PROPOSED ENDERBY RELIEF ROAD
ENDERBY
LEICESTERSHIRE

Transport Assessment

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Transport Statement
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03	Transport Assessment	Melanie A'Lee	Melanie A'Lee	Brian Plumb	6th November 2020

Prepared by:

RPS Consulting Services Ltd

Name: Melanie A'Lee
Associate Director

20 Farringdon Street,
London. EC4A 4AB.

Prepared for:

Trustees of ERB Drummond Deceased

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Appendices

1 INTRODUCTION

1.1 RPS are instructed by Mather Jamie on behalf of the Drummond Estate, to advise on matters of Transportation and to provide a Transport Assessment (TA) in relation to the proposed relief road at Enderby, Leicester. This report provides an assessment of the transport implications relating to the provision of the Enderby Relief Road (ERR) and the changes in traffic flow and hence junction capacities that stem from this.

1.2 The relief road will be formed by connecting the existing Warren Park Way, from the junction with Mill Hill, to the proposed New Lubbesthorpe road infrastructure. Warren Park Way is adopted highway for most this route from the junction with Mill Hill. The New Lubbesthorpe infrastructure creates a new north / south link from Leicester Lane, through the employment land and ultimately crossing the M69. The relief road would form a connection between these routes and provide an alternative corridor for movement from areas to the north of Enderby, to Leicester Lane and hence the broader network.

1.3 Whilst part of a separate planning application, these proposals are linked to the development of circa, 1M sq.ft. B8 warehouse distribution use together with an element of D1and B1 Office integrated within the B8 use, on land to the south of Leicester Lane, Enderby (Application Ref: 19/0164/OUT). Accordingly, the assessment compares the road network without the Relief Road against the proposals with the Relief Road, but also taking account the development traffic from the B8 development.

1.4 This report includes an assessment of the existing local highway network and changes that are being brought about by other consented development within the local area. Furthermore, the assessment considers the cumulative impact based on the LLITM data which includes the Core Strategy Local Plan development sites together with other proposed commercial development.

1.5 In undertaking this assessment, the report considers the benefits the scheme brings about by re-routing traffic out of the centre of Enderby and also the benefits the scheme offers in improving accessibility to the local area by all modes of transport.

1.6 This TA has been prepared in accordance with the National Planning Policy Framework – the Department of Transports overarching principals on Transport Assessments and with reference to Leicestershire County Council's Highways Design Guide. The TA has also been prepared in accordance with pre-application scoping discussions with Leicestershire County Council (LCC) and Highways England in relation to the proposed Enderby Hub, B8 development and the assessment of the various junctions relating to the study area network for that scheme.

1.7 This TA therefore considers the effect of the provision of the Enderby Relief Road and the benefits this offers to the local transport network. In addition, the LCC Microsimulation Model has also been used to assess the effects of the ERR and the Enderby Hub. Accordingly, the County Council's model has been used to assess this proposal with the development included within the model to provide a comparative assessment of the proposal and the effects of the Enderby Hub, B8 development to the south of Leicester Lane.

1.8 This TA therefore provides an assessment of the effect of the ERR and the Enderby Hub, B8 development and compares the assessment of this with the figures provided from the

Microsimulation assessment. Overall the TA demonstrates that the development impact in combination with the B8 development ensures that the residual cumulative impact is not severe.

Background

1.9 This TA replicates that issued as part of application Ref: 19/0179/FUL although has been updated to support a revised planning application which includes an amendment to the alignment of the relief road. This TA has also been updated to include a review of traffic data, up to date details in respect to accident analysis and policy data.

Report Format

1.10 Section 2 of the report describes the transport characteristics of the local highway network and includes details of the traffic surveys that have been undertaken. Furthermore, the report also highlights the extent of the committed development within the area and the effect of the traffic associated with those developments on the study network. This includes the New Lubbesthorpe development.

1.11 **Section 3** describes the existing opportunities for sustainable travel within the area and includes a description of walking and cycling facilities, together with bus services.

1.12 **Section 4** provides a review of the central government and local government planning policy guidelines that are considered relevant in transportation terms to the proposal.

1.13 **Section 5** provides details of the proposal including the design criteria for the scheme and junction improvements.

1.14 **Section 6** details the likely changes in traffic flows within the local area as a consequence of the proposed measures and the redistribution of traffic on the local highway network.

1.15 **Section 7** considers the impact of the proposed changes to traffic flow on the local highway network.

1.16 **Section 8** outlines details of the Leicestershire County Council Paramics model which is to be used as a comparative assessment.

1.17 **Section 9** provides a summary of the report and the report conclusions.

2 EXISTING LOCAL HIGHWAY NETWORK

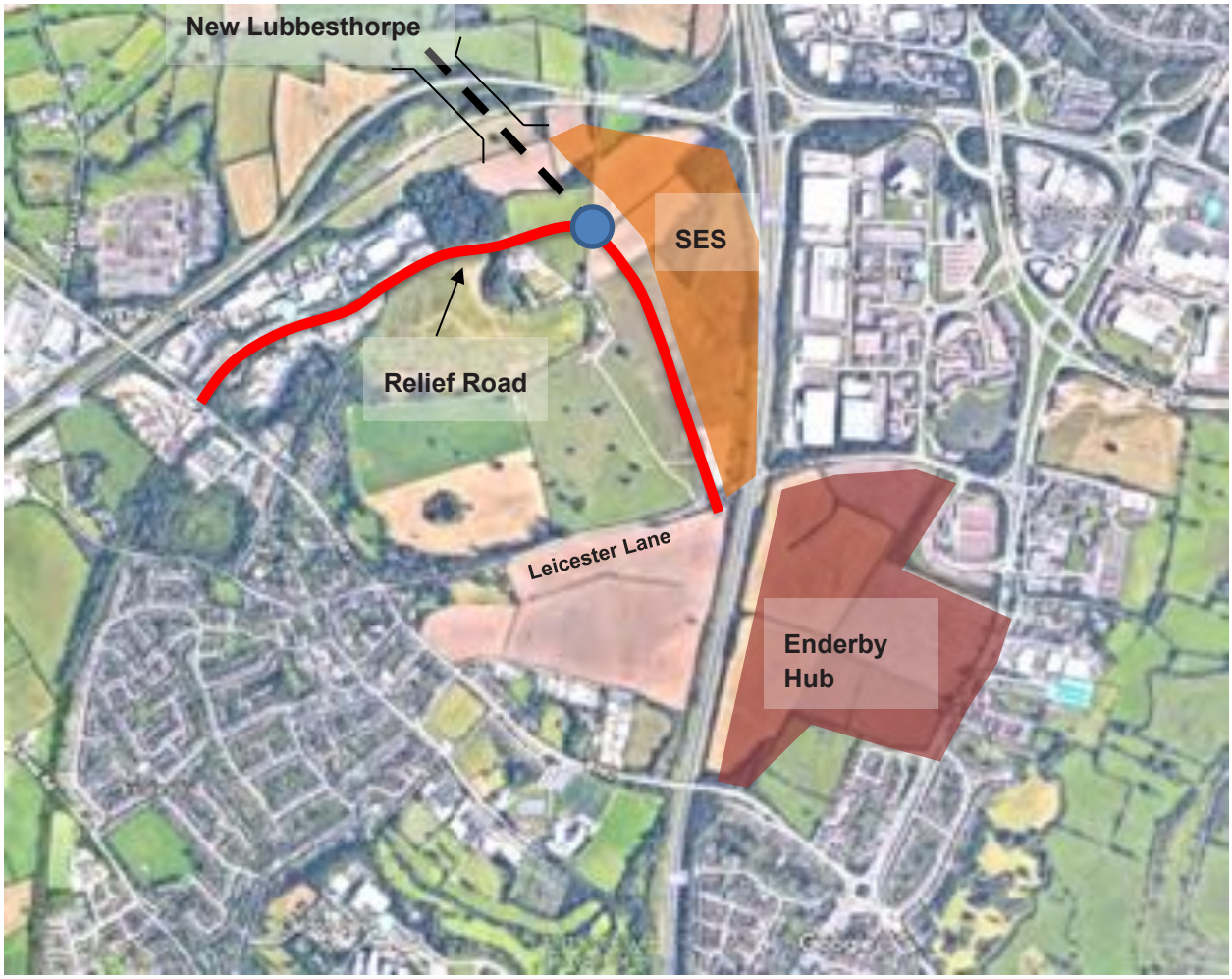
Introduction

2.1 This section of the report considers the transport characteristics of the existing local highway network including details of the traffic surveys and committed development traffic flows.

Relief Road

2.2 The proposed Relief Road is located on land to the west of the M1, north of Leicester Lane, south of the M69 and east of the B582 Mill Hill, at Enderby, Leicester. Details of the location of the proposed Relief Road are shown in **Figure 1** below.

Figure 1: Relief Road Location Plan



2.3 The proposed Relief Road will be formed from Warren Park Way and link with infrastructure being brought forward as part of the New Lubbesthorpe scheme (SES) which includes a new signalised junction with Leicester Lane (now implemented) and will in the future link to the New Lubbesthorpe residential area (SUE) via a new road bridge over the M69.

2.4 Part of the Relief Road will be along the route that extends northeast from Warren Park Way, Harold's Lane, which is currently a track serving as access to the now complete land fill site.

Existing Highway Network

2.5 The land to provide the relief road is to the south of the M69, east of Mill Hill B582, north of Leicester Lane and west of the M1 motorway.

2.6 Mill Hill (B582) is a single carriageway joining Desford Road (B582) and A47 to the northwest and via Blaby Road (B582) with B4114 Fox Hunter junction to the southeast. At the Warren Park Way junction, the B852 is subject to a 30mph speed limit, this changes to a 40mph speed limit approximately 75m to the north.

2.7 Warren Park Way is a No-Through road joining with Mill Hill via a priority junction arrangement with a ghost island right-turn lane. The width of Warren Park Way at the junction is some 30m wide at the Give Way, narrowing to approximately 7.5m on the access road. The width of this junction is designed to accommodate the large HGV vehicles that frequently serve the businesses along Warren Park Way.

2.8 Warren Park Way is an adopted highway for most of its route from the junction with Mill Hill up to a point east of Feldspar Close. The road varies in width to accommodate right turning facilities to the various accesses but is generally a minimum of 7.3m in width with verges and footways to both sides of the road.

2.9 Parking restrictions are in place over the western extent of the road from the junction of Mill Hill, for some 360m to the southern side of the road, and for some 150m to the north side. Beyond the parking restrictions, there is on-street parking generally to the north side of the road.

2.10 In terms of the local strategic road network, the M1 is to the east of the site and the M69 is to the north.

2.11 The M1 is a north-south motorway connecting London to Leeds and is a four lane dual carriageway. The nearest junction to the site is Junction 21 where it joins with the M69 and A5460. The M1/M69 junction is signal controlled with four circulatory lanes, and segregated slip roads between various left turning movements.

2.12 The M69 at the junction with the M1 is a dual 2-lane motorway which widens to a dual 3-lane motorway running from Junction 21 of the M1 to Junction 2 of the M6 near Coventry.

2.13 The A4560 joins the M1 at Junction 21 and continues eastward joining the A563 and B4114. The A5460 is a 3-lane dual carriageway continuing northward to Leicester City. The B4114 and A563 are both 3 to 4 lane dual carriageways linking to other strategic and local roads in the area.

2.14 As part of the New Lubbesthorpe scheme various improvement measures are being provided to enhance the transport network. Those include the new bridge link over the M1 which is now completed, a new link over the M69, upgrading of the St Johns junctions to accommodate right turning (Southbound) traffic from Leicester Lane, which is also now complete, together with

enhancements of the A5460 link between the M1 Junction 21 and the Fosse Park retail area. These measures will be considered within the overall review of the traffic impact, and are identified on the plan attached at **Appendix A.**

2.15 These changes to the network are designed to mitigate the overall impact of the New Lubbesthorpe development and will change, to some extent, the patterns of movement within the Fosse Park area.

Collision Analysis

2.16 A review has been undertaken of the personal injury collisions that have occurred along the local road network in the vicinity of the site during the past 5 years. Collision data has been obtained from Leicestershire County Council (LCC) for the period 01/09/2016 to 18/01/2020.

2.17 Within the area assessed there have been a total of 11 accidents, of these one was identified as serious in terms of severity and 10 as slight. Below is a review of the Serious accident that occurred at the Quarry Lane / Mill Hill junction and a copy of the report is provided at **Appendix B.**

- (Police Ref 201901146) An incident involved a Goods vehicle and a pedestrian at the Quarry Lane / Mill Hill junction.

2.18 The review of the collision data indicates no common patterns of collisions due to the characteristics of the local highway network in the vicinity of the site, rather carelessness on behalf of drivers and / or pedestrians, indicating that the local highway network has no pre-existing inherent deficiencies.

Existing Traffic Flows

2.19 A Scoping Report was prepared and issued to Leicestershire County Council as Highway Authority in relation to the B8 development. As a consequence of these discussions LCC agreed the following study area:

- M1 / M69 / A5460 junction 21 – signalised roundabout;
- A563 / A5460 east merge and diverge slips / Meridian South – roundabout;
- A562 / A5460 west bound merge and diverge slips – signalised junction;
- A563 Soar Valley Way / B4114 St Johns – signalised gyratory;
- Leicester Lane / B4114 St Johns – signalised junction;
- Leicester Lane / Smith Way signalised junction;
- B4114 St Johns / Park and Ride / Police HQ – signalised junction; and
- B4114 St Johns / Blaby Road – roundabout.
- In addition to the above traffic surveys have been undertaken at the junction of Mill Hill and Warren Park Way, Leicester Lane / B582.

2.20 Whilst the above area is assessed in detail as part of the Enderby Hub development TA, as part of this TA the focus is on the junctions local to the Relief Road which includes the following;

- Mill Hill / Warren Park Way Junction;
- Leicester Lane / Blaby Road / B582 junction; and
- Leicester Lane / Employment Access (Part of New Lubbesthorpe development).

2.21 Traffic surveys were undertaken at the above junctions on Thursday 11 June 2015 and Thursday 19 November 2015. The turning count data was collected in 15 minute intervals for the AM and PM weekday peak periods (07:00-10:00 and 16:00-19:00). In addition, queue length surveys were undertaken at the junctions every 5 minutes during the AM and PM peak hours. The queue lengths have been used to validate the based models.

2.22 The traffic survey identified the following peak hours:

- 08:00-09:00 AM peak hour; and
- 17:00-18:00 PM peak hour.

2.23 The above 2015 traffic flow data has been reviewed against 2017 and 2018 surveyed data for Leicester Lane and Mill Hill area and is included in the table below focusing on the key routes assessed as part of this report. The data is based on peak hour two-way movements.

Table 2.1: Comparison of 2015 Flows and 2017/2018 Flows

Link/ Junction	2015		2017		2018	
	AM	PM	AM	PM	AM	PM
Mill Hill (north of Warren Park Way)	**1555**	**1467**	1406	1404	1290	1305
Leicester Lane (West of Smith Way)	**1174**	1096	1026	**1144**	1118	1125
Warren Park Way/ Mill Hill Junction (total movements)	**1763**	**1656**	1614	1593		
Leicester Lane/ B582/ High Street junction	**1972**	**1803**	1651	1791		

2.24 With the exception of Leicester Lane West of Smith Way, the 2015 included a higher level of flows compared to the 2017 and 2018 data. Based on the junctions being assessed, it is considered that the use of the 2015 data is suitably robust for a review of impact.

2.25 A copy of the 2017 and 2018 data is included in **Appendix C** together with the 2015 flows.

Future Year Assessment and Committed Development

2.26 As part of the scoping discussions with LCC, it was agreed to factor the baseline traffic flows in line with changes from the LLITM data. However, in reviewing the LLITM data it was evident that the traffic movements associated with the New Lubbesthorpe development site were lower than those provided in the original Transport Assessment report undertaken for that application. As such the traffic movements have been taken from the TA associated with the New Lubbesthorpe development to provide a robust assessment and added to the updated base flows. Whilst some of the site was occupied in 2017/2018, the number of trips would be small, although there will be an element of double counting by adding on the Lubbesthorpe development trips.

2.27 The table below shows a comparison between the LLITM 2026 flows and the 2015 flows plus New Lubbesthorpe TA flows (excluding proposed development).

Table 2.2: Comparison of LLITM Flows and Proposed Base Flows – AM Peak

Road	LLITM 2026 Flows – Two-way (Scenario C)	Proposed 2015 Base + Part Lubb Dev	Difference	LLITM 2026 Flows – Two-way (Scenario E)	Proposed 2015 Base + Lubbesthorpe	Difference
B582 North of Warren Park Way	1179	1709	+45%	1331	1707	+28%
B582 North of Leicester Lane	1243	1804	+45%	1303	1775	+36%
B582 South of Leicester Lane	858	1255	+46%	953	1326	+39%
Leicester Lane east of B582	1289	1354	+5%	973	1365	+40%
B4114 north of Leicester Lane	4071	4778	+17%	3246	4706	+45%
B4114 South of Leicester Lane	3477	4063	+17%	2917	4370	+49%

Table 2.3: Comparison of LLITM Flows and Proposed Base Flows – PM Peak

Road	LLITM 2026 Flows – Two-way (Scenario C)	Proposed 2015 Base + Part Lubb Dev	Difference	LLITM 2026 Flows – Two-way (Scenario E)	Proposed 2015 Base + Lubbesthorpe	Difference
B582 North of Warren Park Way	1293	1597	+23%	591	1569	+165%
B582 North of Leicester Lane	1363	1529	+12%	663	1501	+126%
B582 South of Leicester Lane	984	1037	+5%	415	1092	+163%
Leicester Lane east of B582	861	1182	+37%	700	1197	71%
B4114 north of Leicester Lane	3929	5026	+27%	2269	4962	119%
B4114 South of Leicester Lane	3528	4106	+16%	2087	4407	111%

2.28 The above tables demonstrate that locally to the site, the LLITM flows provide substantively lower levels of traffic compared to the base scenario being used. In addition, for the proposed assessment the base line traffic flows also include the Everards Meadows development together

with those from the Castle Acres redevelopment scheme for retail development. Accordingly, the use of the higher flows within the TA ensures a robust assessment

2.29 The proposed assessment of the baseline figures will no doubt reflect an element of double counting between residential trips within New Lubbesthorpe and the employment trips and retail trips within the Castle Acres and Everards Meadows schemes. Likewise the new Enderby Hub trips when included in the proposed assessment will also reflect an element of double counting of residential trips from New Lubbesthorpe and employment trips within the Enderby Hub. Consequently the assessment work undertaken within this report must be seen as a robust basis of assessment.

2.30 The LLITM Saturn Model takes into consideration the existing network constraints as part of the future year assessment and as such the levels of traffic identified as part of this assessment are likely to be above those within LLITM. This is demonstrated further in Section 8 which reviews the local Microsimulation model information for this area. As such the assessment work undertaken as part of this TA is considered robust.

2.31 In terms of future assessment years, the assessments undertaken are considered sufficiently robust to provide a future assessment period of 2029. To verify this, TEMpro identifies a growth of around 2% between 2026 to 2029 for this area, as can be seen in the above tables, the difference between the LLITM flows and the manual assessment flows far exceeds this level of predicted growth.

3 SUSTAINABLE TRAVEL OPTIONS

Introduction

3.1 Whilst the proposed Relief Road will not generate any traffic, the measures do provide improvements to the network which can help influence sustainable travel choices. Accordingly, within this section of the report details are provided of the existing opportunities for travel by sustainable modes and the improvements that stem from the proposals.

Walking and Cycling

3.2 In relation to walking and cycling the local network provides the following opportunities:

- On Leicester Lane, there is an existing footway/cycle way link that runs along the northern side of the road. There is currently no footway provision west of Smith Way on the southern side of the road; and
- As part of the development of the New Lubbesthorpe site new pedestrian and cycle routes will be provided to link with the existing infrastructure and enhance the current provision.

3.3 The proposed Relief Road will include footways along the road which will allow residents within Enderby a direct route to gain access to the new employment areas proposed as part of the New Lubbesthorpe development. The proposed Relief Road will also benefit those within the New Lubbesthorpe development north of the M69 to gain access to the existing employment facilities along Warren Park Way.

Public Transport

3.4 In relation to public transport, the proposed ERR offers the opportunity for new services to use this route or existing services to be re-routed through these employment areas.

Summary

3.5 In summary the ERR is considered to offer improved connections for all forms of travel including walking, cycling and motorised vehicles.

4 TRANSPORT PLANNING POLICY AND GUIDANCE

Introduction

4.1 When considering any development proposal, it is appropriate to assess that development in the context of the relevant policy whether it is National or Local Planning policy. Accordingly, the appropriate transportation policy within which to consider this proposal is set out below.

4.2 It is considered that this is equally true of the effects of the relief road proposals.

National Planning Policy Framework

4.3 The National Planning Policy Framework (NPPF) adopted in February 2019, replaces the previous version adopted in July 2018. The NPPF replaced existing national planning policy guidance and statements, including Planning Policy Guidance 13 (PPG13) and Planning Policy Statement 3 (PPS3), with a single more concise document. The NPPF aims to enable local people and their accountable councils to produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities.

4.4 National policy in relation to the transport planning of developments is set out in Section 9 'Providing Sustainable Transport – considering development proposals' and states the following;

4.5 Paragraph 108 states:

> "In assessing site that may be allocated for development in plans, or specific applications for development, it should be ensures that:
> - Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;
> - Safe and suitable access to the site can be achieved for all users; and
> - Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree."

4.6 The most pertinent issue raised within the NPPF in relation to transport is highlighted within paragraph 109. This states:

> "Development should only be prevented or refuse on highway grounds if there would be an unacceptable impact on highway safety or residual cumulative impacts on the road network would be severe."

4.7 Whilst the proposed Relief Road will not generate traffic movements, it will result in the re-distribution of traffic movements as such, in the context of this paragraph within NPPF, a Transport Assessment is provided. Furthermore, the opportunities for sustainable travel modes are incorporated into the design.

4.8 In the context of paragraph 108 'b' it is considered that the access proposals are safe and suitable for all users.

4.9 Finally, in the context paragraph 109, it is considered that the Relief Road provides improvements which would otherwise not be achieved, and which do provide improvements over the current arrangements. Accordingly, and as demonstrated by this Transport Assessment, the development does not result in an unacceptable impact on highway safety and that the residual cumulative impact of the relief road is not severe.

Leicestershire County Council – LTP3

4.10 The LCC LTP 3 sets out how the Highway Authority will manage and improve the transport network over the next 15 years (2011 to 2026). The document also has a short term implementation plan on a rolling 3 year period. The key aims of the plan include the following:

- "Efficient, easy and affordable access to key services, particularly by walking, cycling and public transport.
- More consistent, predictable and reliable journey times for people and goods
- Improved satisfaction with our transport system.
- More people walking, cycling and using public transport as part of their daily journeys
- A reduction in the number of road casualties
- An effectively managed and well maintained transport system and assets
- Improved resilience of our transport system to the effects of climate change
- Reduced impact from the transport system on the environment and individuals."

4.11 Specific actions identified in the LTP 3 include the following which is referenced as action 45 as part of the Connect 2 project:

- Further improvements to the paths and cycleways in the Soar Valley; and
- The provision of better signage and information.

4.12 In the context of the above it is considered that the proposal accords with the aims of the LTP.

Blaby District Local Plan – Core Strategy

4.13 The Core strategy sets out the spatial plan for the district up to 2029, the document supersedes some of the policies of the Blaby District Council Local Plan 1999. The key objectives of the plan in relation to highways and transportation include policy CS 10.

4.14 In the context of CS10 – Transport Infrastructure, the strategic objectives are:

"iii) To deliver the infrastructure, services and facilities required to meet the needs of the population of the District of Blaby including those arising from growth and to make services accessible to all;
vi) To maximise sport and recreation opportunities;

vii) To minimise energy use and use of valuable resources and to encourage renewable energy production in sustainable locations; and
xi) To deliver the transport needs of the district and to encourage and develop the use of more sustainable forms of transport (including walking, cycling, and other forms of non-motorised transport and public transport)."

4.15 As part of the justification to policy CS10, paragraph 7.10.5 states:

"The Core Strategy transport policy and those that relate to the new development seek to be consistent with these objectives and goals. The development strategy is based on urban concentration and provision of "sustainable development" largely to minimise the need to travel and where travel is necessary to reduce journey distances and allow for growth in areas which have a range of public transport alternatives. Reasonable contributions will be sought to improving transport infrastructure (including walking, cycling and public transport) where development would result in a detrimental impact on the transport network."

4.16 It is considered that the Relief Road does make reasonable contributions toward sustainable travel as are identified within this Transport Assessment and also toward infrastructure improvements which benefit the existing local highway network. These measures are set out in the subsequent sections of this report.

Blaby District Council – Local Plan (Delivery) Development Plan Document – February 2019

4.17 The Local Plan Delivery Document (known as the 'Delivery DPD') is the second part of the Local Plan. It includes site allocations for housing and employment uses and development management policies that apply across the District and will be used to assess planning applications.

4.18 Within this document the proposed Enderby Hub development is identified as Site Allocations Policy SA3 – Land West of St. Johns, Enderby, will be allocated for employment uses (approximately 33 hectares gross). This policy states that the following that are pertinent to transport:

"Transport
B) Transport infrastructure improvements will be required to mitigate the impact of the proposed development in the local and wider road network.
C) A transportation strategy will be prepared in advance of the determination of any planning application. The timing of the delivery of transport infrastructure will be determined through an agreed phasing plan. The transport impacts assessed and any phased mitigation will identify the cumulative impacts of the proposal with other developments close to junction 21 of the M1 including: Lubbesthorpe Sustainable Urban Extension and Strategic Employment Site, Castle Acres retail development and Everards Meadows.

Highway Improvements

D) A comprehensive package of transport improvements informed by a robust transport assessment will be required. The improvements should include:

i. Improvements to junction and link capacity in Enderby Village Centre (including opportunities to complete the Enderby by-pass linking the B582 at Enderby to Leicester Lane via Warren Park Way and Leicester Lane Strategic Employment Site);
ii. improvements to junctions and links on the B4114/ B582;
iii. Improved capacity at junction 21 of the M1 if necessary;
iv. Improvements to junctions on the A563 (Lubbesthorpe Way) and B5460; and
v. Provision of a signal controlled junction at the access to the site on Leicester Lane.

Sustainable Transport Measures

E) The proposed employment development will be designed to incorporate:

i. segregated cycling and pedestrian links. The design of the proposal will link with existing cycle routes on St. Johns, Leicester Lane and the B582
ii. Measures that seek to achieve a modal shift away from private car use including provision of a Travel Plan for employees which includes measures to encourage the use of more sustainable transport; and
iii. Potential to encourage employees to use local bus services. Where insufficient capacity exists in local bus services financial contributions will be required."

4.19 The above policy identifies the need to provide improvements to the link capacity in Enderby Village Centre (including the opportunities to complete the Enderby by-pass.

The Leicestershire County Council's Highway Design Guide

4.20 Leicestershire's Highway Design Guide builds on the 6 C's Design Guide previously used by the County. In clarifying the purpose of the guidance the forward to this document states:

"Leicestershire is currently facing many challenges, including population growth, health and obesity issues, climate change and changes to government policies for example the planning system. We must deal with these challenges whilst ensuring that their impact on our transport system, communities, individuals and the environment is minimised.

A highways design guide helps to respond to these issues – it provides clear and common guidance to developers across the county, whilst allowing flexibility to meet local requirements. It assists in the delivery of housing

growth, encourages sustainable development and minimises the impact of development on the highway. It also plays a vital role in the highway development management process."

4.21 The key paragraphs are as follows:

"Section IN4: Our highways development management policy
1.22 We will work with developers and planning authorities to make sure new development is only permitted:

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

1.23 Any highway or transport infrastructure required to support the development must integrate with the existing infrastructure and be built in a way that enhances the quality of a development and does not place a burden on our resources.

1.24 We aim to meet the following specific policy objectives.
Road and personal safety: To achieve developments that:
are safe for all users;

- promote road safety; and
- reduce personal safety risks (whether real or imagined).
- Accessibility: To achieve developments accessible to all vehicles and people, including those with sensory and mobility impairments.

Sustainability: To promote sustainable, high-quality alternatives to the private car and to encourage using sustainable materials wherever possible.
The impact on highways and transportation infrastructure: To make sure the:

- highways and transportation infrastructure is not adversely affected by developments, including safety and congestion; and
- impact on people and the environment is minimised."

4.22 Turning to section IN5 "Our access to the road network policy", this states:

"1.28 To maintain safety and the free flow of traffic, policy in the past has discouraged new accesses onto A and B-class roads and avoided increasing the use of existing accesses. For the future, and in line with an integrated transport policy, we will adopt a flexible policy on new connections to the road network. We will severely restrict access to the most important high-standard routes. Elsewhere, particularly in urban locations, in principle we will apply a more flexible approach. Please see paragraph 1.29 onwards for full details.

1.29 Where access is acceptable to us in principle, we will normally expect its layout to comply with the design guidance set out in Part 3. We will recommend refusal of any planning application that raises concerns about road safety. Approval for the access (and any associated development) will also depend on the planning authority where planning permission is required.

Access to A- and B-class roads

- 1.30 We will normally apply restrictions on new accesses for vehicles and the increased use of existing accesses on:
- roads with a speed limit above 40 mph (that is 50mph, 60mph or 70mph) or where measured vehicle speeds are in excess of 40mph;
- roads with a speed limit of 40mph or less which are essentially rural in nature;
- routes where the access would affect bus-corridor or bus-priority measures being put in place;
- roads that are at or near capacity (cannot carry more traffic); and
- roads where there is an existing problem with road safety.

1.31 Elsewhere, we will not normally restrict new accesses for vehicles, as long as they meet the conditions of paragraph 1.28. Also, where a number of developments are proposed along a section of road, the risk of accidents occurring will be reduced if they are accessed from a service road with a single point of access on the main road.

1.32 If access to a development can be gained off a minor or side road, you should normally consider this option as preferable (with improvements to the junction of the minor side road with the main road as necessary)."

4.23 It is considered that the measures proposed accord with the requirements of the LCC's Design guidance.

4.24 In addition to the above a review of 'Choose How you Move Leicester and Leicestershire Access fund for Sustainable Travel 2016' has been undertaken. This document sets out Leicester and Leicestershire's Strategic Economic Plan and identifies bids that have been put forward to enable improvements to be made to improve accessibility by sustainable modes.

4.25 For the Grove Park area, this report states:

"This is an existing employment site within the region of 44 large businesses. Congestion and journey time reliability is a real issue for employees of those businesses and parking is also a problem with over spilling from the car parks onto the surrounding highway network common. A number of the employers are currently hiring parking spaces from the nearby Enderby Park & Ride site to try and ease the parking pressure, but such provision will not be sustainable in the long term. The CHYM programme will help to introduce

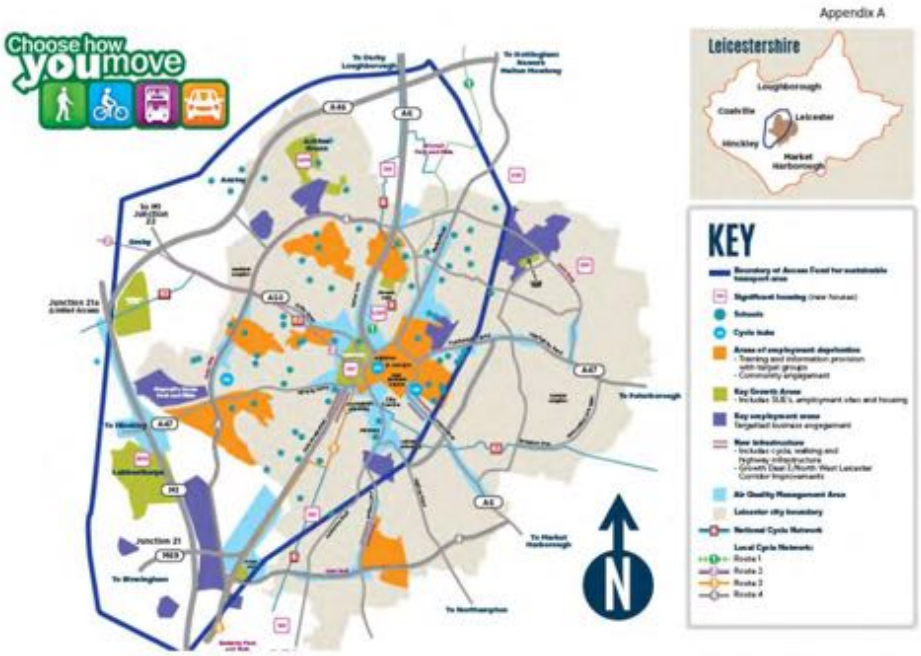
a sustainable travel culture and reduce the pressure on the highway network. It will also help to reduce the parking demand of this employment site."

4.26 The access fund objectives and sub-objectives, which the CHYM Leicester and Leicestershire bid supported, are as follows:

- "Objective 1: Support the local economy by supporting access to new and existing employment, education and training.
- Objective 2: To actively promote increased levels of physical activity through walking and cycling.
- Objective 2.1: Increase cycling activity
- Objective 2.2: Reverse the decline in walking
- Objective 2.3: Reduce the rate of cyclists killed and seriously injured.
- Objective 2.4: Increase the percentage of children aged 5 – 10 that usually walk to school.
- Objective 3: Demonstrate an understanding around how transport contributes to carbon emissions and air quality levels.
- Objective 4: Reduce traffic congestion through providing people travel choices."

4.27 Based on the Bid put forward, Leicester City council and Leicestershire County Council were able to obtain £3.2m towards boosting sustainable travel. The funding area is shown in the figure below.

Figure 2: Choose How You Move Access Funding Map



Summary

4.28 In summary, it is considered that the proposals accord with the local and national planning policy in relation to transportation issues.

4.29 Specifically, in relation to the NPPF, it is considered that the proposals accord with the relevant transport policies by providing a Transport Assessment. Furthermore, the residual cumulative impact of the proposal is not considered to be severe and the proposed Relief Road will provide benefits in terms of reducing journey times, congestion and in turn reduce air pollution resulting from stationary/ slow moving vehicles.

5 RELIEF ROAD PROPOSALS

Introduction

5.1 This section of the report considers the Relief Road proposals and sets out the overall measures to be provided. The details of the proposed Relief Road and the connections from this route to the local highway network are shown in detail on the plans attached at Appendix E of this report. The layout and design of the Relief Road that joins the New Lubbesthorpe access road to Warren Park Way have been carried out by BWB consultants.

Relief Road Proposals

5.2 As has been identified, the Relief Road is formed by connecting the existing Warren Park Way, to the proposed New Lubbesthorpe road infrastructure. Warren Park Way is adopted highway for most of this route from the junction with Mill Hill up to a point east of Feldspar Close where it joins Harold's Lane. The road varies in width to accommodate right turning facilities to the various accesses but is generally a minimum of 7.3m in width with verges and footways.

5.3 Parking restrictions are in place over the western extent of the road from the junction of Mill Hill, for some 360m to the southern side of the road, and for some 150m to the north side. Beyond the parking restrictions, there is on street parking generally to the north side of the road.

5.4 Whilst not specifically part of these proposals, but potentially as a consequence of the proposals, parking restrictions could be extended over much of the remainder of Warren Park Way and then extend to the new relief road and the new link within the New Lubbesthorpe development. To compensate for loss of on-street parking within Warren Park Way, parking bays could be formed within the verge making use of this and in part the carriageway, thereby formalising the parking within this area. Potential improvements identifying how parking could be managed are provided in **Appendix D.**

5.5 Over the new section of the Relief Road, the road will be constructed to provide a 7.3m wide carriageway, with a minimum 2m wide footway along the northern side of the road. This new section of the road connects Warren Park Way with the New Lubbesthorpe road infrastructure which is provided as part of that consent.

5.6 The New Lubbesthorpe infrastructure creates a new north / south link from Leicester Lane, through the employment land and ultimately crossing the M69. The road proposals through the New Lubbesthorpe development are subject to a Reserve Matters planning application and would provide a minimum 7.3m carriageway with footways and cycleway provision. Both this road and the new Relief Road would be street lit.

5.7 Accordingly, the Relief Road would form a connection between these routes and provide an alternative corridor for movement from areas to the north of Enderby, to Leicester Lane and hence the broader network, avoiding the existing Enderby signalised crossroads junction.

5.8 The junction with Leicester Lane is provided by the New Lubbesthorpe scheme and has been amended from the originally consented scheme of a roundabout to a signal controlled junction which has now been implemented. This arrangement is shown in detail on the plan attached at **Appendix E.**

5.9 The existing junction arrangement at the Warren Park Way/ Mill Junction is currently a simple priority junction with a ghost island right turn lane. As part of the proposed Relief Road this junction will be upgraded to provide a signalised junction arrangement. This arrangement includes for two approach lanes on each arm and controlled pedestrian crossing facilities. The proposed layout is shown in detail at **Appendix F**, together with Swept Path analysis using a max size legal articulated vehicle.

5.10 This junction layout has been subject to an independent Stage 1 Road Safety Audit and a copy of this Audit and the designer's response is included in **Appendix G.**

5.11 This improvement involves land outside of the public highway and would be implemented via a separate planning application to that for the Enderby Relief Road.

5.12 This report includes an assessment of the base flow data on the network including the effect of the consented schemes mentioned earlier in this report, and then compares this to the proposed network including the relief road. As part of the proposed traffic flows the effect of the proposed Enderby Hub development to the south of Leicester Lane is included.

5.13 In undertaking this assessment, this TA considers the benefits the new Relief Road brings about by re-routing traffic out of the centre of Enderby. The base line traffic flows and assessments show the existing extensive queuing of traffic that exists within Enderby at the existing Leicester Lane/ Blaby Road signal junction. Furthermore, it is recognised that traffic associated with the commercial uses to the north of Enderby, such as Next, currently route through Enderby and impact on this junction.

5.14 Appropriate signage will be required at the Warren Park/ Mill Hill junction and the Leicester Lane junction to direct through traffic appropriately.

Summary

5.15 In summary the proposed Relief Road will provide a connection between Mill Hill and Leicester Lane, allowing traffic to be re-routed away from the centre of Enderby. Such measures are considered to have a local benefit to traffic within Enderby village as well as offering a more widespread effect on the routing of traffic associated with existing committed developments.

5.16 As part of this assessment the effect of the benefits of this scheme are assessed in the context of the proposed Enderby Hub development to the south of Leicester Lane.

6 TRAFFIC REASSIGNMENT

Introduction

6.1 This section of the report sets out the basis of the baseline traffic flows that are considered on the study network, and then identifies the proposed reassignment and distribution of the traffic as a consequence of the proposed Enderby Relief Road.

6.2 As part of this work the trip rate generation and distribution of the proposed Enderby Hub development south of Leicester Lane has been taken into account which is set out in detail in the Transport Assessment associated with that development proposal.

Traffic Flow Data

6.3 The assessment has been undertaken on the basis that the 2018 flows, which are based on the original 2015 traffic flows and updated to reflect 2017/2018 traffic data, is the base data to which the committed developments of the new Everards Meadows, Castle Acres retail development and the New Lubbesthorpe scheme have been added. By including these local development sites, it is considered that this will cover the level of growth that will be experienced in this area; as such no further background growth has been applied.

6.4 The trips used as part of the New Lubbesthorpe development have been based on those included in the original Transport Assessment for this site. This method has been set out in Section 2 and is considered to provide a greater level of traffic movements locally compared to the LLITM model for 2026. As such, this is considered a robust approach for this assessment. The traffic movements have also been reviewed as part of the Microsimulation modelling work which is reviewed in Section 8 of this report.

6.5 In addition, a review of TEMPro V7.2b identifies that between 2015 and 2024 the assumptions include for an increase of 745 jobs in the area Blaby 06 which includes all of the Fosse Park and Lubbesthorpe area, and 269 new dwellings. For 2015 – 2029 TEMPro identifies a total of 994 jobs and 408 new houses.

6.6 The proposed assessment included as part of this TA assumes that in 2024 base the Castle Acres and Everards Meadows developments will be operational which in turn are likely to generate around 1,300 jobs, in addition the 2024 base includes for 1,000 dwellings on New Lubbesthorpe as well as 40% of the employment use. In 2029, this assessment includes for the Castle Acres, Everards Meadows and full development of New Lubbesthorpe which in turn equates to in excess of 3,000 jobs and 4,500 dwellings. As can be seen the TA will include for a much greater level of jobs and housing in this area when compared to TEMPro and as such ensures that a robust future assessment is carried out. Accordingly, background growth through the application of TEMPro has not been undertaken as this would result in double counting the effect of the committed developments.

6.7 The assessment includes a base 2015, future 2024 and 2029 scenarios. As previously stated, for the 2024 scenario, it is assumed that this includes the development of 1,000 dwellings and 40% of the employment allocation on the New Lubbesthorpe SUE site together with the infrastructure required by that development to mitigate the effect of the development commensurate with that permission. Associated with this level of development are various offsite

mitigation measures; however the M69 bridge crossing is not included in that phase. The 2029 assessment includes the full provision of the New Lubbesthorpe site and the full mitigation proposed, which includes the M69 bridge.

6.8 The other committed developments at the Castle Acres development and the new Everards Meadows are included in both the 2024 and 2029 figures. To these flows the Enderby Hub development traffic has been added and the impact on the various junctions is assessed.

6.9 Whilst assessment years are identified, the assessment is on the basis of the level of development that is completed/ occupied rather than when it is completed. Therefore the 2029 future assessment, which includes the full New Lubbesthorpe development trips, is considered overly robust as it is unlikely that this site will be fully constructed and occupied by that time.

6.10 Accordingly, the various assessment scenarios are as follows:

- **2015 Flows** - This is the baseline traffic flow data;
- **2024 Baseline Traffic** - This relates to the 2015 data plus committed developments including the New Lubbesthorpe Scheme up to 1000 dwellings plus 40% of the SES employment development including the mitigation required for this;
- **2029 Baseline Traffic -** This relates to the 2015 data plus committed developments including the New Lubbesthorpe Scheme and resultant mitigation;
- **2024 Proposed Flows** - This is as per the 2024 baseline figures, plus the development traffic and the inclusion of the Enderby Relief Road, and the proposed Enderby Hub development (Opening Year); and
- **2029 Proposed Flows** - This is as per the 2029 baseline figures, plus the development traffic and the inclusion of the Enderby Relief Road, and the proposed Enderby Hub development (Future Year).

6.11 The base without development scenario is based on the 'without Enderby Relief Road' assessment. The scenario with the proposed Enderby Hub development includes the Enderby Relief Road. As previously stated, the Proposed Enderby Hub development on land south of Leicester Lane is part of a separate but parallel planning application.

6.12 The trips that are considered likely to use the Enderby Relief Road have been taken from the turning movements at the existing High Street/ B582/ Leicester Lane junction. It has been assumed that 80% of traffic turning right from Leicester Lane onto B582 and 80% of traffic turning left from B582 to Leicester Lane will use the new relief road. The assumption of 80% of traffic is to ensure that a robust assessment is undertaken for the proposed Warren Park Way/ Mill Hill junction. Additional trips associated with New Lubbesthorpe have also been assigned via the ERR. Details of the traffic flows are provided in **Appendix H.**

6.13 It is considered that the assessment of the proposed Relief Road is based on robust development flows which do not fully reflect the opportunities for sustainable travel options within close proximity to the Hub development. Accordingly, it is considered that with the positive initiatives promoted by the Travel Plan in place for the Hub development, the impact of the employee traffic will be less than that assessed and that the overall impact assessment can be seen as a worst case.

Traffic Assessment Flows

6.14 The baseline traffic flows referred to in Section 2 of this report, form the baseline traffic flows to which committed development has been added. These flows are shown in detail on the study network on the diagrams included in **Appendix C** of this report for 2015, 2024 and 2029.

6.15 To these flows the trip generation flows as identified in the Enderby Hub development TA are included, together with the changes to the network to include the Enderby Relief Road. These proposed flow diagrams are attached at **Appendix H.**

6.16 To clarify this point, the assumptions of the baseline infrastructure and the proposed development infrastructure are shown in the diagrams shown attached at **Appendix H** These scenarios are then tested at each of the junctions on the study network within the following section of this report.

7 IMPACT ASSESSMENT

Introduction

7.1 Within this section of the report the impact of the changes to the study network as a consequence of the Enderby Relief Road are assessed on the local highway network. This has been undertaken on the junctions local to the site which are likely to be affected by the Relief Road. This also includes the effect of the Enderby Hub development traffic as part of the proposed scenarios.

7.2 Accordingly, the various assessment scenarios are as follows:

- **2015 Flows** - This is the baseline traffic flow data;
- **2024 Baseline Traffic** - This relates to the 2015 data plus growth plus committed developments including the New Lubbesthorpe Scheme up to 1000 dwellings plus 40% of the SES employment development including the mitigation required for this, plus Castle Acres and Everards Meadows developments;
- **2029 Baseline Traffic** - This is as above but includes for the whole of the New Lubbesthorpe development and resultant mitigation;
- **2024 Proposed Flows** - This is as per the 2024 baseline figures, plus the development traffic and the inclusion of the Enderby Relief Road and B8 development traffic (Opening Year); and
- **2029 Proposed Flows** - This is as per the 2029 baseline figures, plus the development traffic and the inclusion of the Enderby Relief Road and the B8 development traffic (Future Year).

Impact Assessment

7.3 The changes to the traffic movements as a result of the proposed Relief Road are considered to be localised to Leicester Lane and B582, therefore only the following junctions have been included as part of this TA:

- Warren Park Way / B582;
- B582 / Leicester Lane; and
- Leicester Lane / PUE (Lubbesthorpe Access).

7.4 The Enderby Relief Road although a separate planning application, will be implemented as part of the Enderby Hub development proposal therefore the results of the analysis provided in this TA are the same as those included in the TA for the Enderby Hub development proposal. The completed assessments of each junction are included at **Appendix I** with the summary of the junction assessments included below.

7.5 The priority junction arrangements have been assessed using Junctions 9 software and the signalised junctions using LINSIG.

7.6 The queue lengths identified as part of the base traffic surveys have been reviewed against the base capacity outputs to ensure the modelling undertaken is reflecting how the existing junction operates.

7.7 It should be noted that the traffic movements used as part of this assessment are robust as they are greater than the flows identified in the Microsimulation model (See Chapter 8). The likely reason for this is that the flows used in this assessment simply add the proposed traffic flows to each of the junctions within the network whereas the modelling will allow for an element of rerouting of traffic where junctions are constrained.

Mill Hill / Warren Park Way Junction

7.8 As part of the Relief Road proposals the Warren Park Way / Mill Hill B582 junction will be upgraded from a priority arrangement to a signal controlled junction. This arrangement is shown in Appendix F. The baseline assessment of the existing priority junction has not been undertaken, but it is recognised that during the peak hours, traffic regularly queues through this junction as a consequence of the capacity constraints within the Enderby crossroads to the south.

7.9 The assessments undertaken assumes that the pedestrian all red phase is called every other cycle, which is considered reasonable for this location. The results are provided in the tables below.

Table: 7.1: Mill Hill / Warren Park Way – Proposed Signalised Layout – AM Peak

	Warren Park Way		B582 Northwest Bound		B582 Southeast Bound		Granite Close (Priority Junction)		PRC (%)
	Deg of Sat (%)	Q	Deg of Sat (%)	Q	Deg of Sat (%)	Q	Deg of Sat (%)	Q	
AM Peak (With Enderby Relief Road)									
2024 Baseline (Committed + Part Lubbes Dev) With Proposed Dev	89.2%	14	34.6%	6	89.6%	25	15.8%	0	0.4
2029Baseline (Committed + Full Lubbes Dev) With Proposed Dev	88.5%	14	34.8%	6	88.2%	25	15.9%	0	1.6

Table: 7.2: Mill Hill / Warren Park Way – Proposed Signalised Layout – PM Peak

	Warren Park Way		B582 Northwest Bound		B582 Southeast Bound		Granite Close (Priority Junction)		PRC (%)
	Deg of Sat (%)	Q	Deg of Sat (%)	Q	Deg of Sat (%)	Q	Deg of Sat (%)	Q	
PM Peak (With Enderby Relief Road)									
2024 Baseline (Committed + Part Lubbes Dev) With Proposed Dev	67.8%	8	68.0%	12	62.6%	8	7.3%	0	32.4
2029 Baseline (Committed + Full Lubbes Dev) With Proposed Dev	64.0%	7	64.2%	11	59.6%	7	7.3%	0	40.1

7.11 The assessment of this junction shows that even with robust figures this proposed junction arrangement will operate within its design capacity and assist in re-assigning traffic from the centre of Enderby. This junction will also include MOVA (Microprocessor optimised Vehicle Actuation) which is an intelligent signal operating system that adjusts the green times to suit the traffic demands at the junction and in turn improves capacity by around 13% compared to fixed signal timed junctions.

Leicester Lane / B582 / Blaby Road Junction

7.12 The existing signalised junction within the centre of Enderby currently experiences queuing at peak times on all approaches to the junction. The tables below review the impact on the junction based on the existing layout with and without the Enderby Relief Road.

Table: 7.3: Leicester Lane / B582 Junction – Existing Layout – AM Peak

	B582 Hall Walk		B5365 Leicester Lane		B582 Blaby Road		PRC (%)
	Deg of Sat (%)	Q	Deg of Sat (%)	Q	Deg of Sat (%)	Q	
AM Peak (Without Enderby Relief Road)							
2015 AM Peak Base	93.2%	29	98.1%	29	97.8%	28	-9.0
2024 Baseline (Committed + Part Lubbes Dev) No Dev	106.9%	63	107.2%	68	107.2%	68	-19.1
2029 Baseline (Committed + Full Lubbes Dev) No Dev	108.9%	69	107.8%	57	106.9%	73	-21.0
AM Peak (With Enderby Relief Road)							

	B582 Hall Walk		B5365 Leicester Lane		B582 Blaby Road		PRC (%)
	Deg of Sat (%)	Q	Deg of Sat (%)	Q	Deg of Sat (%)	Q	
2024 Baseline (Committed + Part Lubbes Dev) With Proposed Dev	35.6%	7	62.1%	6	61.8%	9	45.0
2029 Baseline (Committed + Full Lubbes Dev) With Proposed Dev	37.8%	8	64.8%	7	65.1%	10	38.3

Table 7.4: Leicester Lane / B582 Junction – Existing Layout – PM Peak

	B582 Hall Walk		B5365 Leicester Lane		B582 Blaby Road		PRC (%)
	Deg of Sat (%)	Q	Deg of Sat (%)	Q	Deg of Sat (%)	Q	
PM Peak (Without Enderby Relief)							
2015 PM Peak Base	86.5%	26	85.4%	17	80.8%	10	4.0
2024 Baseline (Committed + Part Lubbes Dev) No Dev	91.8%	30	91.4%	23	90.4%	13	-2.0
2029 Baseline (Committed + Full Lubbes Dev) No Dev	92.8%	31	93.1%	23	91.9%	15	-3.4
PM Peak (With Enderby Relief Road)							
2024 Baseline (Committed + Part Lubbes Dev) With Proposed Dev	49.6%	11	54.0%	9	54.2%	9	66.0
2029 Baseline (Committed + Full Lubbes Dev) With Proposed Dev	49.7%	11	57.1%	9	57.4%	9	56.9

7.13 The above assessment shows that with the existing arrangement there is queuing along B582, this is known to extend further than that identified in the model. However, with the proposed Relief Road the redistribution of traffic movements is likely to significantly improve the operation of this junction. To some extent the use of the Relief Road will be dependent on the level of congestion at the existing signal junction and the control of this junction may need to be re-considered post implementation of the Relief Road, to ensure the full benefit of the traffic re-routing is achieved.

7.14 Potential measures to encourage drivers to use the ERR include the provision of traffic calming on Leicester between the Lubbesthorpe employment access and B582. Further details of this are provided in paragraph 8.25 of this TA.

Leicester Lane / New Lubbesthorpe Site Access

7.15 This junction has been provided as part of the New Lubbesthorpe development and will connect to the New Lubbesthorpe employment areas together with the residential areas north of the M69. A plan showing this arrangement is included in **Appendix A.**

7.16 With the Relief Road a new link will connect this junction with Mill Hill and in turn increase the use of this junction on the current access road arm. The assessments below include both with and without the Relief Road in place. The LINSIG model used as part this assessment has been provided by LCC, although the cycle times have been increased to 120 seconds for this assessment.

Table 7.5: Leicester Lane / PUE Junction (Proposed Signal Layout LCC designed) – AM Peak

	Leicester Lane (West)		Access to PUE		Leicester Lane (East)		PRC (%)
	Deg of Sat (%)	Q	Deg of Sat (%)	Q	Deg of Sat (%)	Q	
AM Peak (Without Enderby Relief Road)							
2024 Baseline (Committed + Part Lubbes Dev) No Dev	86.4%	26	6.1%	1	86.2%	21	4.2
2029 Baseline (Committed + Full Lubbes Dev) No Dev	90.8%	28	33.3%	6	89.6%	24	-0.9
AM Peak (With Enderby Relief Road)							
2024 Baseline (Committed + Part Lubbes Dev) With Proposed Dev	67.7%	14	32.0%	6	66.8%	16	33.0
2029 Baseline (Committed + Full Lubbes Dev) With Proposed Dev	73.6%	14	56.1%	13	73.8%	20	22.0

Table 7.6: Leicester Lane / PUE Junction (Proposed Signal Layout LCC Designed) – PM Peak

	Leicester Lane (West)		Access to PUE		Leicester Lane (East)		PRC (%)
	Deg of Sat (%)	Q	Deg of Sat (%)	Q	Deg of Sat (%)	Q	
PM Peak (Without Enderby Relief Road)							
2024 Baseline (Committed + Part Lubbes Dev) No Dev	72.8%	19	20.8%	2	72.5%	16	23.6
2029 Baseline (Committed + Full Lubbes Dev) No Dev	84.8%	22	22.6%	4	86.3%	23	4.3

	Leicester Lane (West)		Access to PUE		Leicester Lane (East)		PRC (%)
	Deg of Sat (%)	Q	Deg of Sat (%)	Q	Deg of Sat (%)	Q	
PM Peak (With Enderby Relief Road)							
2024 Baseline (Committed + Part Lubbes Dev) With Proposed Dev	46.7%	8	40.5%	9	48.0%	6	87.6
2029 Baseline (Committed + Full Lubbes Dev) With Proposed Dev	67.8%	9	43.9%	8	67.4%	16	32.7

7.17 The assessment of this junction shows that with the Relief Road in place the junction will operate well within its design capacity. The analysis shows that in the AM and PM Peak hours with the Relief Road the overall capacity for the junction will improve. This is because with the Relief Road, the volume of traffic travelling along Leicester Lane West is reduced.

Summary

7.18 In summary therefore, the proposed Enderby Relief Road will provide benefits to traffic flows within Enderby along the B582 reducing the number of movements through the Leicester Lane/ Blaby Road junction. The assessments of the local junctions are shown to operate within their design capacity with the changes in traffic as a result of the Relief Road and also the proposed Enderby Hub development traffic.

8 REVIEW OF LCC MICROSIMULATION MODEL

Introduction

8.1 Consultants Aecom have been commissioned by Leicestershire County Council (LCC) on behalf of RPS to undertake an assessment of development and transport infrastructure around Enderby with the primary focus being to assess the impact of the Land South of Leicester Lane (Enderby Hub development) and the proposed construction of the Enderby Relief Road. A copy of their final report is included in the TA accompanying the Enderby Hub planning application.

8.2 The extent of the area included in the model is identified in Figure 2 below and includes the following agreed key junctions:

- Leicester Lane / Smith Way;
- Leicester Lane / Smith Way and Proposed access to Enderby Hub Site;
- Proposed site access to Enderby Hub site off St. John's (B4114);
- Leicester Lane / B4114 St. John's / Police HQ;
- Leicester Lane / Park & Ride Access;
- B4114 / Blaby Road / Enderby Road (Fox Hunter) junction;
- Leicester Lane / Blaby Road;
- Mill Hill / Warren Park Way;
- Leicester Lane / New Lubbesthorpe Site;
- A563 Soar Valley Way / B4114 St. John's;
- Smith Way / Penman Way;
- Grove Park / A563 / Penman Way;
- A563 / A5460 / Meridian South Roundabout;
- A562 / A5460 Westbound merge / diverge slips; and
- M1 / M69 / A5460 junction.

8.3 All of the above junctions have been assessed within the Enderby Hub Transport Assessment, although only the results of the local junctions on B582 and Leicester Lane have been included as part of this TA as the impact of the Enderby Relief Road does not affect the other junctions.

Figure 2: Extent of LCC's Microsimulation Model

Source: Aecom 'Enderby Paramics Discovery Microsimulation Model' 5 March 2018

8.4 The modelling includes a review of the LLITM 2014 model to ensure that the Microsimulation model was consistent with the base in terms of journey times and link flows. The proposed model for the future 2026 scenarios includes background growth as well as the committed development including New Lubbesthorpe development, the proposed Castle Acres retail development and the new Everards Meadows development. The resultant additional growth added to the network equates to some 35% and 24% in the AM and PM Peaks respectively.

8.5 The modelling scenarios assessed include the following:

Table 8.1: Scenarios Modelled

Model Ref.	Year	Scenario	Other Developments	Enderby Relief Road	M69 Bridge
A	2016	Base	No	No	No
B	2026	Do Minimum 1	New Lubbesthorpe: 1000 dwellings, 40% SES employment and associated infrastructure	No	No
C	2026	Do Something 1	Do Minimum 1 plus Castle Acres and Everards Meadows development plus associated mitigation.	No	No
D	2026	Do Minimum 2	Full New Lubbesthorpe and associated infrastructure	No	Yes

Model Ref.	Year	Scenario	Other Developments	Enderby Relief Road	M69 Bridge
E	2026	Do Something 2	Do Minimum 2 plus Castle Acres and Everards Meadows development plus associated mitigation.	No	Yes
F	2026	Proposed 1 (A)	Do Something 1 plus the Enderby development, no mitigation.	No	No
G	2026	Proposed 1 (B)	Do Something 1 plus the Enderby development and ERR mitigation.	Yes	No
H	2026	Proposed 2	Do Something 2 plus the Enderby development and ERR mitigation.	Yes	Yes

Infrastructure Measures

8.6 8.6 The modelling includes for infrastructure associated with the New Lubbesthorpe Development which includes:

- Leicester Lane Junction access to New Lubbesthorpe Strategic Employment Area:
  - Proposed New Bridge across the M69;
  - Improvements to the Leicester Lane / B4114 junction to allow right turners from Leicester Lane;
  - Improvements to the Foxhunter roundabout (B4114 / Blaby Road);
  - Signalisation of the Meridian South junction; and
  - Widening along the A5460 between M1 / M69 junction and A5460 / B4114 junction.

8.7 The model also includes the following infrastructure measures associated with the Castle Acres and new Everards Meadows development proposals:

- Closure of Everards Way;
- New egress onto A563;
- New access off Grove Way / change in road layout on Grove Way;
- New access and egress off A563 to Everards Meadows; and
- New access only off B4114.

8.8 The above infrastructure has been included in all 2026 modelling scenarios. It has been advised that the model does not include the proposed SCOOT system that is being funded by the Castle Acres development as it is not possible to model SCOOT within the Microsimulation model. In effect the use of a SCOOT system is likely to improve the performance of the junctions by around 15% to 20%.

8.9 For the proposed models the additional infrastructure includes:

- Warren Park Way / Mill Hill proposed signal junction (With Enderby Relief Road only);

- Enderby Relief Road linking Warren Park Way with Leicester Lane;
- Signalised access off Leicester Lane; and
- Proposed 'left in left out' arrangement off B4114 St. John's.

Proposed Development

8.10 The parameters used for the proposed Enderby Hub development include 98,662sqm of B8 Use and a 4,645sqm training centre. The trips associated with this use have been based on that provided by RPS to Aecom associated with that Transport Assessment.

Review of the Modelling Results

8.11 The assessment of the model is primarily based on a comparison of Model G statistics with Model C, this being a direct comparison of the 'with' and 'without' development assessments based on the 2026 "Do Something 1" scenarios. The second comparison is Model H and Model E, with this being a comparison of the 'with' and' without' development assessments based on the 2026 "Do Something 2" scenarios.

8.12 The modelling provides a variety of network performance statistics, however the key parameters to compare are considered to be the numbers of completed trips and the average travel times within the model. The comparison of the number of completed trips gives an understanding of the ability of the network to accommodate the demand flows with higher levels of completed trips reflecting a more efficient network.

8.13 The second comparison is the average travel times with shorter travel times again reflecting a more efficient network.

8.14 The model provides the following results:

Table 8.2: Enderby Model Network Performance Statistics – AM Peak Hour (Models C & G)

	Model C	Model G	Change
Total Trips Completed	28,062	28,245	+183
Input Demand	28,240	28,353	+113
Average Incomplete Trips	178	108	-70
Total Travel Time (Vehicles/Hr)	4,254	4,251	-3

Table 8.3: Enderby Model Network Performance Statistics – AM Peak Hour (Models E & H)

	Model E	Model H	Change
Total Trips Completed	26,418	29,112	+2,694
Input Demand	29,021	29,173	+152
Average Incomplete Trips	2,603	61	-2542

	Model E	Model H	Change
Total Travel Time (Vehicles/Hr)	6,140	5,242	-898

Source: Table 5.1: Network Performance Statistics – AM Peak Hour: Aecom's 'Enderby Paramics Discovery Microsimulation Modelling' report 19 Jan 2018

Table 8.4: Enderby Model Network Performance Statistics – PM Peak Hour (Models C & G)

	Model C	Model G	Change
Total Trips Completed	28,101	28,844	+746
Input Demand	28,761	28,907	+146
Average Incomplete Trips	660	63	-597
Total Travel Time (Vehicles/Hr)	3,586	2,467	-1,119

Table 8.5: Enderby Model Network Performance Statistics – PM Peak Hour (Models E & H)

	Model E	Model H	Change
Total Trips Completed	16,979	29,909	+12,930
Input Demand	29,931	30,085	+154
Average Incomplete Trips	12,952	176	-12,776
Total Travel Time (Vehicles/Hr)	4,344	4,087	-257

Source: Table 5.2: Network Performance Statistics – PM Peak Hour: Aecom's 'Enderby Paramics Discovery Microsimulation Modelling' report 19 Jan 2018

8.15 As can be seen, with the development proposal there will be an increase in the number of completed trips through the network both in the AM and PM Peaks, which increases significantly with the full New Lubbesthorpe development in place. However, the average number of incomplete trips reduces, this improvement is as a result of the proposed Enderby Relief Road which assists with the movement of vehicles to the west of the area.

8.16 The travel time statistics show that the average total travel time reduces for vehicles with the proposed development and associated infrastructure in place when compared to the without development scenario.

8.17 When looking specifically at the changes in traffic flow between Leicester Lane and Blaby Road at the crossroads junctions within Enderby, it can be seen that there is a reduction in traffic flow on this route in the order of 15% in the AM peak and 13% in the PM peak which is associated with the provision of the Enderby Relief Road. In this regard, it is considered that through adjustments to the signal timings at this junction further reassignment of traffic would be achievable thereby reducing traffic along the existing B582 corridor through Enderby. Such a reduction in traffic movements will assist in improving the Air Quality management corridor along Mill Hill (B582) within Enderby.

8.18 The overall conclusions of the Aecom report are:

"The future year modelling has indicated a number of consistent trends and findings. It is apparent that a number of models are extremely congested during the peak hour and afterwards resulting from the magnitude of development in the area.

As a result, the models are extremely volatile with the results impacted by excessive congestion, and the most significant impacts on the network being demonstrated in the model after the peak hour has finished (i.e. in the shoulder hour).

Notwithstanding the above, the results suggest that compared with the Do Something 1 scenarios (Model C) the addition of the LSLL (Land south of Leicester Lane) development, along with the Enderby Relief Road (Model G), has a positive impact in the network operations during both the AM and PM peak hours. Likewise, although extremely congested, compared with the Do Something 2 scenario (Model E) the addition of the LSLL development, along with the Enderby Relief Road (Model H), has a positive impact on the network operations during both the AM and PM peak hours."

8.19 The tables below identify the differences between the traffic flows used as part of this Transport Assessment and the Microsimulation assessment. The scenarios reviewed are as follows:

- RPS 2015 Base v 2016 Base (Microsimulation Model) Model A.
- RPS 2026 Base with Committed Dev (Inc. Full New Lubbesthorpe Dev) + Dev and Enderby Relief Road v 2026 Model H.

Table 8.6: Base Flow Comparisons

Flow Entry Point Ref No.		AM Peak		PM Peak	
	Road Name	Base 2015 Traffic Flows (RPS data)	Base 2016 (Model A)	Base 2015 Traffic Flows (RPS data)	Base 2016 (Model A)
1	A5460 Eastbound	3595	3287	2776	2653
2	Meridian South	290	297	781	837
3	A563 Lubbesthorpe Way SB	1685	1669	1445	1489
4	A5460 Westbound	1319	1375	1391	1508
5	B4114 Narborough Road South (SB)	1611	1601	1463	1351
6	A563 Soar Valley (WB)	2298	2309	1850	1555
7	Blaby road B582 (WB)	996	955	898	880
8	B4114 Leicester Road (NB)	1713	1945	1336	1240
9	Blaby Road (EB)	479	540	473	462
10	Blaby Road (NB)	846	849	587	649
11	Accesses onto Hall Walk*	7	54	0	66
12	Warren Park Way	95	64	220	231
13	Mill Hill (SB)	912	544	730	565

Flow Entry Point Ref No.	Road Name	AM Peak		PM Peak	
		Base 2015 Traffic Flows (RPS data)	Base 2016 (Model A)	Base 2015 Traffic Flows (RPS data)	Base 2016 (Model A)
14	New Lubbesthorpe SES Access onto Leicester Lane	NA	NA	NA	NA
Network Total 'In' Flows		15,846	15,489	13,950	13,486

(*) difference in movements between Warren Park Way and Leicester Lane junctions.

8.20 The above table shows that in the base situation, the traffic flows used within the TA are 357 more in the AM Peak 464 more in the PM Peak. This over the area of network reviewed is considered a reasonable level of difference for the base models.

Table 8.7: Base 2026 Flow Comparisons with Committed Dev including Full Lubbesthorpe Dev + Enderby Hub and Enderby Relief Road

Flow Entry Point Ref No.	Road Name
1	A5460 Eastbound
2	Meridian South
3	A563 Lubbesthorpe Way SB
4	A5460 Westbound
5	B4114 Narborough Road South (SB)
6	A563 Soar Valley (WB)
7	Blaby road B582 (WB)
8	B4114 Leicester Road (NB)
9	Blaby Road (EB)
10	B582 Hall Walk (NB)
11	Accesses onto Hall Walk*
12	Warren Park Way
13	Mill Hill (SB)
14	New Lubbesthorpe SES Access onto Leicester Lane
Network Total 'In' Flows	

(*) difference in movements between Warren Park Way and Leicester Lane junctions.

8.21 The above tables show that over the various scenarios, the TA includes more traffic movements within the study area than the Microsimulation model in both peak periods. This is likely to be because the TA simply adds the proposed and committed development flows to each of the junctions within the network whereas the modelling adds the development traffic to the overall model.

8.22 Overall the modelling demonstrates that the assessments undertaken within this TA are sufficiently robust.

8.23 The modelling recommends the following improvements:

- Upgrades to the Leicester Lane / Blaby Road junction; and
- Upgrades to the Leicester Lane / St. John's / Narborough Road South Junction.

8.24 The analysis undertaken within this TA report and the TA report accompanying the Enderby Hub application has considered these junctions in detail with more robust flows and has demonstrated the junction operates within capacity. However, a drawing has been prepared showing a potential upgrade to the Leicester Lane / St John's junction by providing a second right turning lane from St Johns into Leicester Lane. This drawing is included in **Appendix I** and could be delivered as part of the development if considered a requirement by LCC.

8.25 For the Leicester Lane/ Blaby Road junction the emphasis will be to discourage drivers from using the section of Leicester Lane west of the New Lubbesthorpe access. To do this it is proposed that traffic calming measures in the form of priority working could be implemented which would add some additional delay to drivers travelling along this route and encourage them to use the new Enderby Relief Road. This arrangement would also include extending the existing 30mph speed limit further eastward and could also include a new gateway entry treatment. A plan showing these measures is included in **Appendix J.**

8.26 These measures together with the measures proposed at the Foxhunter and Meridian South junctions, and the provision of the Enderby Relief Road will help to improve the flow of traffic and reduce congestion on the local highway network.

9 SUMMARY AND CONCLUSIONS

Summary

9.1 This report provides an assessment of the transport implications relating to the provision of the Enderby Relief Road and the changes in traffic flow and hence junction capacities that stem from this.

9.2 Whilst part of a separate planning application, these proposals are linked to the Enderby Hub development of circa, 1M sq. ft. B8 warehouse distribution on land to the south of Leicester Lane, Enderby. Accordingly, the assessment of the ERR compares the road network without the Enderby Relief Road as a worse case, against the proposals with the Enderby Relief Road, but also taking account the development traffic from the Enderby Hub development.

9.3 The Enderby Relief Road is formed by connecting the existing Warren Park Way, to the proposed New Lubbesthorpe road infrastructure. Warren Park Way is adopted highway for most this route from the junction with Mill Hill. The New Lubbesthorpe infrastructure creates a new north / south link from Leicester Lane, through the employment land and ultimately crossing the M69. The relief road would form a connection between these routes and provide an alternative corridor for movement from areas to the north of Enderby, to Leicester Lane and hence the broader network.

9.4 The proposed Enderby Relief Road will include footways along both sides of the road which will allow residents within Enderby a direct route to gain access to the new employment areas proposed as part of the New Lubbesthorpe Development. The proposed Enderby Relief Road will also benefit those within the New Lubbesthorpe Development north of the M69 to gain access to the employment facilities along Warren Park Way.

9.5 The existing junction arrangements at the Warren Park Way / Mill Hill are currently a simple priority junction with a ghost island right turn lane. As part of the proposed ERR this junction will be upgraded to provide a signalised junction arrangement. This arrangement includes for two approach lanes on each arm and controlled pedestrian crossing facilities. This proposal will be delivered via a separate planning application to the ERR proposals.

9.6 This report includes an assessment of the base flow data on the network including the effect of the consented schemes such as New Lubbesthorpe, Everards Meadows development, and Castle Acres Retail development, and then compares this to the proposed network including the Relief Road. As part of the proposed traffic flows the effect of the proposed Enderby Hub development to the south of Leicester Lane is included.

9.7 A review of the 2015 data has been carried out reviewing the base traffic against 2017 and 2018 traffic data, the results show that the 2015 traffic data is higher than the 2017 and 2018 data and therefore the use of this data is considered suitably robust for the purpose of this report.

9.8 In undertaking this assessment, this TA demonstrates the benefits the ERR will bring about by re-routing traffic out of the centre of Enderby. The base line traffic flows and assessments show the extensive queuing of traffic that exists within Enderby at the existing Leicester Lane/ Blaby Road signal junction. Furthermore, it is recognised that traffic associated with the commercial uses to the north of Enderby currently route through Enderby and impact on this junction.

9.9 The assessments of the local junctions are shown to operate within their design capacity with the changes in traffic as a result of the ERR and also the proposed Enderby Hub development traffic.

9.10 In addition to this TA assessment work, Aecom have been commissioned by Leicestershire County Council (LCC) on behalf of RPS to undertake an assessment of development and transport infrastructure around Enderby with the primary focus being to assess the impact of the Land South of Leicester Lane (Enderby Hub development) and the proposed Enderby Relief Road.

9.11 This modelling concludes that the proposed Enderby Relief Road provides a positive impact on the local road network reducing journey times and reducing the number of incomplete trips through the network.

9.12 Overall the modelling demonstrates that the assessments undertaken within this TA are sufficiently robust.

9.13 The modelling recommends the following improvements:

- Upgrades to the Leicester Lane / Blaby Road junction; and
- Upgrades to the Leicester Lane / St. John's / Narborough Road South Junction.

9.14 Details for these potential improvements are included in this report. These measures together with the measures proposed at the Foxhunter and Meridian South junctions, and the provision of the Enderby Relief Road will help to improve the flow of traffic and reduce congestion on the local highway network.

9.15 In terms of policy, it is considered that the proposals accord with the local and national planning policy in relation to transportation issues.

9.16 Specifically, in relation to the NPPF, it is considered that the proposals accord with the relevant transport policies by providing a Transport Assessment. Furthermore, the residual cumulative impact of the proposal is not considered to be severe and the proposed Enderby Relief Road will provide benefits in terms of reducing journey times, congestion and in turn reduce air pollution resulting from stationary/ slow moving vehicles.