

A vertical yellow bar is positioned to the left of the text.

**Blaby District Core Strategy  
Development Plan  
Document (Submission  
Version)**

**Transport Impact  
Assessment**

January 2012  
FINAL

Issue No 1.1  
Pending /

**Transport Impact Assessment**

---

Project Title: Blaby District Core Strategy Development Plan Document (Submission Version)

Report Title: Transport Impact Assessment

Project No: Pending

Report Ref:

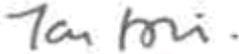
Status: FINAL

Client Contact Name: Paul Tebbitt

Client Company Name: Blaby District Council

Issued By: URS Corporation Ltd.  
 URS House  
 Horne Lane  
 Bedford MK40 1TS  
 United Kingdom  
 Tel: + 44 (0) 1234 349 641  
 Fax: + 44 (0) 1234 216 268  
 www.urscorp.eu

Document Production / Approval Record

Issue No: 1.1	Name	Signature	Date	Position
Prepared by	Martin Tate		10/01/12	Technical Director
Checked by	Mark Anslow		10/01/12	Technical Director
Approved by	Jon Forni		10/01/12	Associate Director

Document Revision Record

Issue No.	Date	Details of Revisions
1.0	04/01/12	Original Issue DRAFT report
1.1	10/01/12	FINAL issue incorporating BDC comments

**COPYRIGHT**

© This Report is the copyright of URS Corporation Limited. Any unauthorised reproduction or usage by any person other than the addressee is strictly prohibited.

## CONTENTS

Section	Page No
<b>1. INTRODUCTION.....</b>	<b>2</b>
1.1 Background .....	2
1.2 Requirements .....	2
1.3 Scope .....	3
<b>2. SITE DETAILS AND ASSUMPTIONS.....</b>	<b>3</b>
2.1 Site Details .....	3
2.2 Generation Assumptions .....	4
2.3 Distribution Assumptions.....	6
2.4 Network Assumptions .....	7
<b>3. TRAFFIC IMPACT .....</b>	<b>8</b>
3.1 Introduction.....	8
3.2 Traffic Generated by the Developments .....	8
3.3 Generated Plus Existing Traffic – 2011 .....	9
3.4 Generated Plus Forecast Traffic – 2031 .....	10
<b>4. CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>11</b>

## APPENDICES

### APPENDIX A: FIGURES AND TABLES

## **1. INTRODUCTION**

### **1.1 Background**

1.1.1 URS was appointed by Blaby District Council (BDC) in November 2011 to estimate the traffic impact of some 14 prospective development sites in the District – the Council's Preferred Development Strategy – to inform the review of the Council's Submission Core Strategy of 2009 and the preparation of the new Core Strategy, which will go on to become part of the Blaby District Local Plan.

1.1.2 The analysis used ODYSSEUS, a program developed by URS to estimate the generation and distribution of traffic associated with, in this case, the Blaby District Preferred Developments. To do this, it applies a 'gravity modelling' approach that distributes generated trips according to the size of, and travel time to, surrounding attractors – for example, employment centres that may attract commuting trips from new residential development, etc.

1.1.3 The traffic flows from ODYSSEUS were superimposed onto current network flows at selected count locations to estimate overall levels of flow and how they related to link capacities. This was done for two years: the 2011 base year, and a 2031 forecast year. Official DfT TEMPRO forecasts were also used to provide estimates of background traffic growth, i.e. growth not associated with the new developments, such as through traffic.

1.1.4 More information on ODYSSEUS and the assumptions therein is provided in Section 2. However, a fundamental principle of ODYSSEUS is that it is a strategic level process designed to provide an early and cost-effective overview of the broad traffic impacts of development, giving a consistent and informed insight on where to invest further effort and more detailed analysis. It is not intended to be a substitute for more detailed assignment modelling. Here, it was used to help BDC understand the cumulative impacts of housing and employment growth in Blaby District, particularly on areas in Leicester and the settlements around its edge. As and when developments come forward, more local impacts will be considered in greater detail as part of the development control process.

### **1.2 Requirements**

1.2.1 The aims of this study were to:

- Obtain recent traffic counts at selected LCC sites;
- Run ODYSSEUS with all the Preferred Developments and monitor development traffic flows at the LCC count sites;

- Scale up the 2011 LCC counts to 2031 background levels using TEMPRO and ODYSSEUS, avoiding 'double counting';
- Compare 2011 counts and 2031 forecast counts with Preferred Development flows and assess the total impact against capacity;
- Ditto for the contribution of the Lubbesthorpe SUE (hereafter also referred to as 'Lubbesthorpe') in isolation in 2011 and 2031;
- Identify significant development traffic increases and issues/mitigation and any 'showstoppers';
- Recommend further areas of work.

1.2.2 This report documents these elements of the work.

### **1.3 Scope**

1.3.1 Section 2 provides details of the assumptions used in the ODYSSEUS modelling and the approach to the study. Section 3 presents the results as absolute increases in traffic estimated from ODYSSEUS due to all the Preferred Developments and due to Lubbesthorpe only. It also describes the processing and factoring to 2031 of the LCC count site data, and its use in conjunction with ODYSSEUS to help assess whether there would be capacity issues. Section 4 presents conclusions and recommendations.

## **2. SITE DETAILS AND ASSUMPTIONS**

### **2.1 Site Details**

2.1.1 There were 14 notional developments allowed for in the Impact Assessment, of which two (Lubbesthorpe and Countesthorpe) were split into three and two sites respectively due to the layout and access arrangements in each case. There were therefore 17 individual sites in total. These are listed in Table 1 together with the assumed, approximate access points onto the existing local road network. Note that while the selection of specific access points was necessary to effectively run ODYSSEUS, these were indicative only and it was the broad impact on the surrounding network arising from quanta of development in specific settlements that was being assessed at this initial stage.

**Table 1: Prospective Development Sites**

ID	Site Name	Assumed Access	Easting	Northing
1	Glenfield*	B530/Ratby Lane	453269	305604
<b>2</b>	<b><i>Lubbesthorpe SUE:</i></b>			
2a	Lubbesthorpe_A	A563/Meridian Way	454050	302064
2b	Lubbesthorpe_B	A47	452331	302172
2c	Lubbesthorpe_C	Beggars Lane	452985	300493
<b>3</b>	Strategic Employment	Leicester Lane	454297	299810
<b>4</b>	Enderby	B4114	454955	299069
<b>5</b>	Narborough	Forest Road	453622	297816
<b>6</b>	Huncote	Narborough Road	452050	297198
<b>7</b>	Littlethorpe	Warwick Road	454741	296790
<b>8</b>	Blaby	Hospital Lane	457181	297276
<b>9</b>	<b><i>Countesthorpe:</i></b>			
9a	Countesthorpe_A	Winchester Road	457382	296123
9b	Countesthorpe_B	Leicester Road	458593	296077
<b>10</b>	Whetstone	A426 via Dog & Gun Lane	455974	295894
<b>11</b>	Cosby	Cambridge Road	455163	295568
<b>12</b>	Earl Shilton	A47 via Station Road	446100	296606
<b>13</b>	Stoney Stanton	The Fleet	449226	295298
<b>14</b>	Sapcote	B4069	448217	293451

\* Note that the Glenfield site already has planning permission (as at January 2012)

2.1.2 The locations of these sites were input to ODYSSEUS, along with the assumed connection points to the network.

## 2.2 Generation Assumptions

2.2.1 To ensure consistency with other development planning work carried out, Leicestershire County Council (LCC) supplied URS with three sets of trip rates derived from the TRICS database, each based on location. These rates are shown in Table 2. The study was based on AM peak hour traffic only (08:00-09:00), hence these were the rates supplied<sup>1</sup>.

<sup>1</sup> ODYSSEUS is able to estimate trip rates itself on the basis of land use categories; however when the trip rates are specified, as they were here, they can simply be entered into the program directly to generate the total hourly trips to and from the developments.

2.2.2 These rates were applied to the residential developments (per dwelling) and employment developments (per 100m<sup>2</sup> floorspace) depending on the location and mix of each site. Table 3 shows the rates used at each site as specified by BDC, and the resulting trips generated by direction and in total for the AM peak hour. Note that the trips may not sum exactly to the totals or sub-totals due to rounding.

**Table 2: AM Peak Trip Rates as Specified by LCC, by Development Location**

Location criterion	AM Peak hourly trip rates			
	Residential (per dwelling)		Employment (per 100m <sup>2</sup> )	
	Inbound	Outbound	Inbound	Outbound
Principal Urban Area (PUA)	0.110	0.390	1.190	0.080
Edge of PUA (EPUA)	0.110	0.427	1.190	0.080
Rural	0.153	0.554	1.190	0.080

Note: these rates apply to private motor vehicles only

**Table 3: Development Assumptions and AM Peak Hourly Trips Generated**

Site Name (trip rate location criterion)	Res. (Dwells.)	Emp.* (100m <sup>2</sup> )	Total vehicle trips (% of overall total)		
			Inbound	Outbound	Total
Glenfield (PUA)	250	1,200	1,456 (43)	194 (7)	1,649 (26)
<i>Lubbesthorpe (PUA):</i>	<i>4,500</i>	<i>0</i>	<i>495 (15)</i>	<i>1,755 (60)</i>	<i>2,250 (36)</i>
Lubbesthorpe_A	1,500	0	165 (5)	585 (20)	750 (12)
Lubbesthorpe_B	1,500	0	165 (5)	585 (20)	750 (12)
Lubbesthorpe_C	1,500	0	165 (5)	585 (20)	750 (12)
Strategic Emp. (PUA)	0	1,000	1,190 (35)	80 (3)	1,270 (20)
Enderby (EPUA)	50	0	6 (0)	21 (1)	27 (0)
Narborough (EPUA)	70	0	8 (0)	30 (1)	38 (1)
Huncote (Rural)	86	0	13 (0)	48 (2)	61 (1)
Littlethorpe (EPUA)	70	0	8 (0)	30 (1)	38 (1)
Blaby (EPUA)	300	0	33 (1)	128 (4)	161 (3)
<i>Countesthorpe (Rural):</i>	<i>420</i>	<i>0</i>	<i>64 (2)</i>	<i>233 (8)</i>	<i>297 (5)</i>
Countesthorpe_A	240	0	37 (1)	133 (5)	170 (3)
Countesthorpe_B	180	0	28 (1)	100 (3)	127 (2)
Whetstone (EPUA)	240	0	26 (1)	102 (3)	129 (2)
Cosby (EPUA)	100	0	11 (0)	43 (1)	54 (1)
Earl Shilton (Rural)	100	0	15 (0)	55 (2)	71 (1)
Stoney Stanton (Rural)	180	0	28 (1)	100 (3)	127 (2)
Sapcote (Rural)	200	0	31 (1)	111 (4)	141 (2)
<b>OVERALL TOTAL</b>	<b>6,566**</b>	<b>2,200</b>	<b>3,383</b>	<b>2,929</b>	<b>6,312</b>

\* Employment sites are 'net' areas \*\* The housing requirements reflect the distribution in the emerging Core Strategy and are net of completions since 2006

- 2.2.3 The 4,500 dwellings planned for Lubbethorpe were distributed evenly between the three access points (URS's assumption, agreed with BDC). The split of dwellings at the other multiple site, Countesthorpe, was specified by BDC. It is important to note that at the time of drafting this report, more detailed analysis of the transport implications associated with the Lubbethorpe proposal was being undertaken using the Leicester and Leicestershire Integrated Transport Model (LLITM).
- 2.2.4 Table 3 shows that in the AM peak hour, of the order of 6,500 trips would be added to the network as a result of these 14 developments. Of these, some 54% are inbound to the new developments and 46% outbound, which reflects the balance of proposed housing and employment in trip generation terms.
- 2.2.5 Lubbethorpe is by far the largest residential development, comprising nearly 70% of the total proposed new housing stock. As a result it contributes 2,250 trips: 36% of the total trips generated, and 60% of the total outbound trips in the AM peak.
- 2.2.6 The two employment sites, Glenfield and the Strategic Employment Area at Enderby, contribute 2,900 trips: 46% of the total trips generated, and 78% of the total inbound trips in the AM peak.
- 2.2.7 The remaining 1,150 trips, about 18% of the total, are associated with the other 11 residential sites, and are therefore mainly outbound in the AM peak. Of these, the highest percentage contribution is only 8% of the total outbound trips, associated with the Countesthorpe site.
- 2.2.8 Overall, 82% of the AM peak trips generated are therefore concentrated on three sites: mainly outbound from Lubbethorpe, and mainly inbound to Glenfield and the Strategic Employment Area.

### 2.3 Distribution Assumptions

- 2.3.1 ODYSSEUS estimates how these trips are distributed spatially via a 'gravity' function using ward-based residential and employment data from the 2001 census. The area over which the program considers trip generators and attractors is user-defined; in this case a maximum travel time isochrone of 40 minutes was used, representing a reasonable ceiling for a commute by car.
- 2.3.2 It is important to establish that the routes estimated between these generators and attractors are based on fixed link travel times that are empirically-derived attributes of the underlying network database; ODYSSEUS is not an iterative congested assignment model like SATURN that simulates and reacts to changes in travel times, and was never intended to be. Rather, it produces 'demand' routes, i.e. the routes drivers would be most likely to take on the basis of the selected criteria (Peak Travel Time, Free-Flow Travel Time or Distance) but

otherwise irrespective of effective supply capacity and irrespective of whether the increased flows due to the developments themselves would cause new or increased congestion at particular locations that resulted in further journey time delays. For this application, note that ODYSSEUS was set up to use measured Peak Travel Times, thereby including delays caused by any *current* congestion on the estimated routes, being the most appropriate time criterion for the morning peak period in question.

- 2.3.3 The advantage of this general approach is that it helps to show where the most likely pressure points would be, and their scale, rather than trying to predict how drivers might try to avoid them in practice, sometimes by using routes that are not appropriate for that purpose. The additional demand flow estimates can be superimposed on existing flow and capacity data to establish where future network issues would be most likely to arise. ODYSSEUS is a strategic tool that is used as a first sift of potential impacts to guide decisions on the need for more detailed modelling and assessment.
- 2.3.4 It was also assumed here that the new developments will interact with each other, so that for example the new residential developments were included along with existing residential areas as potential 'origins' for trips to the new employment areas, and vice versa. Clearly this was a key assumption as it would be unrealistic to ignore the 'self-containment' effect of these collective developments given their scale and proximity.

## 2.4 Network Assumptions

- 2.4.1 The ODYSSEUS runs assumed that there is a new bridge over the M1 connecting the Lubbesthorpe SUE to Meridian Way. No other network changes or improvements were included.
- 2.4.2 BDC's view was that, depending on the delivery of housing and employment at the sites in question, the Lubbesthorpe development may require a direct connection to the Strategic Employment Area at Enderby via a new bridge across the M69. This would be likely to relieve some of the traffic predicted for the B582 through Enderby, but may increase the traffic impact on Leicester Lane, the southern access point from the bridge. Such a link would remove some development traffic from the existing network by keeping it internal to the two development sites on the basis that Lubbesthorpe will provide an element of the workers for the Strategic Employment Area; but by the same token it may attract some through traffic by virtue of providing a new route. This bridge link was excluded from these tests, so these options would benefit from more detailed sensitivity tests.

### 3. TRAFFIC IMPACT

#### 3.1 Introduction

3.1.1 The traffic impacts of the developments were considered firstly in absolute terms as increases across the local road network, which will not change irrespective of whether 2011 or 2031 is considered, as the trip rates and development size were assumed to remain constant over time.

3.1.2 These additional traffic flows were then considered in addition to:

- Existing c. 2011 traffic counts;
- Forecast 2031 traffic flows (adjusting TEMPRO factors applied to the traffic counts to remove the growth already accounted for by ODYSSEUS and leave 'background' growth only, e.g. through trips).

3.1.3 By estimating approximate road capacities at selected locations, these figures helped to assess where issues may be expected when the total traffic is considered.

#### 3.2 Traffic Generated by the Developments

3.2.1 Figure 1 in Appendix A provides an overview of the two-way flow increases due to the developments in the form of colours, the intensity of which represents the level of development traffic flow in a series of bands. Figure 2 shows the corresponding flow increases for Lubbesthorpe only, being the largest residential development, using the same banding scale as that of Figure 1.

3.2.2 Figure 1 shows that in general there is a north-east/south-west trend to the trips generated by the developments. Leicester immediately to the north-east is the major origin/destination, with trips to/from the centre and the north-western suburbs. To the south-west, the M69 and B4114 provide good links to Hinckley and beyond as far as Coventry. In general, the highest increases in traffic are – as would be expected – local to the developments but there are increases of over 100vph (two-way) on the M1, M69, A46, A47, A5630, A5460, B582 and B4114. Although 100vph is an arbitrary value and its impact depends entirely on the road standard and existing flow, it is a level of increase that may start to become significant for say junction performance on smaller local roads.

3.2.3 Tables 1 and 2 show the corresponding increases in traffic in more detail, by direction at the LCC-supplied count sites. The development flows are colour-

coded: green is the range 0-100vph, amber is 100-500vph, and red is above 500vph, which correspond to bands 1 plus 2, 3 plus 4 and 5 plus 6 in the Figures. These figures are from an accompanying spreadsheet that was set up to look at the effects of any combination of the developments, as supplied to BDC earlier<sup>2</sup>; the spreadsheet's 'conditional formatting' precludes any more than three such intervals, hence the grouping and lack of one-to-one correspondence.

- 3.2.4 Table 1 shows that the highest increases are on the B4114 and Leicester Lane with two-way increases of 1,700 and 1,200vph respectively. In the latter case this is mainly due to the presence of the Strategic Employment Area and the flow is almost all south-westbound towards it. M1 Junction 21 and the junctions immediately to the east of it are also subject to significant flow increases. There are northbound increases of around 1,000vph at M1 Junction 21A.
- 3.2.5 Table 2 shows lower and less concentrated impacts relating to Lubbethorpe on its own. There are no individual sites with flow increases over 500vph, but there are significant increases along the B582 and A47 that correspond to two of the access points for the development.

### 3.3 Generated Plus Existing Traffic – 2011

- 3.3.1 Tables 1 and 2 also show how the increases compare with the recent flows at the LCC count sites (where count information was provided). These counts were used as sent, and ranged from 2007 to 2011. For the purposes of this strategic level exercise, it was not considered necessary to re-base all earlier counts to 2011 as the percentage adjustments were very small.
- 3.3.2 Generally the highest percentage increases in flows on the monitored links coincide with the highest absolute increases noted above. Considering all developments, noteworthy percentage increases from Table 1 include Leicester Lane (more than doubled south-westbound) and the A46/M1 link road. In the former case the ODYSSEUS output suggests the flow increases from some 400vph south-westbound to 1,600vph. For all-purpose roads, 1,600vph per lane is the flow at which design standards<sup>3</sup> dictate that a dual carriageway is needed.

---

<sup>2</sup> This is 'Blaby\_ODYSSEUS\_Links\_Output.v6.xls', which provides the traffic flow increases for any combination of the 14 developments (selected by the user) and from which Tables 1 – 4 below were derived.

<sup>3</sup> TD 22/05

### 3.4 Generated Plus Forecast Traffic – 2031

- 3.4.1 To estimate the overall future traffic levels in 2031, it was necessary firstly to factor the 2011 counts to 2031, and secondly to add the development trips, on the assumption that these stay constant through time. However, DfT's official forecasts accessed via TEMPRO already take account of new development and a means of avoiding double counting was needed in the first step. This involved removing the influence of the new developments from the TEMPRO growth factors, leaving just 'background' traffic growth (for example, through trips from Hinckley to Leicester that are not affected by the presence or otherwise of new development in Blaby District).
- 3.4.2 To do this, Leicestershire was first chosen in preference to the East Midlands as the most appropriate area over which to obtain growth factors for background traffic through Blaby District. Leicestershire was considered small enough to retain the trip characteristics of the local area, but big enough to include many of the through trips via Blaby District. The planning data in TEMPRO for this area was then adjusted to remove 2011-2031 Blaby District growth<sup>4</sup>, and new factors for origin and destination Car Driver AM peak period traffic growth were re-calculated for Leicestershire. The overall factor (average of origin and destination) was 1.12, i.e. 12%.
- 3.4.3 This was a reasonable approximation for background and through traffic growth that was in keeping with the strategic nature of the ODYSSEUS results, but it is still worth noting the limitations of this method:
- The planning adjustment is assumed to apply over the whole of Leicestershire rather than just in Blaby District;
  - The Preferred Development Strategy exceeds the TEMPRO assumptions, therefore the planning data was reduced to reflect zero growth in Blaby rather than a decrease (it is not clear to what extent the DfT's new official TEMPRO 6.2 dataset forecasts reflect the original RSS growth);
  - A little accuracy is lost as no account can be taken of the actual origins and destinations of through trips (and hence of the actual trip end growth to which they would be subject if outside Leicestershire – e.g. M1 through trips).

---

<sup>4</sup> TEMPRO works with households and jobs. Households were assumed to be compatible with dwellings. Jobs were estimated assuming a blanket area of 30m<sup>2</sup> per worker to convert from floorspace.

- 3.4.4 In view of this uncertainty, a value of 10% background growth was used as a slightly more conservative estimate. Note that an alternative considered was to scale the counts using the full unadjusted TEMPRO factor, and then subtract the ODYSSEUS flows at each count site to estimate 2031 background traffic on a site-specific, and hence more accurate, basis. The problem is that while this works well for the more major roads, it can lead to apparent reductions in traffic on local roads near the developments, as they are dominated by development traffic. It is clearly not realistic to assume that flows anywhere would decrease substantially through time even without the Blaby District developments.
- 3.4.5 Tables 3 and 4 present the resulting 2031 results in the same format as that of Tables 1 and 2. As would be expected with a 'blanket' increase, the results reflect those of 2011 but to a higher degree.

## 4. CONCLUSIONS AND RECOMMENDATIONS

- 4.1.1 This assessment has highlighted the main traffic increases that may be expected from BDC's Preferred Development Strategy. It suggests that the main increases are significant, with several local roads (of those monitored) experiencing increases of between 500 and 1,000 vehicles per hour in the morning peak, often with a strong directional bias.
- 4.1.2 Overall, 82% of the AM peak trips generated were due to three sites: Lubbesthorpe (36%, principally outbound trips), and Glenfield and the Strategic Employment Area near Enderby (26% and 20% respectively, principally inbound). The remaining 18% of trips were due to the other 11 sites combined, which were therefore very small in relative terms and did not significantly affect the trip pattern of the major generators.
- 4.1.3 When considering all developments, the main strategic traffic flow increases were orientated around the north-west of Leicester, and to the south-west towards Coventry on the main M69, B4114 and A47 radials. The pattern for Lubbesthorpe alone was very similar but with lower flows, reflecting the major contribution it makes to the development trips as a whole.
- 4.1.4 In most cases the link capacities should be able to cope with these increases, although at a few specific locations, the flows predicted by ODYSSEUS plus the existing flows indicated that the design capacity of a single carriageway road could be exceeded. It is thus recommended that more detailed analysis of these locations and ways to mitigate the predicted impacts be investigated using LLITM. However the junctions are less likely to be able to cater for the predicted increases, particularly where the development flows are concentrated such as the local roads around the Lubbesthorpe development and Strategic Employment Area near Enderby. It is therefore also recommended that impacts on the

junctions and potential mitigation options are explored in more detail using LLITM and capacity assessment modelling tools as appropriate.

4.1.5 As noted above, ODYSSEUS provides a fast and consistent means of looking at the 'first order' strategic traffic impacts, but takes no account of link or junction capacities other than any time delays implicit in the underlying network travel times. Recommendations to take forward the findings from ODYSSEUS for more detailed analysis would therefore include:

- Model individual junctions using the increased flows from ODYSSEUS to assess their scope for accommodating it (such as the most heavily-loaded ones to the east of M1 Junction 21);
- For a more comprehensive test, run the results through a congested assignment model to take the analysis to the next level, by making allowance for the increased flows in full assignments (the ODYSSEUS information could be used to update the future matrices accordingly);
- Undertake sensitivity tests for the effect of a new bridge linking the Lubbethorpe residential development with the Strategic Employment Area at Enderby.

4.1.6 In this respect ODYSSEUS provides a useful pointer to possible future issues and its use here has identified key areas where further analysis would be helpful.

# Appendix A: Figures and Tables

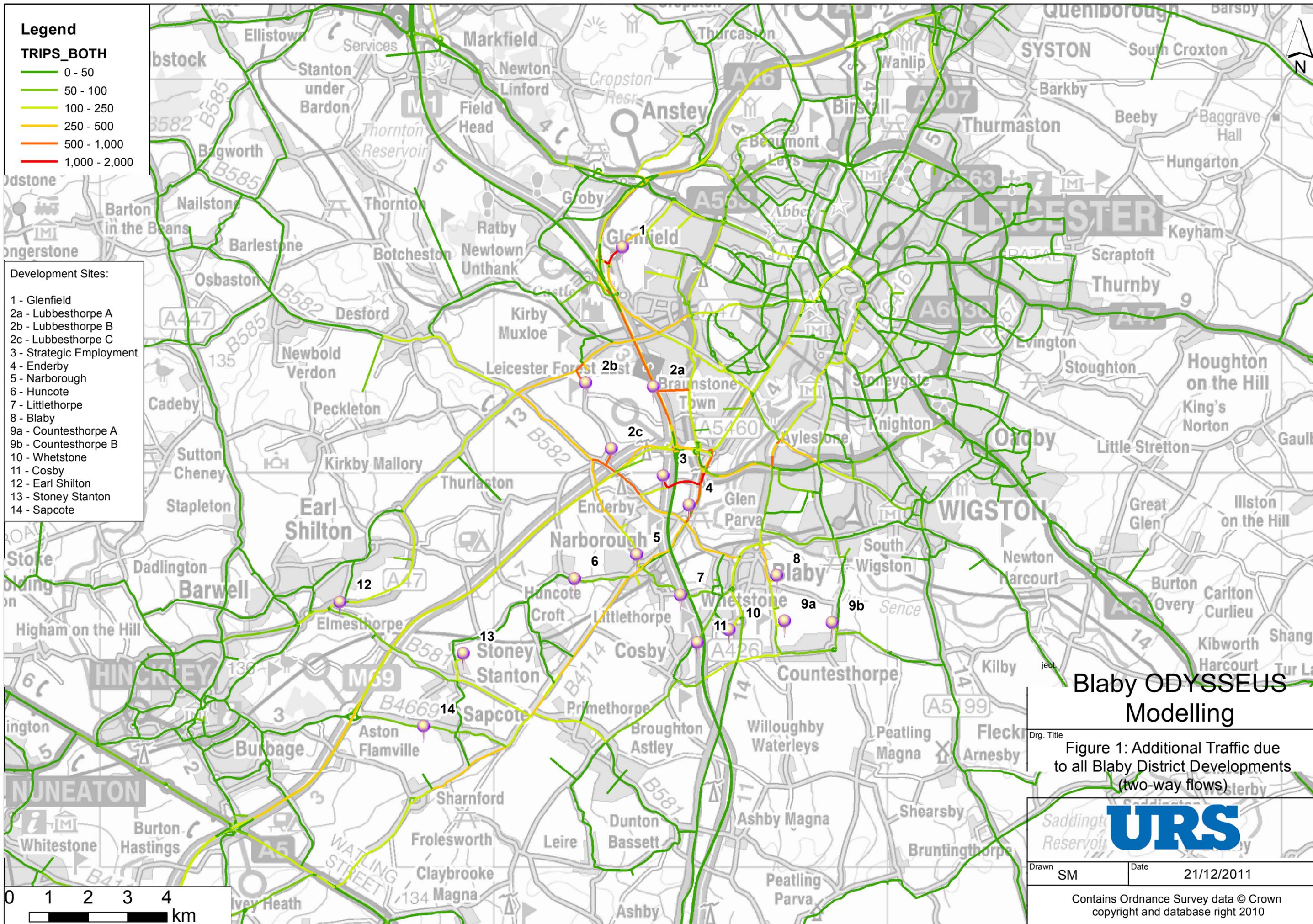
**Legend**

**TRIPS\_BOTH**

- 0 - 50
- 50 - 100
- 100 - 250
- 250 - 500
- 500 - 1,000
- 1,000 - 2,000

**Development Sites:**

- 1 - Glenfield
- 2a - Lubbesthorpe A
- 2b - Lubbesthorpe B
- 2c - Lubbesthorpe C
- 3 - Strategic Employment
- 4 - Enderby
- 5 - Narborough
- 6 - Huncote
- 7 - Littlethorpe
- 8 - Blaby
- 9a - Countesthorpe A
- 9b - Countesthorpe B
- 10 - Whetstone
- 11 - Cosby
- 12 - Earl Shilton
- 13 - Stoney Stanton
- 14 - Sapcote



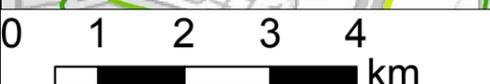
# Blaby ODYSSEUS Modelling

Drg. Title  
Figure 1: Additional Traffic due to all Blaby District Developments (two-way flows)



Drawn SM Date 21/12/2011

Contains Ordnance Survey data © Crown copyright and database right 2010



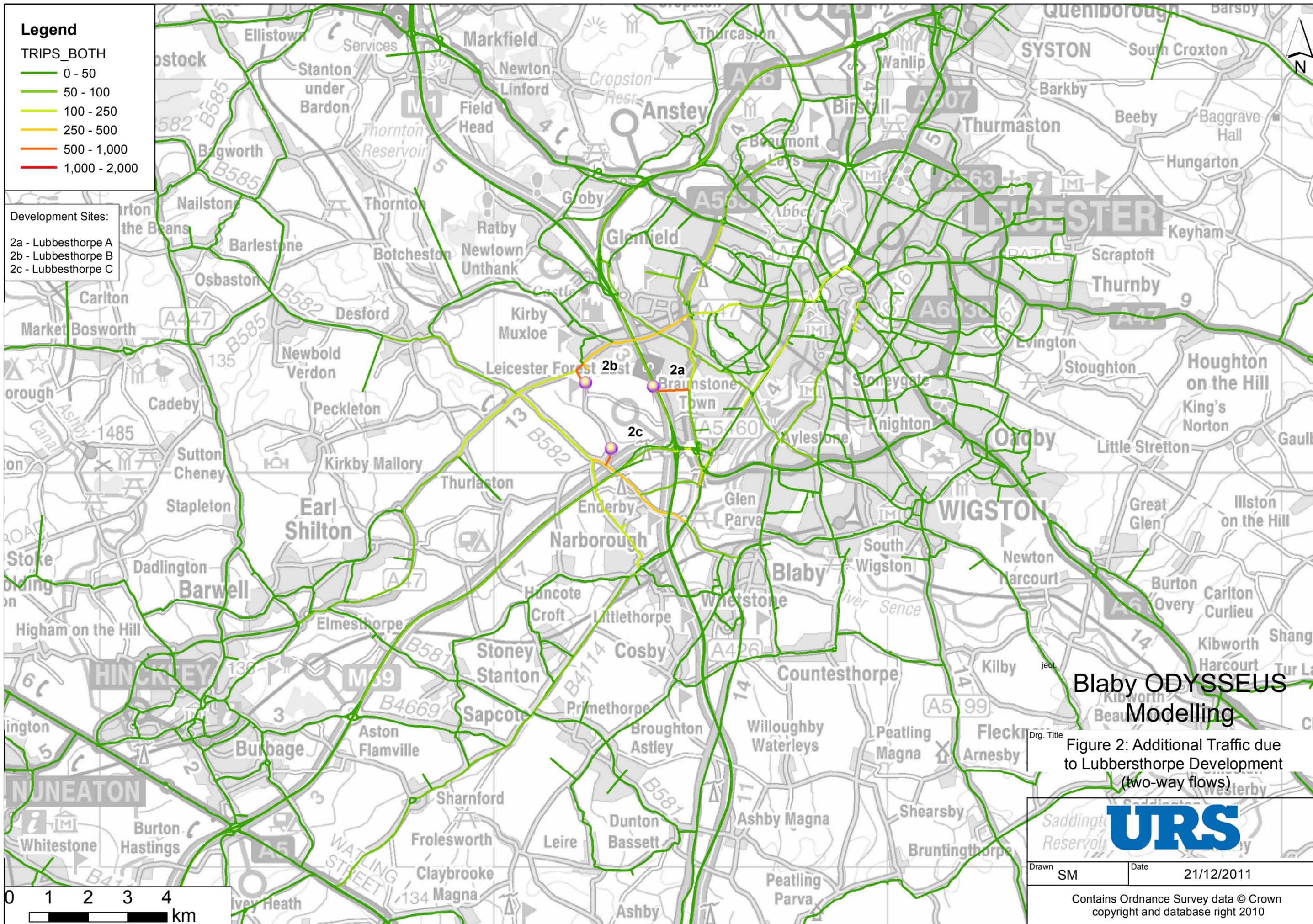
**Legend**

TRIPS\_BOTH

- 0 - 50
- 50 - 100
- 100 - 250
- 250 - 500
- 500 - 1,000
- 1,000 - 2,000

Development Sites:

- 2a - Lubbesthorpe A
- 2b - Lubbesthorpe B
- 2c - Lubbesthorpe C



### Blaby ODYSSEUS Modelling

Figure 2: Additional Traffic due to Lubbesthorpe Development (two-way flows)



Drawn SM Date 21/12/2011

Contains Ordnance Survey data © Crown copyright and database right 2010

Table 1: Key Link Flows and Increases due to All New Developments (2011, AM Peak Vehicles/Hour)

KEY LINKS		BASE LINK FLOWS (veh/hr)					ALL DEVELOPMENT FLOWS (veh/hr)			TOTAL LINK FLOWS (veh/hr)			PERCENTAGE INCREASE		
Route	Section	OSGR E	OSGR N	N/E bnd	S/W bnd	COMB.	N/E bnd	S/W bnd	COMB.	N/E bnd	S/W bnd	COMB.	N/E bnd	S/W bnd	COMB.
M1	J21-21A	453946	302516	-	-	-	583	330	913	583	330	913	-	-	-
M69	BETWEEN J1 and J2	444995	291852	-	-	-	330	144	474	330	144	474	-	-	-
M69	BETWEEN J2 and M1 J21	448571	296543	-	-	-	382	156	538	382	156	538	-	-	-
A46 WESTERN BYPASS	Between M1 J21a and A50	453105	306598	-	-	-	217	667	884	217	667	884	-	-	-
A46 WESTERN BYPASS	Between A50 and A5630	454719	307635	-	-	-	193	373	566	193	373	566	-	-	-
A46 WESTERN BYPASS	Between A5630 and A6	456735	310044	-	-	-	117	328	445	117	328	445	-	-	-
A46/M1 J21A LINK ROAD	A46 - B5380/KIRBY RD	452931	305282	910	819	1,729	955	216	1,171	1,865	1,035	2,900	105%	26%	68%
A47 HINCKLEY ROAD	B582 DESFORD RD/LEICESTER LN - BEGGAR'S LN	451816	302482	562	580	1,142	124	179	303	686	759	1,445	22%	31%	27%
A47 HINCKLEY ROAD	BEGGAR'S LN - KIRBY LN	452327	302817	632	793	1,425	387	106	493	1,019	899	1,918	61%	13%	35%
A47 HINCKLEY ROAD	KIRBY LN - RATBY LN	454185	303552	1,088	827	1,915	387	107	494	1,475	934	2,409	36%	13%	26%
A47 HINCKLEY ROAD	RATBY LN - A563	454185	303552	1,183	659	1,842	205	138	343	1,388	797	2,185	17%	21%	19%
A50 GROBY ROAD	STATION RD/GYNSILL LN - A563 NEW PARKS WAY	455248	306496	1,060	1,542	2,602	36	101	137	1,096	1,643	2,739	3%	7%	5%
A50 MARKFIELD ROAD/LEICESTER ROAD	LEICESTER ROAD, A46 - NEWTOWN LINFORD LN	453857	307406	2,132	1,265	3,397	21	279	300	2,153	1,544	3,697	1%	22%	9%
A50 MARKFIELD ROAD/LEICESTER ROAD	MARKFIELD ROAD, NEWTOWN LINFORD LN - WALLACE DR	451377	308118	1,879	1,210	3,089	97	21	118	1,976	1,231	3,207	5%	2%	4%
A426 LUTTERWORTH ROAD BETWEEN SOAR VALLEY WAY AND WIGSTON LANE	North of A563, Nth	457062	300228	783	564	1,347	133	399	532	916	963	1,879	17%	71%	39%
A426 LUTTERWORTH ROAD BETWEEN SOAR VALLEY WAY AND WIGSTON LANE	North of Monsell Drive, Nthbnd	457066	300426	695	589	1,284	0	0	0	695	589	1,284	0%	0%	0%
A426 LUTTERWORTH ROAD BETWEEN SOAR VALLEY WAY AND WIGSTON LANE	Wigston Lane Junction,	457300	300855	959	635	1,594	180	422	602	1,139	1,057	2,196	19%	66%	38%
A563 LUBBESTHORPE WAY/HAND AVENUE	MERIDIAN WAY - A5460 E'BOUND SLIP	455098	300984	1,273	1,537	2,810	144	182	326	1,417	1,719	3,136	11%	12%	12%
A563 LUBBESTHORPE WAY/HAND AVENUE	OSIER'S BRIDGE	455129	300780	1,501	1,515	3,016	0	0	0	1,501	1,515	3,016	0%	0%	0%
A563 LUBBESTHORPE WAY/HAND AVENUE	A5460 W'BOUND SLIP - NARBOROUGH RD	455339	300098	2,779	1,523	4,302	424	0	424	3,203	1,523	4,726	15%	0%	10%
A563 SOAR VALLEY WAY	B4114 - A426	455805	299915	1,608	2,054	3,662	76	426	502	1,684	2,480	4,164	5%	21%	14%
A5460 J21 APPROACH ROAD	M1 J21 - A563 JN	454620	300590	3,522	3,170	6,692	465	478	943	3,987	3,648	7,635	13%	15%	14%
A5460 J21 APPROACH ROAD	A563 JN - NARBOROUGH RD S	455510	300549	1,737	1,406	3,143	599	152	751	2,336	1,558	3,894	34%	11%	24%
B582 A47 - A426	A47 - FOREST RD	452503	300333	389	673	1,062	160	202	362	549	875	1,424	41%	30%	34%
B582 A47 - A426	FOREST RD - BEGGAR'S LN	452929	300133	354	839	1,193	275	239	514	629	1,078	1,707	78%	28%	43%
B582 A47 - A426	BEGGAR'S LN - CONERY LN	452929	300133	811	757	1,568	163	520	683	974	1,277	2,251	20%	69%	44%
B582 A47 - A426	CONERY LN - HIGH ST	453714	299445	961	620	1,581	0	0	0	961	620	1,581	0%	0%	0%
B582 A47 - A426	HIGH ST - CO-OPERATION ST	453714	299445	893	347	1,240	67	392	459	960	739	1,699	8%	113%	37%
B582 A47 - A426	CO-OPERATION ST - B4114	454181	299026	683	479	1,162	0	0	0	683	479	1,162	0%	0%	0%
B582 A47 - A426	B4114 - VICTORIA RD	455254	298144	1,000	841	1,841	322	125	447	1,322	966	2,288	32%	15%	24%
B582 A47 - A426	VICTORIA RD - A426	455940	297894	852	644	1,496	288	115	403	1,140	759	1,899	34%	18%	27%
B4114	BRAUNSTONE LN - A5460	455510	300549	1,227	1,413	2,640	239	193	432	1,466	1,606	3,072	19%	14%	16%
B4114	A5460 - A563	455510	300549	1,183	1,274	2,457	296	696	992	1,479	1,970	3,449	25%	55%	40%
B4114	A563 - LEICESTER LN	455339	300098	2,440	2,245	4,685	673	999	1,672	3,113	3,244	6,357	28%	44%	36%
B4114	LEICESTER LN - B582	455017	298966	2,115	1,563	3,678	815	78	893	2,930	1,641	4,571	39%	5%	24%
B4114	B582 - LEICESTER RD	454884	298718	1,702	1,053	2,755	258	44	302	1,960	1,097	3,057	15%	4%	11%
B4114	LEICESTER RD - DESFORD RD	453737	297566	1,797	626	2,423	258	44	302	2,055	670	2,725	14%	7%	12%
B4114	DESFORD RD - COVENTRY RD	453590	297446	1,364	656	2,020	157	265	422	1,521	921	2,442	12%	40%	21%
B4114	COVENTRY RD - HUNCOTE RD	453590	297446	1,425	677	2,102	199	107	306	1,624	784	2,408	14%	16%	15%
B5380 RATBY LANE	KIRBY RD - A47	454185	303552	599	811	1,410	339	42	381	938	853	1,791	57%	5%	27%
BEGGAR'S LANE	A47 - FOREST HOUSE LN	452228	302712	373	169	542	119	203	322	492	372	864	32%	120%	59%
BRAUNSTONE LANE	A47 - EVELYN RD	454332	303477	348	364	712	51	136	187	399	500	899	15%	37%	26%
BRAUNSTONE LANE	EVELYN RD - BRAUNSTONE AVE/SHAKESPEARE DR	455360	302824	367	321	688	0	0	0	367	321	688	0%	0%	0%
LEICESTER LANE	B582 - B4114	454278	299588	706	444	1,150	58	1,137	1,195	764	1,581	2,345	8%	256%	104%
LUBBESTHORPE WAY BETWEEN A47 AND MERIDIAN WAY JUNCTION	By Southbnd exit to Meridian Leisure Park	455000	302300	988	1,395	2,383	237	158	395	1,225	1,553	2,778	24%	11%	17%
MAIN STREET/KIRBY ROAD	THE SQUARE, GLENFIELD - A46/M1 J21A LINK ROAD	452931	305282	495	239	734	77	249	326	572	488	1,060	16%	104%	44%
MAIN STREET/KIRBY ROAD	A46/M1 J21A LINK ROAD - RATBY LN	452931	305282	1,093	928	2,021	398	48	446	1,491	976	2,467	36%	5%	22%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	Btw Mortimer Way & New Fields St, Nthbnd	456743	302276	1,316	-	1,316	182	0	182	1,498	0	1,498	14%	-	14%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	Btw Mortimer Way & New Fields St, Sthbnd	456745	302254	-	1,311	1,311	0	103	103	0	1,414	1,414	-	8%	8%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	Btw New Fields St & Somerville Road	456749	302268	1,622	1,363	2,985	0	0	0	1,622	1,363	2,985	0%	0%	0%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	Nthbnd btw Harlaxton St & Haddenham Road	457100	302800	1,090	776	1,866	182	103	285	1,272	879	2,151	17%	13%	15%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	North of Upperton Road	457547	303488	639	474	1,113	135	39	174	774	513	1,287	21%	8%	16%
STATION ROAD	A50 - THE SQUARE, GLENFIELD	454564	306925	602	571	1,173	34	152	186	636	723	1,359	6%	27%	16%
WIGSTON LANE	Wigston Lane Westbound from Pork Pie Roundabout	458198	300275	-	289	289	89	163	252	89	452	541	-	56%	87%

Green: 0-100vph increase  
 Amber: 100-500vph increase  
 Red: 500-2,000vph increase

Table 2: Key Link Flows and Increases due to Lubbersthorpe Only (2011, AM Peak Vehicles/Hour)

Route	KEY LINKS		BASE LINK FLOWS (veh/hr)			LUBBERSTHORPE FLOWS (veh/hr)			TOTAL LINK FLOWS (veh/hr)			PERCENTAGE INCREASE			
	Section	OSGR E	OSGR N	N/E bnd	S/W bnd	COMB.	N/E bnd	S/W bnd	COMB.	N/E bnd	S/W bnd	COMB.	N/E bnd	S/W bnd	COMB.
M1	J21-21A	453946	302516	-	-	-	67	42	109	67	42	109	-	-	-
M69	BETWEEN J1 and J2	444995	291852	-	-	-	26	88	114	26	88	114	-	-	-
M69	BETWEEN J2 and M1 J21	448571	296543	-	-	-	26	88	114	26	88	114	-	-	-
A46 WESTERN BYPASS	Between M1 J21a and A50	453105	306598	-	-	-	91	28	119	91	28	119	-	-	-
A46 WESTERN BYPASS	Between A50 and A5630	454719	307635	-	-	-	82	17	99	82	17	99	-	-	-
A46 WESTERN BYPASS	Between A5630 and A6	456735	310044	-	-	-	61	17	78	61	17	78	-	-	-
A46/M1 J21A LINK ROAD	A46 - B5380/KIRBY RD	452931	305282	910	819	1,729	19	70	89	929	889	1,818	2%	9%	5%
A47 HINCKLEY ROAD	B582 DESFORD RD/LEICESTER LN - BEGGAR'S LN	451816	302482	562	580	1,142	86	140	226	648	720	1,368	15%	24%	20%
A47 HINCKLEY ROAD	BEGGAR'S LN - KIRBY LN	452327	302817	632	793	1,425	315	98	413	947	891	1,838	50%	12%	29%
A47 HINCKLEY ROAD	KIRBY LN - RATBY LN	454185	303552	1,088	827	1,915	315	99	414	1,403	926	2,329	29%	12%	22%
A47 HINCKLEY ROAD	RATBY LN - A563	454185	303552	1,183	659	1,842	193	64	257	1,376	723	2,099	16%	10%	14%
A50 GROBY ROAD	STATION RD/GYNSILL LN - A563 NEW PARKS WAY	455248	306496	1,060	1,542	2,602	0	11	11	1,060	1,553	2,613	0%	1%	0%
A50 MARKFIELD ROAD/LEICESTER ROAD	LEICESTER ROAD, A46 - NEWTOWN LINFORD LN	453857	307406	2,132	1,265	3,397	9	7	16	2,141	1,272	3,413	0%	1%	0%
A50 MARKFIELD ROAD/LEICESTER ROAD	MARKFIELD ROAD, NEWTOWN LINFORD LN - WALLACE DR	451377	308118	1,879	1,210	3,089	7	9	16	1,886	1,219	3,105	0%	1%	1%
A426 LUTTERWORTH ROAD BETWEEN SOAR VALLEY WAY AND WIGSTON LANE	North of A563, Nth	457062	300228	783	564	1,347	44	48	92	827	612	1,439	6%	9%	7%
A426 LUTTERWORTH ROAD BETWEEN SOAR VALLEY WAY AND WIGSTON LANE	North of Monsell Drive, Nthbnd	457066	300426	695	589	1,284	0	0	0	695	589	1,284	0%	0%	0%
A426 LUTTERWORTH ROAD BETWEEN SOAR VALLEY WAY AND WIGSTON LANE	Wigston Lane Junction,	457300	300855	959	635	1,594	75	68	143	1,034	703	1,737	8%	11%	9%
A563 LUBBESTHORPE WAY/HAND AVENUE	MERIDIAN WAY - A5460 E'BOUND SLIP	455098	300984	1,273	1,537	2,810	84	80	164	1,357	1,617	2,974	7%	5%	6%
A563 LUBBESTHORPE WAY/HAND AVENUE	OSIER'S BRIDGE	455129	300780	1,501	1,515	3,016	0	0	0	1,501	1,515	3,016	0%	0%	0%
A563 LUBBESTHORPE WAY/HAND AVENUE	A5460 W'BOUND SLIP - NARBOROUGH RD	455339	300098	2,779	1,523	4,302	157	0	157	2,936	1,523	4,459	6%	0%	4%
A563 SOAR VALLEY WAY	B4114 - A426	455805	299915	1,608	2,054	3,662	48	50	98	1,656	2,104	3,760	3%	2%	3%
A5460 J21 APPROACH ROAD	M1 J21 - A563 JN	454620	300590	3,522	3,170	6,692	48	142	190	3,570	3,312	6,882	1%	4%	3%
A5460 J21 APPROACH ROAD	A563 JN - NARBOROUGH RD S	455510	300549	1,737	1,406	3,143	92	33	125	1,829	1,439	3,268	5%	2%	4%
B582 A47 - A426	A47 - FOREST RD	452503	300333	389	673	1,062	136	91	227	525	764	1,289	35%	14%	21%
B582 A47 - A426	FOREST RD - BEGGAR'S LN	452929	300133	354	839	1,193	257	89	346	611	928	1,539	73%	11%	29%
B582 A47 - A426	BEGGAR'S LN - CONERY LN	452929	300133	811	757	1,568	96	348	444	907	1,105	2,012	12%	46%	28%
B582 A47 - A426	CONERY LN - HIGH ST	453714	299445	961	620	1,581	0	0	0	961	620	1,581	0%	0%	0%
B582 A47 - A426	HIGH ST - CO-OPERATION ST	453714	299445	893	347	1,240	14	348	362	907	695	1,602	2%	100%	29%
B582 A47 - A426	CO-OPERATION ST - B4114	454181	299026	683	479	1,162	0	0	0	683	479	1,162	0%	0%	0%
B582 A47 - A426	B4114 - VICTORIA RD	455254	298144	1,000	841	1,841	16	62	78	1,016	903	1,919	2%	7%	4%
B582 A47 - A426	VICTORIA RD - A426	455940	297894	852	644	1,496	14	54	68	866	698	1,564	2%	8%	5%
B4114	BRAUNSTONE LN - A5460	455510	300549	1,227	1,413	2,640	118	12	130	1,345	1,425	2,770	10%	1%	5%
B4114	A5460 - A563	455510	300549	1,183	1,274	2,457	101	54	155	1,284	1,328	2,612	9%	4%	6%
B4114	A563 - LEICESTER LN	455339	300098	2,440	2,245	4,685	295	92	387	2,735	2,337	5,072	12%	4%	8%
B4114	LEICESTER LN - B582	455017	298966	2,115	1,563	3,678	295	10	305	2,410	1,573	3,983	14%	1%	8%
B4114	B582 - LEICESTER RD	454884	298718	1,702	1,053	2,755	2	4	6	1,704	1,057	2,761	0%	0%	0%
B4114	LEICESTER RD - DESFORD RD	453737	297566	1,797	626	2,423	2	4	6	1,799	630	2,429	0%	1%	0%
B4114	DESFORD RD - COVENTRY RD	453590	297446	1,364	656	2,020	81	23	104	1,445	679	2,124	6%	4%	5%
B4114	COVENTRY RD - HUNCOTE RD	453590	297446	1,425	677	2,102	15	53	68	1,440	730	2,170	1%	8%	3%
B5380 RATBY LANE	KIRBY RD - A47	454185	303552	599	811	1,410	91	23	114	690	834	1,524	15%	3%	8%
BEGGAR'S LANE	A47 - FOREST HOUSE LN	452228	302712	373	169	542	54	197	251	427	366	793	14%	117%	46%
BRAUNSTONE LANE	A47 - EVELYN RD	454332	303477	348	364	712	44	26	70	392	390	782	13%	7%	10%
BRAUNSTONE LANE	EVELYN RD - BRAUNSTONE AVE/SHAKESPEARE DR	455360	302824	367	321	688	0	0	0	367	321	688	0%	0%	0%
LEICESTER LANE	B582 - B4114	454278	299588	706	444	1,150	0	83	83	706	527	1,233	0%	19%	7%
LUBBESTHORPE WAY BETWEEN A47 AND MERIDIAN WAY JUNCTION	By Southbnd exit to Meridian Leisure Park	455000	302300	988	1,395	2,383	151	84	235	1,139	1,479	2,618	15%	6%	10%
MAIN STREET/KIRBY ROAD	THE SQUARE, GLENFIELD - A46/M1 J21A LINK ROAD	452931	305282	495	239	734	25	7	32	520	246	766	5%	3%	4%
MAIN STREET/KIRBY ROAD	A46/M1 J21A LINK ROAD - RATBY LN	452931	305282	1,093	928	2,021	91	23	114	1,184	951	2,135	8%	2%	6%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	Btw Mortimer Way & New Fields St, Nthbnd	456743	302276	1,316	-	1,316	100	0	100	1,416	0	1,416	8%	-	8%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	Btw Mortimer Way & New Fields St, Sthbnd	456745	302254	-	1,311	1,311	0	10	10	0	1,321	1,321	-	1%	1%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	Btw New Fields St & Somerville Road	456749	302268	1,622	1,363	2,985	0	0	0	1,622	1,363	2,985	0%	0%	0%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	Nthbnd btw Harlaxton St & Haddenham Road	457100	302800	1,090	776	1,866	100	10	110	1,190	786	1,976	9%	1%	6%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	North of Upperton Road	457547	303488	639	474	1,113	74	2	76	713	476	1,189	12%	0%	7%
STATION ROAD	A50 - THE SQUARE, GLENFIELD	454564	306925	602	571	1,173	0	0	0	602	571	1,173	0%	0%	0%
WIGSTON LANE	Wigston Lane Westbound from Pork Pie Roundabout	458198	300275	-	289	289	45	14	59	45	303	348	-	5%	20%

Green: 0-100vph increase  
 Amber: 100-500vph increase  
 Red: 500-2,000vph increase

Table 3: Key Link Flows and Increases due to All New Developments (2031, AM Peak Vehicles/Hour)

Route	KEY LINKS		BASE LINK FLOWS (veh/hr)			ALL DEVELOPMENT FLOWS (veh/hr)			TOTAL LINK FLOWS (veh/hr)			PERCENTAGE INCREASE				
	Section		OSGR E	OSGR N	N/E bnd	S/W bnd	COMB.	N/E bnd	S/W bnd	COMB.	N/E bnd	S/W bnd	COMB.	N/E bnd	S/W bnd	COMB.
M1	J21-21A		453946	302516	-	-	-	583	330	913	583	330	913	-	-	-
M69	BETWEEN J1 and J2		444995	291852	-	-	-	330	144	474	330	144	474	-	-	-
M69	BETWEEN J2 and M1 J21		448571	296543	-	-	-	382	156	538	382	156	538	-	-	-
A46 WESTERN BYPASS	Between M1 J21a and A50		453105	306598	-	-	-	217	667	884	217	667	884	-	-	-
A46 WESTERN BYPASS	Between A50 and A5630		454719	307635	-	-	-	193	373	566	193	373	566	-	-	-
A46 WESTERN BYPASS	Between A5630 and A6		456735	310044	-	-	-	117	328	445	117	328	445	-	-	-
A46/M1 J21A LINK ROAD	A46 - B5380/KIRBY RD		452931	305282	1,003	902	1,905	955	216	1,171	1,865	1,035	2,900	86%	15%	52%
A47 HINCKLEY ROAD	B582 DESFORD RD/LEICESTER LN - BEGGAR'S LN		451816	302482	619	639	1,258	124	179	303	686	759	1,445	11%	19%	15%
A47 HINCKLEY ROAD	BEGGAR'S LN - KIRBY LN		452327	302817	696	874	1,570	387	106	493	1,019	899	1,918	46%	3%	22%
A47 HINCKLEY ROAD	KIRBY LN - RATBY LN		454185	303552	1,199	911	2,110	387	107	494	1,475	934	2,409	23%	3%	14%
A47 HINCKLEY ROAD	RATBY LN - A563		454185	303552	1,303	726	2,029	205	138	343	1,388	797	2,185	6%	10%	8%
A50 GROBY ROAD	STATION RD/GYNSILL LN - A563 NEW PARKS WAY		455248	306496	1,168	1,699	2,867	36	101	137	1,096	1,643	2,739	-6%	-3%	-4%
A50 MARKFIELD ROAD/LEICESTER ROAD	LEICESTER ROAD, A46 - NEWTOWN LINFORD LN		453857	307406	2,349	1,394	3,742	21	279	300	2,153	1,544	3,697	-8%	11%	-1%
A50 MARKFIELD ROAD/LEICESTER ROAD	MARKFIELD ROAD, NEWTOWN LINFORD LN - WALLACE DR		451377	308118	2,070	1,333	3,403	97	21	118	1,976	1,231	3,207	-5%	-8%	-6%
A426 LUTTERWORTH ROAD BETWEEN SOAR VALLEY WAY AND WIGSTON LANE	North of A563, Nth		457062	300228	863	621	1,484	133	399	532	916	963	1,879	6%	55%	27%
A426 LUTTERWORTH ROAD BETWEEN SOAR VALLEY WAY AND WIGSTON LANE	North of Monseil Drive, Nthbnd		457066	300426	766	649	1,415	0	0	0	695	589	1,284	-9%	-9%	-9%
A426 LUTTERWORTH ROAD BETWEEN SOAR VALLEY WAY AND WIGSTON LANE	Wigston Lane Junction,		457300	300855	1,057	700	1,756	180	422	602	1,139	1,057	2,196	8%	51%	25%
A563 LUBBESTHORPE WAY/HAND AVENUE	MERIDIAN WAY - A5460 E'BOUND SLIP		455098	300984	1,402	1,693	3,096	144	182	326	1,417	1,719	3,136	1%	2%	1%
A563 LUBBESTHORPE WAY/HAND AVENUE	OSIER'S BRIDGE		455129	300780	1,654	1,669	3,323	0	0	0	1,501	1,515	3,016	-9%	-9%	-9%
A563 LUBBESTHORPE WAY/HAND AVENUE	A5460 W'BOUND SLIP - NARBOROUGH RD		455339	300098	3,062	1,678	4,740	424	0	424	3,203	1,523	4,726	5%	-9%	0%
A563 SOAR VALLEY WAY	B4114 - A426		455805	299915	1,772	2,263	4,034	76	426	502	1,684	2,480	4,164	-5%	10%	3%
A5460 J21 APPROACH ROAD	M1 J21 - A563 JN		454620	300590	3,880	3,492	7,373	465	478	943	3,987	3,648	7,635	3%	4%	4%
A5460 J21 APPROACH ROAD	A563 JN - NARBOROUGH RD S		455510	300549	1,914	1,549	3,463	599	152	751	2,336	1,558	3,894	22%	1%	12%
B582 A47 - A426	A47 - FOREST RD		452503	300333	429	741	1,170	160	202	362	549	875	1,424	28%	18%	22%
B582 A47 - A426	FOREST RD - BEGGAR'S LN		452929	300133	390	924	1,314	275	239	514	629	1,078	1,707	61%	17%	30%
B582 A47 - A426	BEGGAR'S LN - CONERY LN		452929	300133	893	834	1,727	163	520	683	974	1,277	2,251	9%	53%	30%
B582 A47 - A426	CONERY LN - HIGH ST		453714	299445	1,059	683	1,742	0	0	0	961	620	1,581	-9%	-9%	-9%
B582 A47 - A426	HIGH ST - CO-OPERATION ST		453714	299445	984	382	1,366	67	392	459	960	739	1,699	-2%	93%	24%
B582 A47 - A426	CO-OPERATION ST - B4114		454181	299026	752	528	1,280	0	0	0	683	479	1,162	-9%	-9%	-9%
B582 A47 - A426	B4114 - VICTORIA RD		455254	298144	1,102	927	2,028	322	125	447	1,322	966	2,288	20%	4%	13%
B582 A47 - A426	VICTORIA RD - A426		455940	297894	939	709	1,648	288	115	403	1,140	759	1,899	21%	7%	15%
B4114	BRAUNSTONE LN - A5460		455510	300549	1,352	1,557	2,908	239	193	432	1,466	1,606	3,072	8%	3%	6%
B4114	A5460 - A563		455510	300549	1,303	1,404	2,707	296	696	992	1,479	1,970	3,449	13%	40%	27%
B4114	A563 - LEICESTER LN		455339	300098	2,688	2,473	5,161	673	999	1,672	3,113	3,244	6,357	16%	31%	23%
B4114	LEICESTER LN - B582		455017	298966	2,330	1,722	4,052	815	78	893	2,930	1,641	4,571	26%	-5%	13%
B4114	B582 - LEICESTER RD		454884	298718	1,875	1,160	3,035	258	44	302	1,960	1,097	3,057	5%	-5%	1%
B4114	LEICESTER RD - DESFORD RD		453737	297566	1,980	690	2,669	258	44	302	2,055	670	2,725	4%	-3%	2%
B4114	DESFORD RD - COVENTRY RD		453590	297446	1,503	723	2,225	157	265	422	1,521	921	2,442	1%	27%	10%
B4114	COVENTRY RD - HUNCOTE RD		453590	297446	1,570	746	2,316	199	107	306	1,624	784	2,408	3%	5%	4%
B5380 RATBY LANE	KIRBY RD - A47		454185	303552	660	893	1,553	339	42	381	938	853	1,791	42%	-5%	15%
BEGGAR'S LANE	A47 - FOREST HOUSE LN		452228	302712	411	186	597	119	203	322	492	372	864	20%	100%	45%
BRAUNSTONE LANE	A47 - EVELYN RD		454332	303477	383	401	784	51	136	187	399	500	899	4%	25%	15%
BRAUNSTONE LANE	EVELYN RD - BRAUNSTONE AVE/SHAKESPEARE DR		455360	302824	404	354	758	0	0	0	367	321	688	-9%	-9%	-9%
LEICESTER LANE	B582 - B4114		454278	299588	778	489	1,267	58	1,137	1,195	764	1,581	2,345	-2%	223%	85%
LUBBESTHORPE WAY BETWEEN A47 AND MERIDIAN WAY JUNCTION	By Southbnd exit to Meridian Leisure Park		455000	302300	1,088	1,537	2,625	237	158	395	1,225	1,553	2,778	13%	1%	6%
MAIN STREET/KIRBY ROAD	THE SQUARE, GLENFIELD - A46/M1 J21A LINK ROAD		452931	305282	545	263	809	77	249	326	572	488	1,060	5%	85%	31%
MAIN STREET/KIRBY ROAD	A46/M1 J21A LINK ROAD - RATBY LN		452931	305282	1,204	1,022	2,227	398	48	446	1,491	976	2,467	24%	-5%	11%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	Btw Mortimer Way & New Fields St, Nthbnd		456743	302276	1,450	-	1,450	182	0	182	1,498	0	1,498	3%	-	3%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	Btw Mortimer Way & New Fields St, Sthbnd		456745	302254	-	1,444	1,444	0	103	103	0	1,414	1,414	-	-2%	-2%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	Btw New Fields St & Somerville Road		456749	302268	1,787	1,502	3,289	0	0	0	1,622	1,363	2,985	-9%	-9%	-9%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	Nthbnd btw Harlaxton St & Haddenham Road		457100	302800	1,201	855	2,056	182	103	285	1,272	879	2,151	6%	3%	5%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	North of Upperton Road		457547	303488	704	522	1,226	135	39	174	774	513	1,287	10%	-2%	5%
STATION ROAD	A50 - THE SQUARE, GLENFIELD		454564	306925	663	629	1,292	34	152	186	636	723	1,359	-4%	15%	5%
WIGSTON LANE	Wigston Lane Westbound from Pork Pie Roundabout		458198	300275	-	318	318	89	163	252	89	452	541	-	42%	70%

Green: 0-100vph increase  
 Amber: 100-500vph increase  
 Red: 500-2,000vph increase

Table 4: Key Link Flows and Increases due to Lubbersthorpe Only (2031, AM Peak Vehicles/Hour)

Route	KEY LINKS Section	OSGR			BASE LINK FLOWS (veh/hr)			LUBBERSTHORPE FLOWS (veh/hr)			TOTAL LINK FLOWS (veh/hr)			PERCENTAGE INCREASE		
		OSGR E	OSGR N		N/E bnd	S/W bnd	COMB.	N/E bnd	S/W bnd	COMB.	N/E bnd	S/W bnd	COMB.	N/E bnd	S/W bnd	COMB.
M1	J21-21A	453946	302516		-	-	-	67	42	109	67	42	109	-	-	-
M69	BETWEEN J1 and J2	444995	291852		-	-	-	26	88	114	26	88	114	-	-	-
M69	BETWEEN J2 and M1 J21	448571	296543		-	-	-	26	88	114	26	88	114	-	-	-
A46 WESTERN BYPASS	Between M1 J21a and A50	453105	306598		-	-	-	91	28	119	91	28	119	-	-	-
A46 WESTERN BYPASS	Between A50 and A5630	454719	307635		-	-	-	82	17	99	82	17	99	-	-	-
A46 WESTERN BYPASS	Between A5630 and A6	456735	310044		-	-	-	61	17	78	61	17	78	-	-	-
A46/M1 J21A LINK ROAD	A46 - B5380/KIRBY RD	452931	305282		1,003	902	1,905	19	70	89	929	889	1,818	-7%	-1%	-5%
A47 HINCKLEY ROAD	B582 DESFORD RD/LEICESTER LN - BEGGAR'S LN	451816	302482		619	639	1,258	86	140	226	648	720	1,368	5%	13%	9%
A47 HINCKLEY ROAD	BEGGAR'S LN - KIRBY LN	452327	302817		696	874	1,570	315	98	413	947	891	1,838	36%	2%	17%
A47 HINCKLEY ROAD	KIRBY LN - RATBY LN	454185	303552		1,199	911	2,110	315	99	414	1,403	926	2,329	17%	2%	10%
A47 HINCKLEY ROAD	RATBY LN - A563	454185	303552		1,303	726	2,029	193	64	257	1,376	723	2,099	6%	0%	3%
A50 GROBY ROAD	STATION RD/GYNSILL LN - A563 NEW PARKS WAY	455248	306496		1,168	1,699	2,867	0	11	11	1,060	1,553	2,613	-9%	-9%	-9%
A50 MARKFIELD ROAD/LEICESTER ROAD	LEICESTER ROAD, A46 - NEWTOWN LINFORD LN	453857	307406		2,349	1,394	3,742	9	7	16	2,141	1,272	3,413	-9%	-9%	-9%
A50 MARKFIELD ROAD/LEICESTER ROAD	MARKFIELD ROAD, NEWTOWN LINFORD LN - WALLACE DR	451377	308118		2,070	1,333	3,403	7	9	16	1,886	1,219	3,105	-9%	-9%	-9%
A426 LUTTERWORTH ROAD BETWEEN SOAR VALLEY WAY AND WIGSTON LANE	North of A563, Nth	457062	300228		863	621	1,484	44	48	92	827	612	1,439	-4%	-2%	-3%
A426 LUTTERWORTH ROAD BETWEEN SOAR VALLEY WAY AND WIGSTON LANE	North of Monsell Drive, Nthbnd	457066	300426		766	649	1,415	0	0	0	695	589	1,284	-9%	-9%	-9%
A426 LUTTERWORTH ROAD BETWEEN SOAR VALLEY WAY AND WIGSTON LANE	Wigston Lane Junction,	457300	300855		1,057	700	1,756	75	68	143	1,034	703	1,737	-2%	0%	-1%
A563 LUBBESTHORPE WAY/HAND AVENUE	MERIDIAN WAY - A5460 E'BOUND SLIP	455098	300984		1,402	1,693	3,096	84	80	164	1,357	1,617	2,974	-3%	-5%	-4%
A563 LUBBESTHORPE WAY/HAND AVENUE	OSIER'S BRIDGE	455129	300780		1,654	1,669	3,323	0	0	0	1,501	1,515	3,016	-9%	-9%	-9%
A563 LUBBESTHORPE WAY/HAND AVENUE	A5460 W'BOUND SLIP - NARBOROUGH RD	455339	300098		3,062	1,678	4,740	157	0	157	2,936	1,523	4,459	-4%	-9%	-6%
A563 SOAR VALLEY WAY	B4114 - A426	455805	299915		1,772	2,263	4,034	48	50	98	1,656	2,104	3,760	-7%	-7%	-7%
A5460 J21 APPROACH ROAD	M1 J21 - A563 JN	454620	300590		3,880	3,492	7,373	48	142	190	3,570	3,312	6,882	-8%	-5%	-7%
A5460 J21 APPROACH ROAD	A563 JN - NARBOROUGH RD S	455510	300549		1,914	1,549	3,463	92	33	125	1,829	1,439	3,268	-4%	-7%	-6%
B582 A47 - A426	A47 - FOREST RD	452503	300333		429	741	1,170	136	91	227	525	764	1,289	23%	3%	10%
B582 A47 - A426	FOREST RD - BEGGAR'S LN	452929	300133		390	924	1,314	257	89	346	611	928	1,539	57%	0%	17%
B582 A47 - A426	BEGGAR'S LN - CONERY LN	452929	300133		893	834	1,727	96	348	444	907	1,105	2,012	2%	32%	16%
B582 A47 - A426	CONERY LN - HIGH ST	453714	299445		1,059	683	1,742	0	0	0	961	620	1,581	-9%	-9%	-9%
B582 A47 - A426	HIGH ST - CO-OPERATION ST	453714	299445		984	382	1,366	14	348	362	907	695	1,602	-8%	82%	17%
B582 A47 - A426	CO-OPERATION ST - B4114	454181	299026		752	528	1,280	0	0	0	683	479	1,162	-9%	-9%	-9%
B582 A47 - A426	B4114 - VICTORIA RD	455254	298144		1,102	927	2,028	16	62	78	1,016	903	1,919	-8%	-3%	-5%
B582 A47 - A426	VICTORIA RD - A426	455940	297894		939	709	1,648	14	54	68	866	698	1,564	-8%	-2%	-5%
B4114	BRAUNSTONE LN - A5460	455510	300549		1,352	1,557	2,908	118	12	130	1,345	1,425	2,770	-1%	-8%	-5%
B4114	A5460 - A563	455510	300549		1,303	1,404	2,707	101	54	155	1,284	1,328	2,612	-1%	-5%	-4%
B4114	A563 - LEICESTER LN	455339	300098		2,688	2,473	5,161	295	92	387	2,735	2,337	5,072	2%	-6%	-2%
B4114	LEICESTER LN - B582	455017	298966		2,330	1,722	4,052	295	10	305	2,410	1,573	3,983	3%	-9%	-2%
B4114	B582 - LEICESTER RD	454884	298718		1,875	1,160	3,035	2	4	6	1,704	1,057	2,761	-9%	-9%	-9%
B4114	LEICESTER RD - DESFORD RD	453737	297566		1,980	690	2,669	2	4	6	1,799	630	2,429	-9%	-9%	-9%
B4114	DESFORD RD - COVENTRY RD	453590	297446		1,503	723	2,225	81	23	104	1,445	679	2,124	-4%	-6%	-5%
B4114	COVENTRY RD - HUNCOTE RD	453590	297446		1,570	746	2,316	15	53	68	1,440	730	2,170	-8%	-2%	-6%
B5380 RATBY LANE	KIRBY RD - A47	454185	303552		660	893	1,553	91	23	114	690	834	1,524	5%	-7%	-2%
BEGGAR'S LANE	A47 - FOREST HOUSE LN	452228	302712		411	186	597	54	197	251	427	366	793	4%	97%	33%
BRAUNSTONE LANE	A47 - EVELYN RD	454332	303477		383	401	784	44	26	70	392	390	782	2%	-3%	0%
BRAUNSTONE LANE	EVELYN RD - BRAUNSTONE AVE/SHAKESPEARE DR	455360	302824		404	354	758	0	0	0	367	321	688	-9%	-9%	-9%
LEICESTER LANE	B582 - B4114	454278	299588		778	489	1,267	0	83	83	706	527	1,233	-9%	8%	-3%
LUBBESTHORPE WAY BETWEEN A47 AND MERIDIAN WAY JUNCTION	By Southbnd exit to Meridian Leisure Park	455000	302300		1,088	1,537	2,625	151	84	235	1,139	1,479	2,618	5%	-4%	0%
MAIN STREET/KIRBY ROAD	THE SQUARE, GLENFIELD - A46/M1 J21A LINK ROAD	452931	305282		545	263	809	25	7	32	520	246	766	-5%	-7%	-5%
MAIN STREET/KIRBY ROAD	A46/M1 J21A LINK ROAD - RATBY LN	452931	305282		1,204	1,022	2,227	91	23	114	1,184	951	2,135	-2%	-7%	-4%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	Btw Mortimer Way & New Fields St, Nthbnd	456743	302276		1,450	-	1,450	100	0	100	1,416	0	1,416	-2%	-	-2%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	Btw Mortimer Way & New Fields St, Sthbnd	456745	302254		-	1,444	1,444	0	10	10	0	1,321	1,321	-	-9%	-9%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	Btw New Fields St & Somerville Road	456749	302268		1,787	1,502	3,289	0	0	0	1,622	1,363	2,985	-9%	-9%	-9%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	Nthbnd btw Harlaxton St & Haddenham Road	457100	302800		1,201	855	2,056	100	10	110	1,190	786	1,976	-1%	-8%	-4%
NARBOROUGH RD NORTH OF BRAUNSTONE LANE	North of Upperton Road	457547	303488		704	522	1,226	74	2	76	713	476	1,189	1%	-9%	-3%
STATION ROAD	A50 - THE SQUARE, GLENFIELD	454564	306925		663	629	1,292	0	0	0	602	571	1,173	-9%	-9%	-9%
WIGSTON LANE	Wigston Lane Westbound from Pork Pie Roundabout	458198	300275		-	318	318	45	14	59	45	303	348	-	-5%	9%

Green: 0-100vph increase  
 Amber: 100-500vph increase  
 Red: 500-2,000vph increase