4.2
3	A4303/Coventry Road roundabout	6.0	7.8	+1.8
4	A4303/ Shackleton Way junction	1.2	1.2	0
5	A4303/ Hunter Boulevard roundabout	4.2	5.4	+1.2
6	A5/ A4303 (Cross in Hand) roundabout	6.6	8.4	+1.8
7	A5/ Mere Lane junction	4.8	5.4	+0.6
8	M69 Junction 1	68.9	205.5	+136.6
9	A5/ A426 (Gibbett Hill) roundabout	8.4	36.7	+28.3
10	M6 Junction 1	21.1	22.3	+1.2
11	Mere Lane/ site access	3.0	3.0	0
12	A5/ site access	6.6	6.6	0

Table 6-22: Average Driver Delay - PM Peak

Junction		Average delay per vehicle (sec)		
		2026 Base + Dev	2026 Base + Dev + Cumulatives	Change
1	M1 Junction 20	3.0	3.6	+0.6
2	A4303/ A426 roundabout	4.2	5.4	+1.2
3	A4303/ Coventry Road roundabout	4.2	4.8	+0.6
4	A4303/ Shackleton Way junction	2.4	2.4	0
5	A4303/ Hunter Boulevard roundabout	3.0	3.0	0
6	A5/ A4303 (Cross in Hand) roundabout	4.8	5.4	+0.6
7	A5/ Mere Lane junction	3.6	4.2	+0.6
8	M69 Junction 1	54.1	66.4	+12.3
9	A5/ A426 (Gibbett Hill) roundabout	8.4	38.4	+30.0
10	M6 Junction 1	17.3	18.3	+1.0
11	Mere Lane/ site access	3.0	3.0	0
12	A5/ site access	4.2	4.2	0

6.8.6 Total delays along the routes identified in para. 6.6.7 have also been calculated, by summing the delay at each junction along the route. The results are presented in Table 6-23 to Table 6-28 below.

Table 6-23: M6(W) to M1(N) Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base + Dev	2026 Base + Dev + Cumulatives	2026 Base + Dev	2026 Base + Dev + Cumulatives
10	M6 Junction 1	34.9	36.5	39.9	40.4
9	A5/ A426 (Gibbett Hill) roundabout	6.0	22.4	5.4	24.1
2	A4303/A426 roundabout	6.0	7.2	4.2	5.4
1	M1 Junction 20	3.0	3.0	3.0	3.6
Total		49.9	69.1	52.5	73.5
Change		+19.2		+21.0	

Table 6-24: M1(N) to M6(W) Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base + Dev	2026 Base + Dev + Cumulatives	2026 Base + Dev	2026 Base + Dev + Cumulatives
1	M1 Junction 20	2.4	3.0	2.4	3.0
2	A4303/A426 roundabout	9.0	15.6	3.6	4.8
9	A5/ A426 (Gibbett Hill) roundabout	7.8	39.2	6.0	41.7
10	M6 Junction 1	13.0	13.8	8.9	9.6
Total		32.2	71.6	20.9	59.1
Change		+39.4		+38.2	

6.8.7 The Cumulative Development traffic results in increased journey times for drivers travelling between the M6(W) and the M1(N) in both directions. Journey times increases are greatest for those travelling from the M1(N) to the M6(W) in both the AM and PM peaks, at 39 and 38 seconds respectively.

Table 6-25: A5(N) to M1(S) Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base + Dev	2026 Base + Dev + Cumulatives	2026 Base + Dev	2026 Base + Dev + Cumulatives
8	M69 Junction 1	145.1	68.4	56.8	124.5
7	A5/ Mere Lane junction	5.4	6.0	3.0	3.6
6	A5/ A4303 (Cross in Hand) rbt	7.8	12.0	4.2	5.4
5	A4303/ Hunter Boulevard rbt	4.2	4.8	3.0	3.0
4	A4303/ Shackleton Way junction	0	0	0	0
3	A4303/ Coventry Road rbt	2.4	3.0	4.8	5.4
2	A4303/ A426 roundabout	3.6	3.6	4.8	5.4
1	M1 Junction 20	3.0	3.0	3.0	3.6
Total		171.5	100.8	79.6	150.9
Change		-70.7		+71.3	

Table 6-26: M1(S) to A5(N) Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base + Dev	2026 Base + Dev + Cumulatives	2026 Base + Dev	2026 Base + Dev + Cumulatives
1	M1 Junction 20	3.6	3.6	2.4	3.0
2	A4303/ A426 roundabout	9.0	15.6	3.6	4.8
3	A4303/ Coventry Road rbt	6.6	7.8	3.0	3.6
4	A4303/ Shackleton Way junction	0	0	0	0
5	A4303/ Hunter Boulevard rbt	4.8	5.4	3.0	2.4
6	A5/ A4303 (Cross in Hand) rbt	4.8	5.4	3.6	4.2
7	A5/ Mere Lane junction	4.2	4.8	4.8	5.4
8	M69 Junction 1	50.1	47.7	54.4	31.0
Total		83.1	90.3	74.8	54.4
Change		+7.2		-20.4	

6.8.8 The Cumulative Development traffic results in increased journey times for drivers travelling from the M1 (S) to the A5(N) in the AM peak, and the A5(N) to the M1(S) in the PM peak. There are reductions in journey time in the reverse directions. The most significant changes occur at the M69 J1.

Table 6-27: Lutterworth to Rugby Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base + Dev	2026 Base + Dev + Cumulatives	2026 Base + Dev	2026 Base + Dev + Cumulatives
2	A4303/ A426 roundabout	5.4	8.4	5.4	6.6
9	A5/ A426 (Gibbett Hill) roundabout	7.8	39.2	6.0	41.7
10	M6 Junction 1	13.1	14.4	8.8	9.6
Total		26.3	62.0	20.2	57.9
Change		+35.7		+37.7	

Table 6-28: Rugby to Lutterworth Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base + Dev	2026 Base + Dev + Cumulatives	2026 Base + Dev	2026 Base + Dev + Cumulatives
10	M6 Junction 1	11.9	14.7	10.8	13.2
9	A5/ A426 (Gibbett Hill) roundabout	10.8	22.4	15.0	24.1
2	A4303/ A426 roundabout	6.0	7.2	4.2	5.4
Total		28.7	44.3	30.0	42.7
Change		+15.6		+12.7	

6.8.9 The Cumulative Development traffic results in increased journey times for drivers travelling in both directions during both the AM and PM peaks. The greatest increases are for drivers travelling from Lutterworth to Rugby, with increases of 36 seconds and 38 seconds in the AM and PM peaks respectively.

6.8.10 The maximum average delay at any individual junction is approximately 137 seconds (M69 J1), and the maximum increase in journey time on the selected routes is 71 seconds (A5(N) to M1(S)). Based on the significance criteria set out in Table 6-1, the impact on the M69 Junction 1 is of **minor adverse** significance, and impacts elsewhere on the network are **negligible**.

Operation Phase – Impact on Public Transport

6.8.11 There was little or no information presented in the Transport Assessments for the cumulative schemes to quantify the impact on public transport. However given the geographical spread of the cumulative schemes it is unlikely that they would have a significant impact on the existing route serving Magna Park (Route 8). The impact of the cumulative schemes on public transport is therefore expected to be **negligible**.

Operation Phase – Impact on Pedestrians and Cyclists

6.8.12 As shown in Table 6-19 and Table 6-20, cumulative scheme traffic will result in an increase in PM peak hour HGV traffic of 57% on Coal Pit Lane. Cumulative scheme traffic is therefore expected to have **a minor adverse** impact on pedestrian and cyclist amenity on Coal Pit Lane.

6.8.13 Elsewhere on the network impacts are below 30% and are therefore considered **negligible**.

6.9 Impact of Symmetry Park

6.9.1 The symmetry park proposal comprises 278,709m2 of B8 (storage and distribution), B2 (General Industrial) and B1(c) (Offices) on land adjacent to Glebe Farm, Coventry Road, Lutterworth.

6.9.2 The symmetry park scheme is being promoted by db symmetry (formerly Barwood Developments Limited). An outline planning application was submitted on 5 June 2015. At the time of writing this report the planning application had not been determined and is therefore not considered to be a committed scheme. The access proposals consist of a new roundabout

on the A4303 opposite Woodbrig House Farm and an emergency only access onto the A5 to the south of the Cross In Hand roundabout.

Symmetry Park – Impact on Local Highway Network

6.9.3 Trip generation for the symmetry park development has been obtained from the LLITM model and is summarised in Table 6-30 below.

Table 6-29: Two-Way Traffic Flows Generated by Symmetry Park

Location	AM Peak		PM Peak	
	All Vehs	HGV	All Vehs	HGV
A – Hunter Boulevard	3	1	12	2
B – A4303 between Hunter Boulevard & A5	98	45	122	53
C – A5 south of A4303	18	22	4	21
D – B4027 Lutterworth Road	12	5	-10	6
E – Coal Pit Lane	36	5	29	7
F – A5 north of A4303	24	9	-1	10
G – A5 north of Mere Lane	5	8	24	12
H – Mere Lane east of A5	-25	-3	-5	0
I – Mere Lane east of Magna Park	24	0	2	1
J – A4303 between Hunter Bld & Coventry Road	30	39	72	33
K – Coventry Rd between A4303 & Brookfield Way	-12	7	22	6
L – A4303 between Coventry Road & A426	38	33	46	25
M – A426 Rugby Road north of A4303	3	6	2	5
N – A4303 between A426 & M1 J20	17	34	46	29
O – A4304 east of M1 J20	-24	9	-12	7

6.9.4 The impact of the traffic generated by symmetry park at the locations identified above in the AM and PM peaks is presented in Table 6-31 and Table 6-32 respectively.

Table 6-30: Impact of Symmetry Park development – Two-way traffic flows 2026 AM Peak

Location	2026 Base + Dev + Cumulatives		Symmetry Park		Total		% Increase	
	All Vehs	HGV	All Vehs	HGV	All Vehs	HGV	All Vehs	HGV
A	1,572	307	3	1	1,576	308	0.2%	0.2%
B	2,568	294	98	45	2,665	340	3.8%	15.4%
C	2,045	275	18	22	2,063	297	0.9%	8.1%
D	939	19	12	5	951	24	1.3%	25.7%
E	485	8	36	5	521	13	7.4%	70.5%
F	1,831	152	24	9	1,856	161	1.3%	5.9%
G	2,149	231	5	8	2,153	238	0.2%	3.3%
H	730	67	-25	-3	706	64	-3.4%	-4.4%
I	240	6	24	0	264	6	10.0%	0%
J	2,616	338	30	39	2,646	377	1.1%	11.6%
K	1,088	15	-12	7	1,076	22	-1.1%	47.8%
L	1,942	337	38	33	1,980	371	2.0%	9.8%
M	2,016	157	3	6	2,019	163	0.2%	3.7%
N	3,692	486	17	34	3,709	521	0.5%	7.1%
O	1,357	78	-24	9	1,333	87	-1.7%	10.9%

Table 6-31: Impact of Symmetry Park development – Two-way Traffic Flows 2026 PM Peak

Location	2026 Base + Dev + Cumulatives		Symmetry Park		Total		% Increase	
	All Vehs	HGV	All Vehs	HGV	All Vehs	HGV	All Vehs	HGV
A	1,012	197	12	2	1,023	200	1.1%	1.1%
B	2,107	204	122	53	2,229	257	5.8%	26.1%
C	1,646	166	4	21	1,650	186	0.3%	12.5%
D	1,048	11	-10	6	1,038	17	-0.9%	60.5%
E	474	12	29	7	503	19	6.1%	62.1%
F	1,808	125	-1	10	1,807	135	0.0%	7.6%
G	2,024	180	24	12	2,048	192	1.2%	6.9%
H	716	44	-5	0	711	44	-0.7%	-0.8%
I	225	4	2	1	227	5	0.9%	25.0%
J	2,622	302	72	33	2,694	335	2.7%	11.0%
K	1,137	11	22	6	1,159	17	2.0%	60.0%
L	2,023	316	46	25	2,069	341	2.3%	8.0%
M	1,997	59	2	5	1,999	64	0.1%	7.6%
N	3,479	379	46	29	3,525	408	1.3%	7.7%
O	1,558	70	-12	7	1,546	77	-0.8%	10.6%

6.9.5 Average delay per vehicle during the AM and PM peaks at each of the junctions assessed is set out in Table 6-33 and 6-34 below, with and without the symmetry park development traffic.

Table 6-32: Average Driver Delay - AM Peak

Junction		Average delay per vehicle (sec)		
		2026 Base + Dev + Cumulatives	2026 Base + Dev + Cumulatives + Symmetry Park	Change
1	M1 Junction 20	5.8	5.8	0
2	A4303/A426 roundabout	14.6	14.9	+0.3
3	A4303/Coventry Road roundabout	13.9	13.0	-0.9
5	A4303/ Hunter Boulevard roundabout	14.8	14.8	0
6	A5/ A4303 (Cross in Hand) roundabout	15.2	15.7	+0.5
7	A5/ Mere Lane junction	12.6	12.6	0
8	M69 Junction 1	6.6	6.6	0
9	A5/ A426 (Gibbett Hill) roundabout	13.5	13.4	-0.1
10	M6 Junction 1	16.0	16.1	+0.1

Table 6-33: Average Driver Delay - PM Peak

Junction		Average delay per vehicle (sec)		
		2026 Base + Dev + Cumulatives	2026 Base + Dev + Cumulatives + Symmetry Park	Change
1	M1 Junction 20	5.0	5.0	0
2	A4303/ A426 roundabout	12.6	12.9	+0.3
3	A4303/ Coventry Road roundabout	12.9	12.9	0
5	A4303/ Hunter Boulevard roundabout	12.4	12.6	+0.2
6	A5/ A4303 (Cross in Hand) roundabout	15.0	14.5	-0.5
7	A5/ Mere Lane junction	12.0	12.4	+0.4
8	M69 Junction 1	6.7	6.8	+0.1
9	A5/ A426 (Gibbett Hill) roundabout	10.7	13.9	+3.2
10	M6 Junction 1	15.2	15.2	0

6.9.6 Total delays along the routes identified in para. 6.6.7 have also been calculated, by summing the delay at each junction along the route. Delays shown in the tables below are based on data from the original manual assessment. The results are presented in Table 6-35 to 6-40 below.

Table 6-34: M6(W) to M1(N) Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base + Dev + Cumulatives	2026 Base + Dev + Cumulatives + Symmetry Park	2026 Base + Dev + Cumulatives	2026 Base + Dev + Cumulatives + Symmetry Park
10	M6 Junction 1	36.5	38.9	40.4	45.1
9	A5/ A426 (Gibbett Hill) roundabout	22.4	48.5	24.1	49.3
2	A4303/A426 roundabout	7.2	7.8	5.4	6.0
1	M1 Junction 20	3.0	4.2	3.6	6.6
Total		69.1	99.4	73.5	107.0
Change		+30.3		+33.5	

Table 6-35: M1(N) to M6(W) Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base + Dev + Cumulatives	2026 Base + Dev + Cumulatives + Symmetry Park	2026 Base + Dev + Cumulatives	2026 Base + Dev + Cumulatives + Symmetry Park
1	M1 Junction 20	3.0	5.4	3.0	5.4
2	A4303/A426 roundabout	15.6	24.6	4.8	4.8
9	A5/ A426 (Gibbett Hill) roundabout	39.2	44.2	41.7	42.7
10	M6 Junction 1	13.8	13.8	9.6	11.0
Total		71.6	88.0	59.1	63.9
Change		+16.4		+4.8	

6.9.7 The symmetry park development results in increased journey times for drivers travelling between the M6(W) and the M1(N) in both directions. Journey time increases are greatest for those travelling north in both the AM and PM peaks, at 30 and 34 seconds respectively. The majority of the delay is experienced at the A5/A426 (Gibbett Hill) junction.

Table 6-36: A5(N) to M1(S) Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base + Dev + Cumulatives	2026 Base + Dev + Cumulatives + Symmetry Park	2026 Base + Dev + Cumulatives	2026 Base + Dev + Cumulatives + Symmetry Park
8	M69 Junction 1	68.4	63.0	124.5	91.2
7	A5/ Mere Lane junction	6.0	7.2	3.6	3.6
6	A5/ A4303 (Cross in Hand) rbt	12.0	9.6	5.4	4.2
5	A4303/ Hunter Boulevard rbt	4.8	4.2	3.0	2.4
4	A4303/ Shackleton Way junction	0	0	0	0
3	A4303/ Coventry Road rbt	3.0	3.0	5.4	7.8
2	A4303/ A426 roundabout	3.6	4.2	5.4	7.2
1	M1 Junction 20	3.0	4.2	3.6	6.6
Total		100.8	95.4	150.9	123.0
Change		-5.4		-27.9	

Table 6-37: M1(S) to A5(N) Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base + Dev + Cumulatives	2026 Base + Dev + Cumulatives + Symmetry Park	2026 Base + Dev + Cumulatives	2026 Base + Dev + Cumulatives + Symmetry Park
1	M1 Junction 20	3.6	5.4	3.0	3.0
2	A4303/ A426 roundabout	15.6	24.6	4.8	4.8
3	A4303/ Coventry Road rbt	7.8	16.8	3.6	3.6
4	A4303/ Shackleton Way junction	0	0	0	0
5	A4303/ Hunter Boulevard rbt	5.4	7.8	2.4	3.0
6	A5/ A4303 (Cross in Hand) rbt	5.4	5.4	4.2	5.4
7	A5/ Mere Lane junction	4.8	4.8	5.4	6.0
8	M69 Junction 1	47.7	38.3	31.0	29.6
Total		90.3	103.1	54.4	55.4
Change		+12.8		+1.0	

6.9.8 The symmetry park development results in a reduction in journey times for drivers travelling from the A5(N) to the M1(S), and increased journey times for drivers travelling in the opposite direction.

Table 6-38: Lutterworth to Rugby Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base + Dev + Cumulatives	2026 Base + Dev + Cumulatives + Symmetry Park	2026 Base + Dev + Cumulatives	2026 Base + Dev + Cumulatives + Symmetry Park
2	A4303/ A426 roundabout	8.4	9.6	6.6	7.8
9	A5/ A426 (Gibbett Hill) roundabout	39.2	44.2	41.7	42.7
10	M6 Junction 1	14.4	14.8	9.6	9.6
Total		62.0	68.6	57.9	60.1
Change		+6.6		+2.2	

Table 6-39: Rugby to Lutterworth Journey Delay

Junction		Average delay per vehicle (sec)			
		AM Peak		PM Peak	
		2026 Base + Dev + Cumulatives	2026 Base + Dev + Cumulatives + Symmetry Park	2026 Base + Dev + Cumulatives	2026 Base + Dev + Cumulatives + Symmetry Park
10	M6 Junction 1	14.7	16.0	13.2	13.7
9	A5/ A426 (Gibbett Hill) roundabout	22.4	48.5	24.1	49.3
2	A4303/ A426 roundabout	7.2	7.8	5.4	6.0
Total		44.3	72.3	42.7	69.0
Change		+28.0		+26.3	

6.9.9 The symmetry park development results in increased journey times for drivers travelling in both directions during both the AM and PM peaks. The greatest increases are for drivers travelling from Rugby to Lutterworth, with increases of 28 seconds and 26 seconds in the AM and PM peaks respectively.

6.9.10 The maximum average delay at any individual junction due to the symmetry park development is approximately 3.2 seconds (A5/A426 Gibbett Hill), and the maximum increase in journey time on the selected routes is 34 seconds (M6(W) to M1(N)). Based on the significance criteria set out in Table 6-1, the impact of the symmetry park development on users of the highway network is **negligible.**

Symmetry Park – Impact on Public Transport

6.9.11 The symmetry park Transport Assessment includes an estimate of the number of additional bus trips that will be generated by the development. Taking into consideration the proposed target mode share, the development is predicted to generate 23 trips (18 arrivals and 6 departures) in the AM peak, and 21 trips (6 arrivals and 15 departures). This is considered likely to increase crowding on the existing bus service.

6.9.12 The symmetry park development is therefore expected to have a **minor adverse** impact on public transport.

Symmetry Park – Impact on Pedestrians and Cyclists

6.9.13 Tables 6-31 and 6-32 indicate that the symmetry park development will result in increases in HGV traffic of over 60% on Coal Pit Lane, Coventry Road and the B4027 Lutterworth Road. However, in each case the base level of HGV traffic is low, and therefore a relatively small increase in the number of HGVs appears to have a very significant impact. The impact on pedestrians and cyclists is therefore considered to be **negligible** on these roads.

6.9.14 Elsewhere on the network impacts are below 30% and are therefore considered **negligible**.

6.10 Summary

6.10.1 This update of the Traffic and Transport chapter of the ES presents an assessment of the effect of the Proposed Development on the surrounding road network, based on traffic flows obtained from the LLITM model.

6.10.2 The assessment has considered the change in the following conditions on the highway network:

- Driver journey time and delay;
- Pedestrian and cycle journey time, delay, accessibility and amenity; and
- Public transport.

6.10.3 With the exception of the short section of Mere Lane between the A5 and the site access where a **short term major adverse** impact on pedestrian and cyclist amenity is expected, no significant environmental effects have been identified during the construction, both with and without the identified cumulative schemes.

6.10.4 This section of Mere Lane is currently subject to a 7.5 tonne weight restriction, and as such the number of HGVs is very low (10 in the AM peak and 6 in the PM peak). A relatively small increase in the number of HGVs therefore appears to have a very significant impact, albeit the actual increase as a result of the construction phase is only an additional 9 HGVs in both peaks.

6.10.5 During the operational phase of the Proposed Development, the maximum average delay at any individual junction is approximately 23 seconds (M69 J1), and the maximum increase in journey time on the selected routes is 89 seconds (A5(N) to M1(S)). Based on the significance criteria set out in Table 6-1, the impact on users of the local highway network is considered **negligible**.

6.10.6 A significant amount of mitigation is proposed to offset the effects that could result from the additional traffic that would be generated by the Proposed Development.

6.10.7 The major element of the mitigation is a new roundabout at the A5/ Mere Lane junction and an extension of the dual carriageway on the A5 from Emmanuel/ Lodge Cottages to the new roundabout. The roundabout provides the necessary additional capacity to accommodate the operational phase traffic and provides a safer connection with the A5.

6.10.8 A further benefit of the proposed highway improvements is that some traffic from the existing Magna Park will use the new access route via Mere Lane and Argosy Way thus avoiding the Cross In Hand roundabout completely. This helps to mitigate the impact of the Proposed Development traffic on this junction, with average delay per vehicle increasing by just 1.2 seconds in the AM peak and 0.6 seconds in the PM peak.

6.10.9 Highway improvements are also proposed at the A426/ A4303 roundabout and these are predicted to significantly reduce delay at the junction. During the AM peak, the average delay per vehicle at this junction will reduce from 25.2s without development to 6.6s with development and with improvements. The corresponding reduction in average delay per vehicle in the PM peak is 7.2s to 4.2s

6.10.10 The Proposed development is expected to generate an additional 52 trips by bus during shift changeovers. The existing bus service provides one bus per hour, and therefore additional demand would lead to overcrowding. New bus services are to be introduced by Arriva and Stagecoach, and these will accommodate the additional demand generated by the Proposed Development and also offer an improved service for existing employees within magna park.

The impact on Public Transport is therefore expected to be of moderate beneficial significance.

6.10.11 The redundant section of Mere Lane will be stopped-up and reclassified as a public footpath, providing an informal link to an existing public footpath on the west side of the A5. The new section of public footpath will be approximately 500m long. Therefore the residual impact on pedestrian and cyclist amenity along this section of Mere Lane is considered to be **major beneficial**.

6.10.12 Pedestrian and cycle facilities will be incorporated into the Proposed Development including a new footway and safe crossing points linking the proposed bus stops on Argosy Way to the Proposed Development, a shared bridle/ pedestrian crossing of the access road serving the Proposed Development and secure, covered and well-lit cycle parking facilities within the car park of the Proposed Development.

6.10.13 Overall, pedestrian amenity will improve with the Proposed Development. Although there is one road that will experience an increase in HGV traffic of more than 30% (A5 north of Mere Lane), this will in part be balanced by the proposed pedestrian and cycleway facility improvements, and the residual impact on pedestrians and cyclists is considered to be **negligible**.

6.10.14 Consideration of the effects when the cumulative schemes are included resulted in impacts of **minor adverse** significance on the M69 J1, with an increase in average delays at the junction of up to 137 seconds, and **negligible** impacts elsewhere on the network.

6.10.15 Cumulative scheme traffic will result in an increase in PM peak hour HGV traffic of 57% on Coal Pit Lane, and is therefore expected to have a **minor adverse** impact on pedestrian and cyclist amenity. Elsewhere on the network impacts are below 30% and are therefore considered **negligible**.

6.10.16 The impact of the cumulative schemes on Public Transport is expected to be **negligible**.

6.10.17 A sensitivity test was undertaken to assess the potential impact of the proposed db symmetry application (planning ref: 15/00865/OUT). An outline planning application was submitted in June 2015. At the time of writing this report the planning application had not been determined and is therefore not considered to be a committed scheme.

6.10.18 The maximum average delay at any individual junction due to the symmetry park traffic is approximately 3.2 seconds (A5/A426 Gibbett Hill), and the maximum increase in journey time on the selected routes is 34 seconds (M6(W) to M1(N)). Therefore, the impact of the symmetry park development on users of the highway network is considered to be **negligible**.

6.10.19 The impact on pedestrians and cyclists of the symmetry park development is considered **negligible**.

6.10.20 The symmetry park development is predicted to generate 23 trips additional trips by bus in the AM peak, and 21 trips in the PM peak. This is considered likely to increase crowding on the existing bus service, and therefore there will be a **minor adverse** impact on Public Transport.

6.10.21 The table below provides a summary of the likely significant effects of the Proposed Development.

Table 6-40: Table of Significance – Traffic and Transport

Potential Effect	Nature of Effect (Permanent/Temporary)	Significance (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)	Mitigation / Enhancement Measures	Geographical Importance*							Residual Effects (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)
				I	UK	E	R	C	B	L	
Construction											
Local highway network	Temporary	Negligible	CEMP to include commitment to appropriate routing arrangements and working hours and the production of an outline traffic management plan.							✓	Negligible
Pedestrian & cyclist amenity – Mere Lane	Temporary	Major Adverse								✓	Major Adverse
Pedestrian & cyclist amenity – all other sections of the local highway network	Temporary	Negligible								✓	Negligible
Public Transport	Temporary	Negligible								✓	Negligible
Completed Development											
Local highway network	Permanent	Negligible	Widening and realignment of Mere Lane. New roundabout to replace existing priority junction at A5/ Mere Lane junction							✓	Negligible
Pedestrian & cyclist amenity – Mere Lane	Permanent	Major Adverse	Stopping up and creation of new pedestrian/cyclist only route							✓	Major Beneficial
Pedestrian & cyclist amenity – A5	Permanent	Minor adverse	New pedestrian routes and road crossing facilities to link existing Magna Park to Proposed Development.							✓	Negligible

Pedestrian & cyclist amenity – all other sections of the local highway network	Permanent	Negligible								✓	Negligible
Public Transport	Permanent	Major Adverse	New bus services are to be introduced by Arriva and Stagecoach; improvements to the existing bus stop facilities.							✓	Moderate beneficial
Cumulative Effects											
Construction											
Local highway network	Permanent	Negligible								✓	Negligible
Pedestrian & cyclist amenity	Permanent	Negligible								✓	Negligible
Public Transport	Permanent	Negligible								✓	Negligible
Operation											
Local highway network – M69 J1	Permanent	Minor adverse								✓	Minor adverse
All other sections of the local highway network	Permanent	Negligible								✓	Negligible
Pedestrian & cyclist amenity – Coal Pit Lane	Permanent	Minor adverse								✓	Minor adverse
Pedestrian & cyclist amenity – all other sections of the local highway network	Permanent	Negligible								✓	Negligible
Public Transport	Permanent	Negligible								✓	Negligible

Symmetry park development effects											
Local highway network	Permanent	Negligible							✓	Negligible
Pedestrian & cyclist amenity	Permanent	Negligible							✓	Negligible
Public Transport	Permanent	Minor adverse							✓	Minor adverse

*** Geographical Level of Importance**

I = International; UK = United Kingdom; E = England; R = Regional; C = County; B = Borough; L = Local

6.11 References

Ref 6-1 URS, (2015); Magna Park Extension: Hybrid Application - Transport Assessment

Ref 6-2 Department for Transport, (2013); Circular 02/2013 The Strategic Road Network and the Delivery of Sustainable Development

Ref 6-3 The A5 Transport Group, (2013); A Strategy for the A5 2011 – 2026, A449 Gailey (Staffordshire) to A508 Old Stratford (Northamptonshire)

Ref 6-4 Institute of Environment Management and Assessments, (1994); Guidelines for Environmental Assessment of Road Traffic

Ref 6-5 URS, (2015) Magna Park Extension: Hybrid Application – Travel Plan

Ref 6-6 Department for Transport, (2015); Section 247 of the Town and Country Planning Act (1990), Stopping Up and Diversion of Highways

Ref 6-7 Aecom, (2016); Magna Park Extension: Hybrid Application – Second Supplementary Transport Assessment